Report of the Committee on Safety to Life

Technical Correlating Committee (AAC)

J. Kenneth Richardson, Chair Nat’l Research Council of Canada, ON

Ron Coté, Nonvoting Secretary Nat’l Fire Protection Assn.


John L. Bryan, Frederick, MD

Lee J. Dosedlo, Underwriters Laboratories Inc., IL

Gene B. Endthoff, Nat’l Fire Sprinkler Assn., IL

Andrew J. Fowell, NIST/Center for Fire Research, MD


Lawrence G. Perry, Bldg. Owners & Managers Assn. Int’l., MD

James R. Quiter, Rolf Jensen & Assoc., Inc., GA


David W. Stroup, U.S. General Services Administration, DC


Alternates

Alastair J. M. Aikman, Nat’l Research Council of Canada, ON (Alt. to J. K. Richardson)

Frederick C. Bradley, Gage-Babcock & Assoc. Inc., GA (Alt. to T. W. Jaeger)


J. Thomas Carter, Chloride Systems, NC (Alt. to R. K. Mengel)

L. Darl Cross, West Virginia State Fire Marshals Office, WV (Alt. to W. Smithe)


Glenn A. Erickson, Hastings, MN (Alt to J. F. Behrens)

Russell P. Fleming, Nat’l Fire Sprinkler Assn., NY (Alt to G. Endthoff)

Robert J. Pollock, Underwriters Laboratories Inc., IL (Alt to L. J. Dosedlo)

Martin H. Rees, Rolf Jensen & Assoc., Inc., MA (Alt. to J. Quiter)

Michael D. Tomy, Heery Int’l., Inc., GA (Alt to K. W. Perry)

Nonvoting

Wayne G. (Chip) Carson, Chair HEA Carson Assoc., Inc., VA

John G. Degenkolb, Chair TEN Carson City, NV

Philip C. Favro, Chair BCF Favro Assoc., VA

William Hlavaty, Chair MER The Taubman Co., MI

Richard A. Hudnut, Chair DET Builders Hardware Mfrs. Assn., NY

Joseph M. Jardin, Chair RES New York City Fire Dept., NY


William E. Koffel Jr., Chair MEA Koffel Assoc., Inc., MD

Gerald E. Lingenfelter, Chair FUR American Insurance Services Group Inc., NY

John W. McCormick, Chair FIR Rolf Jensen & Assoc., Inc., NJ

Jonas L. Morehart, Punta Gorda, FL (Member Emeritus)

Harold E. Nelson, Chair ALS Hughes Assoc. Inc., MD

Richard R. Osman, Chair BSF Schirmer Engy Corp., IL

Thomas V. Rodante, Chair IND Caltex Services Corp., TX

John A. Sharry, Chair AXE Lawrence Livermore Nat’l. Laboratory, CA

John M. Watts Jr., Chair FUN Fire Safety Inst., VT

Ron Coté

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on the protection of human life from fire and other circumstances capable of producing similar consequences and for the nonemergency and emergency movement of people.

Technical Committee on Assembly and Educational Occupancies (AXE)

(Chapters 8 to 11, Sections 31-3 and 31-5, and associated portions of Appendix A)

(Alt. to J. Quiter)

John A. Sharry, Chair

Lawrence Livermore Nat’l. Laboratory, GA

Ron Coté, Nonvoting Secretary

Nat’l Fire Protection Assn.


John G. Degenkolb, Carson City, NV Rep. Alliance of Motion Picture & Television Producers


Jerrold Gorrell, Phoenix Civic Plaza, AZ Rep. National City of Safety Engr

Alfred J. Hogan, Reed Creek Improvement District Walt Disney World, FL


Robert J. Little, Church of Jesus Christ of Latter-day Saints, UT Rep. The Alliance of American Insurers


John Morris, Loss Control Services, GA Rep. T/C Cultural Resources


Paul L. Wertheimer, Crowd Management Strategies, IL Alternates

Robert D. Barnes, Wheaton, IL (Alt. to J. Morris)

William O. Beard, Des Moines Convention Center, IA (Alt. to F. Poe)
This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences and on the emergency movement of people, in residential board and care facilities.

Technical Committee on Building Service and Fire Protection Equipment (BSF)

(Chapter 7, 31-1.3.8, 31-1.39, and associated portions of Appendix A)

Richard R. Osman, Chair
Schirmer Engr Corp., IL

Harry L. Bradley, Maryland State Fire Marshals Office, MD
Rep. Fire Marshals Assn. of North America

Pat D. Brock, Oklahoma State University, OK
Edward A. Donoghue, Edward A. Donoghue Assoc., Inc., NY

Joseph M. Jardin, New York City Fire Dept., NY
Rep. NFPA Fire Service Section

Ronald Kirby, Simplex Time Recorder Co., MA

David P. Klein, U.S. Dept. of Veterans Affairs, MD

Richard L. Klinker, Klinker & Assoc., Inc., MD

James D. Lake, Nat'l. Fire Sprinkler Assn., NY

Roger L. McDaniel, Florida Dept. of Corrections, FL

L. L. (Larry) Nebauer, Automatic Fire Alarm Assn., FL

Joseph A. Nicoll Jr., Rochester Fire Dept., NY

Martin H. Reiss, Rolf Jensen & Assoc., Inc., MA

John T. Wandell, Town of Palm Beach Fire/Rescue, FL

Alternates

Ronald S. Berger, SJS Signal & Communication Corp., NJ
(Alt. to L. L. Nebauer)

Greg Gottlieb, Hauppauge Fire District, NY
(Alt. to J. M. Jardin)

Claudia Hagood, Klinker & Assoc., Inc., MD
(Alt. to R. L. Klinker)

Kenneth E. Isman, Nat'l. Fire Sprinkler Assn., NY
(Alt. to J. D. Lake)

Rolf H. Jensen, Rolf Jensen & Assoc., Inc., IL
(Alt. to M. H. Reiss)

Peter A. Larrimer, U.S. Dept. of Veterans Affairs, PA
(Alt. to D. P. Klein)

Eugene A. LaValle, Sentrol, Inc., GA
(Alt. to R. Kirby)

Staff Liaison: Ron Coté

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences and on the emergency movement of people.
Technical Committee on
Detention and Correctional Occupancies (DET)
(Chapters 14 and 15, Section 31-5, and associated portions of Appendix A)

Richard A. Hudnut, Chair
Builders Hardware Mfrs. Assn., NY

Ron Coté, Nonvoting Secretary
Nat'l Fire Protection Assn.

James R. Ambrose, Code Consultants Inc., MO
Francis C. Barbaro, Hampden County Sheriff's Dept., MA
Michael DiMascio, Solutions Engr Inc., MA
Edward Larry Earls, U.S. Federal Bureau of Prisons, DC
Randy Gaw, Correctional Service of Canada, ON
Larry Harrison, Office of Illinois State Fire Marshal, IL
James D. Lake, Nat'l Fire Sprinkler Assn., NY
Alfred J. Loughitano, Gage-Babcock & Assoc. Inc., NY
Roger L. McDaniel, Dept. of Corrections, FL
Robert McNeely, Honeywell, Inc., IL
E. Eugene McNeely, Honeywell, Inc., IL
Robert N. Perry, Robert Perry Assoc. Inc., IL
Kenneth J. Schwartz, Rolf Jensen & Assoc., Inc., IL
Wayne S. Smith, Texas Commission on Fire Protection Regions, TX
Rep. Fire Marshals Assn. of North America
Sharon M. Stone, Koffel Assoc. Inc., MD
Charles A. Whitehead, Lexington County, SC
Rep. American Society of Safety Eng'rs

Alternates
Vincent T. Fitzpatrick, Rolf Jensen & Assoc., Inc., VA
(Alt. to K. Schwartz)
A. Larry Iseminger Jr., Maryland State Fire Marshal's Office, MD
(Alt. to W. S. Smith)
Kenneth E. Lesnak, Nat'l. Fire Sprinkler Assn., NY
(Alt. to J. D. Lake)
Thomas W. Jaeger, Gage-Babcock & Assoc. Inc., VA
(Alt. to A. J. Loughitano)
William E. Koffel Jr., Koffel Assoc. Inc., MD
(Alt. to S. Stone)
Joseph G. Lesniak, Door & Hardware Inst., VA
(Alt. to R. R. Perry)
Richard R. McDaniel, Office of the Illinois State Fire Marshal, IL
(Alt. to L. Harrison)
Winn F. Peeples, Florida Dept. of Corrections, FL
(Alt. to F. L. McDaniel)
Steven E. Rawson, Simplex Time Recorder Co., MA
(Alt. to R. McNeely)

Staff Liaison: Ron Coté

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences and on the emergency movement of people in detention and correctional occupancies.

Technical Committee on
Fire Protection Features (FIR)
(Sections 6-1 to 6-4, 31-1.2, 31-1.5, and associated portions of Appendix A)

John W. McCormick, Chair
Rolf Jensen & Assoc., Inc., NJ

Carl F. Baldassarra, Schirmer Engr Corp., IL
John F. Bender, Office of Maryland State Fire Marshal, MD
Rep. Fire Marshals Assn. of North America
Robert M. Berhing, Underwriters Laboratories Inc., IL
Peter H. Billing, American Forest & Paper Assn., FL
Byron L. Briese, HSB Professional Loss Control, Inc., TN
Edward K. Budnick, Hughes Assoc. Inc., MD
Gregory J. Cahalin, St. Petersburg, FL
Raman B. Chauhan, Nat'l. Research Council of Canada, ON
Thomas G. Daly, Hilton Hotels Corp., CA
Rep. NFPA Lodging Industry Section
Robert E. Davis, Air Movement & Control Assn., IL
John G. Degenkolb, Carson City, NV
Rep. Alliance of Motion Picture & Television Producers
Steven DiPilla, CIGNA Loss Control Services, NJ
Gene B. Endthoff, Nat'l. Fire Sprinkler Assn., IL
Robert F. Lattey, Liberty Mutual Insurance Group, MA
Rep. The Alliance of American Insurers
Daniel M. McGee, American Iron & Steel Inst., NJ
Joseph J. Merssmith Jr., Portland Cement Assn., VA
Kathy A. Notarianni, U.S. Nat'l. Inst. of Standards & Technology, MD
Sharon M. Stone, Koffel Assoc. Inc., MD
Kenneth Wood, Bardett, IL

Alternates
Robert H. Barker, American Fiber Mfrs. Assn., DC
(Alt. to T. L. Jilg)
Kenneth E. Bland, American Forest & Paper Assn., DC
(Alt. to F. H. Billings)
Delbert Boring Jr., American Iron & Steel Inst., OH
(Alt. to D. M. McGee)
David Degenkolb, Degenkolb Engr, NV
(Alt. to J. G. Degenkolb)
John F. Devlin, Schirmer Eng'rs Corp., VA
(Alt. to C. F. Baldassarra)
Mark Kluever, Portland Cement Assn., CA
(Alt. to J. J. Messersmith)
William E. Koffel Jr., Koffel Assoc. Inc., MD
(Alt. to S. M. Stone)
James D. Lake, Nat'l. Fire Sprinkler Assn., NY
(Alt. to G. Endthoff)
Jeffrey A. Maddox, Rolf Jensen & Assoc., Inc., CA
(Alt. to J. W. McCormick)
William D. Walton, NIST Center for Fire Research, MD
(Alt. to K. A. Notarianni)

Nonvoting
Michael Earl Dillon, Dillon Consulting Engr, Inc., CA
Rep. T/C on Air Conditioning

Staff Liaison: Ron Coté

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences and on the emergency movement of people.
This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Technical Committee on 
Fundamentals (FUN) 
(Chapters 1, 2, 3, 4, and 32, 31-1.3, 31-1.5, and associated portions of Appendix A) 
John M. Watts Jr., Chair 
Fire Safety Inst., VT 
Ron Coté, Nonvoting Secretary 
Nat’l Fire Protection Assn.

John F. Behrens, Huntington Beach, CA 
James R. Berry, Underwriters Laboratories Inc., IL 
Wayne G. (Chip) Carson, Carson Assoc., Inc., VA 
David P. Klein, U.S. Dept. of Veterans Affairs, MD 
James C. Norris, Union Carbide, PA 
Thomas V. Rodante, Caltex Services Corp., TX 
Walter Snellie III, West Virginia State Fire Marshal, WV 
Rep. Fire Marshals Assn. of North America 
David W. Street, U.S. General Services Administration, DC 

Alternate 
Eugene A. Cable, U.S. Dept. of Veterans Affairs, NY 
(Alt. to D. P. Klein) 
Ron Cott, Nonvoting Secretary 
Nat’l Fire Protection Assn.

Staff Liaison: Ron Coté 

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences and on the emergency movement of people.

Technical Committee on 
Furnishings and Contents (FUR) 
(Section 6-5, 31-1.4, and associated portions of Appendix A) 
Gerard E. Lingenfelter, Chair 
American Insurance Services Group Inc., NY 
Ron Coté, Nonvoting Secretary 
Nat’l Fire Protection Assn.

Alastair J. M. Aikman, Nat’l. Research Council of Canada, ON 
Vytenis Babrauskas, Fire Science & Technology Inc., MD 
Donald W. Belles, Donald W. Belles & Assoc. Inc., TN 
John P. Blair, The DuPont Co., DE 
Richard W. Bukowski, U.S. Nat’l. Inst. of Standards & Technology, MD 
Eugene A. Cable, U.S. Dept. of Veterans Affairs, NY 
Frederic B. Clarke, Benjamin/Claude Assoc., Inc., MD 
P. H. Dillon, Southern College of Technology, GA 
Rep. Sleep Products Safety Council 
Douglas S. Erickson, American Hospital Assn., IL 
William E. Fitch, Omega Point Laboratories Inc., TX 
Marcelo M. Hirschler, Safety Engr Laboratories, CA 
Herman Stone, General Foam Division of PMC, Inc., PA 
T. Hugh Talley, Hugh Talley Co., TN 
James J. Urban, Underwriters Laboratories Inc., IL 
Kay M. Villa, American Textile Mfrs. Inst., DC 

Alternates 
Raman B. Chauhan, Nat’l. Research Council, ON 
(Alt. to J. M. Aikman) 
Alfred J. Hogan, Reedy Creek Improvement District Walt Disney World, FL 
(Vol. Alt. to RCID Rep.) 
James V. Ryan, Potomac, MD 
Rep. B. Clarke Assoc. 
(Alt. to F. B. Clarke) 
Ron Cott, Nonvoting Secretary 
Nat’l Fire Protection Assn.

Arthur Bergantz, Code Consultants Inc., MO 
William N. Brooks, Britjac, Kambic & Assoc., PA 
Kenneth E. Bush, Maryland State Fire Marshals Office, MD 
Rep. Fire Marshals Assn. of North America 
Michael Crowley, Rolf Jensen & Assoc., Inc., TX 
Scot Deal, NIST/Bldg. & Fire Research Laboratories, MD 
Kenneth S. Faustich, U.S. Dept. of Veterans Affairs, DC 
Edwin S. Green, MEHTA Assoc., KY 
Rep. Federation of American Health Systems 
Thomas W. Jaeger, Cage Babcock & Assoc. Inc., VA 
William E. Koffel Jr., Koffel Assoc., Inc., MD 
Ronald R. Mengel, Pinway Systems Technology Group, IL 
Daniel J. O’Connor, Schirmer Engr Corp., IL 
Kirby W. Perry, Kirby W. Perry Architects & Assoc. Inc., TX 
Rep. American Inst. of Architects 
Peter P. Potresky, Pennsylvania Dept. of Health, PA 
Rep. Assn. of Health Facility Survey Agencies 
David M. Side, David M. Side & Assoc., TX 
Richard D. Strub, Hillhaven Corp., WA 
Rep. NFPA Health Care Section 
Mayer D. Zimmerman, U.S. Dept. of Health & Human Services 
Health Care Financing Administration, MD 

Alternates 
James R. Ambrose, Code Consultants Inc., MO 
(Alt. to A. Bergantz) 
James H. Antell, Rolf Jensen & Assoc., Inc., IL 
(Alt. to M. Crowley) 
David A. de Wees, Schirmer Engr Corp., IL 
(Alt. to D. J. O’Connor) 
Douglas S. Erickson, American Hospital Assn., IL 
(Alt. to W. Koffel) 
Lawrence P. Gallagher, Joint Commission on Accreditation of Healthcare Organizations, IL 
(Vol. Alt. to JCAHO) 
J. Richard Fruth, Hayes Large Architect, PA 
(Alt. to K. Perry) 
Edward M. Shedlock, U.S. Dept. of Veterans Affairs, FL 
(Alt. to K. Faustich) 
William D. Walton, NIST/Center for Fire Research, MD 
(Alt. to S. Davis) 
Roger J. Wilson, Simplex Time Recorder Co., MA 
(Alt. to R. K. Mengel) 

Staff Liaison: Ron Côté 

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on limiting the impact of furnishings and building contents effect on protection of human life from fire and other circumstances capable of producing similar consequences and on the nonemergency movement of people.
Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences and on the nonemergency and emergency movement of people.

Technical Committee on
Means of Egress (MEA)
(Chapter 5, 31-1.1.1, 31-1.2, 31-1.3.7, and associated portions of Appendix A)

William E. Koffel Jr., Chair
Koffel Assoc., Inc., MD

Ron Coté, Nonvoting Secretary
Nat'l Fire Protection Assn.

Alastair J. M. Aitken, Nat'l. Research Council of Canada, ON
John L. Barrios, Tampa Dept. Business & Community Development, FL
John F. Behrens, Huntington Beach, CA
Rep. Int'l Conference of Bldg. Officials
John L. Bryan, Frederick, MD
Kenneth E. Bush, Maryland State Fire Marshals Office, MD
Rep. Fire Marshals Assn. of North America
David A. de Vries, Schirmer Engr Corp., IL
Steven Di Pilla, CIGNA Loss Control Services, NJ
Joshua W. Elvore, U.S. Dept. of Veterans Affairs, CA
Glenn A. Erickson, Hastings, MN

Technical Committee on
Industrial, Storage and Miscellaneous Occupancies (IND)
(Chapters 28 through 30, and associated portions of Appendix A)

Thomas V. Rodante, Chair
Calix Services Corp., TX

Kenneth E. Berg, Moraga, CA
Donald C. Birchler, FP&C Consultants Inc., MO
Howard M. Bucci, Westinghouse Hanford Co., WA
John E. Eichernacht, Firesafety Consultants, TX
John F. Farney Jr., Sargent & Lundy Engr, IL
Larry N. Garrett, General Motors Corp., IN
Rep. NFPA Industrial Fire Protection Section
Bruce W. Hisley, Nat'l Fire Academy FEMA, U.S. Fire Administration, MD
Rep. Fire Marshals Assn. of North America
Wayne D. Holmes, HSB Professional Loss Control Inc., GT
Rep. Fire Marshals Assn. of North America
Robert L. Smith Jr., Westinghouse Savannah River Co., SC
Rep. NFPA Industrial Fire Protection Section

Alternate
Glenn F. Grace, CIGNA, TX
(Alt. to G. Shauer)

Nonvoting
Glen E. Gardner, U.S. Occupational Safety & Health Administration, DC

Staff Liaison: Ron Coté

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Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences, and on the emergency movement of people, in industrial and storage occupancies, special structures, windowless and underground buildings, and high rise buildings.

Committee Scope: This Committee shall have primary responsibility for documents on the general requirements for safe egress for protection of human life from fire and other circumstances capable of producing similar consequences and on the nonemergency and emergency movement of people.

Technical Committee on
Mercantile and Business Occupancies (MER)
(Chapters 24 to 27, Sections 31-8 and 31-9, and associated portions of Appendix A)

William Hiotaky, Chair
The Taubman Co., MI

Raymond E. Arnot, University of Minnesota, MN
Rep. American Society of Safety Eng'rs
David M. Banwarth, Prince George County Fire Dept., MD
Kenneth E. Bland, American Forest & Paper Assn., DC
E. Joseph Bocc, U.S. Dept. of the Interior, DC
Byron L. Briese, HSB Professional Loss Control, Inc., TN
Kenneth E. Bush, Maryland State Fire Marshals Office, MD
Rep. Fire Marshals Assn. of North America
Daniel J. Gauvin, Simplex Time Recorder Co., MA
Richard F. Lattey, Liberty Mutual Insurance Group, MA
Rep. The Alliance of American Insurers

Alternate
Steven J. Altamura, Underwriters Laboratories Inc., NY
(Alt. to W. Menz)

John R. Battles, Southern Bldg. Code Congress Int'l, AL
(Alt. to J. L. Burris)

Charles H. Berry, U.S. Dept. of Veterans Affairs, MD
(Alt. to J. W. Elvove)

Paul Christiansen, Prescolite, CA
(Alt. to B. G. Helton)

Gene B. Endthoff, Nat'l. Fire Sprinkler Assn., IL
(Alt. to K. E. Isman)

John H. Klote, U.S. Nat'l. Inst. of Standards & Technology, MD
(Alt. to D. Madrzykowski)

James K. Lathrop, Koffel Assoc., CT
(Alt. to W. E. Koffel)

R. T. Leicht, CIGNA Loss Control Services Inc., DE
(Alt. to S. Di Pilla)

James A. Milke, University of Maryland, MD
(Alt. to J. L. Bryan)

James R. Quinter, Rolf Jensen & Assoc., Inc., CA
(Alt. to L. Strull)

Eric Rosenbaum, Hughes Assoc. Inc., MD
(Alt. to H. E. Nelson)

Roy W. Schwarzenberg, U.S. Central Intelligence Agency, DC
(Alt. to L. J. McGinty)

David W. Sroup, U.S. General Services Administration, DC
(Alt. to D. W. Frable)

Staff Liaison: Ron Coté

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on the general requirements for safe egress for protection of human life from fire and other circumstances capable of producing similar consequences and on the nonemergency and emergency movement of people.
Technical Committee on
Residential Occupancies (RES)

(Chapters 16 to 21, Section 31-6, and associated portions of Appendix A)

Joseph M. Jardin, Chair
New York City Fire Dept., NY
Rep. NFPA Fire Service Section

Alternates

Carl F. Baldassarra, Schirmer Engr Corp., IL
(Alt. to R. R. Osman)
Peter H. Billing, American Forest & Paper Assn., FL
(Alt. to R. E. Bland)
Delbert F. Boring Jr., American Iron & Steel Inst., OH
(Alt. to D. M. McGee)
(Alt. to L. C. Perry)
Pat Ryan, Tomes, VanRickley & Assoc., CA
(Alt. to W. J. Tomes)
David W. Stroup, U.S. General Services Administration, DC
(Vot. Alt. to GSA Rep.)

Staff Liaison: Ron Coté

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences, and for the emergency movement of people, in mercantile and business occupancies.

Committee Scope: This Committee shall have primary responsibility for documents on protection of human life from fire and other circumstances capable of producing similar consequences, and for the emergency movement of people, in mercantile and business occupancies.

The Report of the Committee on Safety to Life is presented for adoption.

This Report was prepared by the:
- Technical Correlating Committee on Safety to Life (AAC),
- Technical Committee on Assembly and Educational Occupancies (AXE),
- Technical Committee on Board and Care Facilities (BCF),
- Technical Committee on Building Service and Fire Protection Equipment (BSF),
- Technical Committee on Detention and Correctional Occupancies (DET),
- Technical Committee on Fire Protection Features (FIR),
- Technical Committee on Fundamentals (FUN),
- Technical Committee on Furnishings and Contents (EUR),
- Technical Committee on Health Care Occupancies (HEA),
- Technical Committee on Industrial, Storage and Miscellaneous Occupancies (IND),
- Technical Committee on Means of Egress (MEA),
- Technical Committee on Mercantile and Business Occupancies (MER), and
- Technical Committee on Residential Occupancies (RES).


This Report has also been submitted to letter ballot of the applicable Life Safety Technical Committees. The results of the balloting can be found in the report.
NFPA 101 — F96 ROP

101-1. (Entire Document): Reject

SUBMITTER: Allan M. Apo, American Insurance Services Group, Inc.


SUBSTANTIATION: The current revision cycle for a standard as large as this one is too short. The standard was just printed and the insurance industry, as an Authority Having Jurisdiction, has not had enough time to work with the standard.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The three-year revision cycle was chosen by the Technical Correlating Committee on Safety to Life, and approved by the NFPA Standards Council, to permit the Code to be revised often enough to reflect new and developing technologies. Because public input is important to the revision process, the schedule was changed to permit public proposals to be submitted for three months longer than in past revision cycles (i.e., April proposal closing date rather than January).

If the industry that the submitter represents does not have sufficient time to review the new edition during the thirteen months between the code's publication/release and the proposal closing date, it can submit proposals during the next revision cycle.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 7

NOT RETURNED: 2 Behrens, Rodante

101-2. (Entire Document): Accept

SUBMITTER: James Ladhrop, Koffel Associates, Inc.

RECOMMENDATION: Replace Chapter 1 and its associated Appendix A material with the following:

CHAPTER 1 * GENERAL INFORMATION

SECTION 1-1 TITLE

1-1.1 Title. NFPA 101®, Code for Safety to Life from Fire in Buildings and Structures, shall be known as the Life Safety Code, as cited in NFPA 101, Section 1-1.2. It is best to plan the Code with a life safety focus.

SECTION 1-2 SCOPE

1-2.1 This Code addresses life safety from fire. Its provisions will be moved to move Ambulatory Health Care out of Chapters 12 & 13. This was held until a larger rewrite was being done. This appears to be a good time if in fact day care is being moved. If changes are to be made it would be a good opportunity to add some reserved space for other items that are currently in the wind.

It may be desirable to move the old Chapter 10 up front. Whatever is decided the following should be remembered:

(1) Try to anticipate some years in advance, people strongly resist changing the numbers. There are still many people out there that refer to health care as Chapter 10.

(2) Retain a relationship of even numbers for new and odd for existing. This has been found to be very user friendly.

COMMITTEE ACTION: Accept.

COMMITTEE STATEMENT: In contemplating any major renumbering of the code it is important that future needs be anticipated because code users find renumbering to be disruptive to their effective use of the document. Because it is yet unknown what renumbering/reformatting will be needed to accommodate the planned inclusion of performance-based design criteria, it is best to do as little renumbering as necessary during this revision cycle. The Technical Correlating Committee on Safety to Life can use the next three years to address the long term needs for renumbering.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 7

NOT RETURNED: 2 Behrens, Rodante

101-3. (Chapter 1 and A-1): Accept

SUBMITTER: Technical Committee on Fundamentals.

RECOMMENDATION: Replace Chapter 1 and its associated Appendix A with the following:

CHAPTER 1 * GENERAL INFORMATION

SECTION 1-1 TITLE

1-1.1 Title. NFPA 101®, Code for Safety to Life from Fire in Buildings and Structures, shall be known as the Life Safety Code, as cited in NFPA 101, Section 1-1.2. It is best to plan the Code with a life safety focus.

SECTION 1-2 SCOPE

1-2.1 This Code addresses life safety from fire. Its provisions will also aid life safety in similar emergencies.

1-2.2 * The Code addresses those construction, protection, and occupancy factors necessary to minimize danger to life from fire, including smoke, fumes, or panic.

1-2.3 The Code identifies the minimum criteria for the design of egress facilities so as to permit prompt escape of occupants from buildings or, where desirable, into safe areas within buildings.

1-2.4 The Code recognizes that life safety is more than a matter of egress and, accordingly, deals with other considerations that are essential to life safety.

1-2.5 Vehicles, vessels, or other similar conveyances, as defined in Section 3.1.3, shall be treated as a building.

1-2.6 The Code does not attempt to address all those general fire prevention or building construction features that are normally a function of fire prevention and building codes.

1-2.7 The prevention of personal injuries incurred by an individual's own negligence, and the preservation of property from loss by fire have not been considered as the basis for any of the provisions of this Code.

1-2.8 * The Code does not attempt to address the safety of persons who purposely enter an area where conditions are, or are likely to be, dangerous due to fire or its products.

SECTION 1-3 APPLICATION

1-3.1 New and Existing Buildings. The Code applies to both new construction and existing buildings. In various chapters there are specific provisions for existing buildings that might differ from those for new construction.

1-3.2 Time Allowed for Compliance. A limited but reasonable time shall be allowed for compliance with any part of this Code for existing buildings commensurate with the magnitude of expenditure, disruption of services, and degree of hazard.

1-3.3 Authority Having Jurisdiction. The authority having jurisdiction shall determine the adequacy of means of egress and other measures for life safety from fire in accordance with the provisions of this Code.

1-3.4 * Modification of Requirements for Existing Buildings. The requirements for existing buildings shall be permitted to be modified if their application clearly would be impractical in the judgment of the authority having jurisdiction, but only where it is clearly evident that a reasonable degree of safety is provided.

1-3.5 Reference Publications. Existing buildings or installations that do not comply with the provisions of the referenced standards
contained in this document (see Chapter 32) shall be permitted to be continued in service provided the lack of conformity with these standards does not present a serious hazard to the occupants as determined by the authority having jurisdiction.

1-3.6 Additions. Additions shall conform to the provisions for new construction.

1-3.7* Modernization or Renovation. Any alteration or any installation of new equipment shall be accomplished as nearly as practicable with the requirements for new construction. Only the altered, renovated or modernized portion of an existing building, system or individual component shall be required to meet the provisions of this Code applicable to new construction provided other life safety features are in place and continuously maintained. The provisions of Chapters 1 through 7 do not present a serious hazard to the occupants as required for compliance with the provisions of this Code applicable to new construction.

1-3.8 Priorities of Chapter Requirements. Where specific requirements contained in Chapters 8 through 30 differ from general requirements contained in Chapters 1 through 7, the requirements of Chapters 8 through 30 shall govern.

1-3.9 Provisions in Excess of Code Requirements. Nothing in this Code shall be construed to prohibit a better type of building construction, additional means of egress, or otherwise safer conditions than those specified by the minimum requirements of this Code.

1-3.10 Conditions for Occupancy. No new construction or existing building shall be occupied in whole or in part in violation of the provisions of this Code.

Exception: Buildings shall be permitted to remain in use, provided:

(a) A plan of correction has been approved, and
(b) The occupancy classification remains the same, and
(c) No serious life safety hazard exists as judged by the authority having jurisdiction.

1-3.11* Occupancy During Renovation. Buildings or portions of buildings shall be permitted to be occupied during construction, repair, alterations, or additions only if all required means of egress and all required life safety features are in place and continuously maintained for the portion occupied.

1-3.12* Changes of Occupancy. In any building or structure, whether necessitating a physical alteration or not, a change from one occupancy classification to another, or from one subclassification to another subclassification of the same occupancy, shall be permitted only if such structure, building, or portion thereof conforms with the requirements of this Code applying to new construction for the proposed new use.

1-3.13 Maintenance and Testing.

1-3.13.1 Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this Code, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be continuously maintained in operating condition in accordance with applicable NFPA requirements or as directed by the authority having jurisdiction.

1-3.13.2* Existing safety features shall be retained, but not limited to, automatic sprinklers, fire alarm systems, standpipes, and horizontal exits, if not required by the Code, either shall be maintained or removed.

1-3.13.3 Equipment requiring periodic testing or operation to ensure its maintenance shall be tested or operated as specified elsewhere in this Code or as directed by the authority having jurisdiction.

1-3.14 Maintenance and testing shall be under the supervision of a responsible person who shall ensure that testing and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the authority having jurisdiction.

SECTION 1-4. PURPOSE

1-4.1 The purpose of this Code is to provide minimum requirements, with due regard to function, for the design, operation, and maintenance of buildings and structures for safety to life from fire. Its provisions will also aid life safety in similar emergencies.

1-4.2* As related to fire safety, an objective of this Code is to protect the occupants not intimate with the initial fire development from loss of life and to improve the survivability of those who are intimate with the fire development.

1-4.3* Protection of occupants is achieved by the combination of protection, prevention, protection, egress, and other features with due regard to the capability and reliability of the features involved.

1-4.4* The Code endeavors to avoid requirements that might involve unreasonable hardships or unnecessary inconvenience or interference with the normal use and occupancy of a building, but provides for fire safety in public interest.

SECTION 1-5 ASSUMPTIONS

1-5.1 The protection methods assume a single fire source.

SECTION 1-6 EQUIVALENCY

1-6.1* Nothing in this Code is intended to preclude the use of equivalent methods, test methods, systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety as alternatives to those prescribed by this Code, provided technical documentation is submitted to the authority having jurisdiction to demonstrate equivalency, and the system, method, or device is approved for the intended purpose.

1-6.2* Alternative systems, methods, or devices approved as equivalent by the authority having jurisdiction shall be recognized as being in compliance with this Code.

SECTION 1-7* FIRE EXIT DRILLS

1-7.1 Fire exit drills conforming to the provisions of this Code shall be regularly conducted in occupancies where specified by the provisions of Chapters 8 through 30, or by the authority having jurisdiction. Drills shall be designed in cooperation with the local authorities.

1-7.2* Fire exit drills, where required by the authority having jurisdiction, shall be held with sufficient frequency to familiarize occupants with the drill procedure and to have the conduct of the drill a matter of established routine. Drills shall include suitable procedures to ensure that all persons in the building or all persons subject to the drill actually participate.

1-7.3 Responsibility for the planning and conduct of drills shall be assigned only to competent persons qualified to exercise leadership.

1-7.4 In the conduct of drills, emphasis shall be placed on orderly evacuation under proper discipline rather than speed.

1-7.5* Drills shall be held at expected and unexpected times and under varying conditions to simulate the unusual conditions that occur in the case of fire.

SECTION 1-8 UNITS

1-8.1 Metric units of measurement in this Code are in accordance with the modernized metric system known as the International System of Units (SI).

1-8.2 If a value for measurement as given in this Code is followed by an equivalent value in other units, the first stated shall be regarded as the requirement. A given equivalent value may be approximate.

1-8.3 The conversion procedure for the SI units has been to multiply the quantity by the conversion factor and then round the result to the appropriate number of significant digits.

A-1 The following is a suggested procedure for determining the Code requirements for a building or structure.

6. Determine the occupancy subclassification or special use condition, if any. Chapters 8 and 9, "Assembly Occupancies"; Chapters 12 and 15, "Health Care Occupancies"; Chapters 14 and 15, "Detention and Correctional Occupancies"; Chapters 16 and 17, "Hotels and Dormitories"; Chapters 22 and 23, "Residential Board and Care Occupancies"; and Chapters 24 and 25, "Mercantile Occupancies" contain subclassifications or special use definitions.

7. Proceed through the applicable occupancy chapter verifying compliance with each referenced section, subsection, paragraph, subparagraph, and referenced codes, standards, and other documents.

8. Where two or more requirements apply, the occupancy chapter generally takes precedence over the base Chapters 1 through 7, and over two or more chapters applying to the proposed new use, as in a mixed use building, the most stringent requirements apply.

A-1-2.2 The Code recognizes that panic in a burning building may be uncontrollable, but deals with the potential panic hazard through measures designed to prevent the development of panic. Experience indicates that panic seldom develops, even in the presence of uncertainty as to the location or adequacy of means of egress, the presence of smoke, or the stoppage of egress travel, such as may occur when one person stumbles and falls on the stairs, may be conducive to panic. Panic danger is greatest when there are large numbers of people in a confined area.

A-1-2.8 Examples of persons who purposely enter dangerous areas include fire fighters, firefighting brigade members, and rescue service personnel while such persons are engaged in fire fighting, rescue, or other emergency operations; building occupants who attempt fire fighting or rescue; and persons who reenter dangerous areas.
A-1-3.4 In existing buildings, it is not always practical to strictly apply the provisions of this Code. Physical limitations may require disproportionate effort or expense with little increase in life safety. In such cases, the authority having jurisdiction should be satisfied that reasonable life safety measures are ensured.

In existing buildings it is intended that any condition that represents a serious threat to life be mitigated by application of appropriate safeguards. It is not intended to require modifications for conditions that do not represent a significant threat to life, even though such conditions are not literally in compliance with the Code.

A-1-3.7 The following is an example of what is intended by 1-3.7. In a hospital that has 6-ft (1.8-m) wide corridors, these corridors cannot be reduced in width even though the requirements for existing hospitals do not require 6-ft (1.8-m) wide corridors. However, if a hospital has 10-ft (3-m) wide corridors, they may be reduced to 8 ft (2.4 m) width, which is the requirement for new construction. If the hospital corridor exceeds 10 ft (0.0 m) width, it would have to be increased to 10 ft (3 m). If alterations require replacement of a portion of a hospital corridor wall, this portion of the corridor would not be required to be increased to 8 ft (2.4 m) in width unless it was practical to do so.

A-1-3.11 Fatal fires have occurred when a required stair has been closed for repairs or removed for rebuilding, when a required automatic sprinkler system has been shut off to change piping, etc. A-1-3.12 Escape from one occupancy subclassification to another subclassification of the same occupancy could include a change from a Class A to a Class B assembly occupancy or from a change from a Class B to a Class A mercantile occupancy. Hospitals and nursing homes, which are health care occupancies and are treated separately, but they are not established as separate occupancies; thus, a change from one to the other does not constitute a change of occupancy subclassification.

As another example, a building was used as a hospital but has been closed for four years. It is again to be used as a hospital. As long as the building was not used as another occupancy during the time it was closed, it would be considered existing.

Hospitals and apartments, although both residential occupancies, are treated separately, and a change from one to the other constitutes a change of occupancy.

A-1-3.13.2 The presence of a life safety feature, such as sprinklers or fire alarm devices, creates a reasonable expectation by the public that these safety features will function in case of fire and are not established as separate occupancies; thus, a change from one to the other does not constitute a change of occupancy subclassification.

A-1-3.14.3 The level of life safety from fire is defined through requirements directed at the:

(a) Prevention of ignition.
(b) Detection of fire.
(c) Control of fire development.
(d) Confinement of the effects of fire.
(e) Extinguishment of fire.
(f) Provision of egress and/or evacuation facilities.
(g) Staff reaction.

A-1-3.15.2 The presence of a life safety feature, such as sprinklers or fire alarm devices, creates a reasonable expectation by the public that these safety features will function in case of fire and are not established as separate occupancies; thus, a change from one to the other does not constitute a change of occupancy subclassification.

A-1-3.15.3 The purpose of fire exit drills is to educate the building occupants in the fire safety features and the egress facilities available. Speed in emptying buildings, while desirable, is not the only objective. The metalness of any exit or usefulness of any egress path that can be carried depends on the character of the occupancy, it being most effective in occupancies where the occupant load of the building is under discipline and subject to habitual control. For example, schools offer possibilities of more highly developed and valuable fire exit drills than other types of occupancy.

In buildings where the occupant load is of a changing character and not under discipline, such as hotels or department stores, no regularly organized fire exit drill, such as those conducted in schools, is possible. In such cases, the fire exit drills must be limited to the regular employees, who can, however, be thoroughly schooled in the proper procedure and can be trained to proceed direct to the fire exits in case of fire. In occupancies such as hospitals, regular employees can be rehearsed in the proper procedure in case of fire; such training is always advisable in all occupancies whether or not regular fire exit drills can be held.

A-1-7.2 If a fire exit drill is conducted merely as a routine exercise from which some persons may be excused, there is a grave danger that in an actual fire the drill will fail in its intended purpose. However, there might be some circumstances under which all occupants might not participate in a fire exit drill, for example, infirm or bedridden patients in a health care occupancy.

Other noneditorial changes, not individually substantiated here, reflect the committee action on other proposals on Chapter 1 and its appendix material. See those proposals for details on why the changes were made.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 7
NOT RETURNED: 2 Behrens, Rodante

COMMITTEE STATEMENT: The renumbering is needed because of the renumbering/refactoring of Chapter 1 done by Proposal 101-3 (Log #CP100).
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 7
NOT RETURNED: 2 Behrens, Rodante

101-4 - (1-2.2): Reject
SUBMITTER: David Stroup, U.S. General Services Administration
RECOMMENDATION: Revise 1-2.2 to read as follows: As related to fire safety, the objective of this Code is to provide reasonable protection for the occupants not intimate with the initial fire development from loss of life and to improve the survivability of those who are intimate with the fire development. The protection methods assume a single fire source.
SUBSTANTIATION: The existing wording is unclear in that it implies an absolute level of protection for occupants not intimate with ignition while requiring some lesser level for occupants intimate with ignition. The proposed change would clarify the concept that nothing is absolute and both levels are relative measures. The occupancy chapters can set levels of protection appropriate to the hazards.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: Revisions are being made to Chapter 1 via committee-generated Proposal 101-3 (Log #CP100) in anticipation of incorporating performance-based design to a greater degree. That option necessitates dropping existing ambiguous terms, such as the word "reasonable," and guarding against adding new ambiguous terms.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 7
NOT RETURNED: 2 Behrens, Rodante

COMMITTEE STATEMENT: Revisions are being made to Chapter 1 via committee-generated Proposal 101-3 (Log #CP100) in anticipation of incorporating performance-based design to a greater degree. That option necessitates dropping existing ambiguous terms, such as the word "reasonable," and guarding against adding new ambiguous terms.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 7
NOT RETURNED: 2 Behrens, Rodante

101-7 - (1-4 (New)): Reject
SUBMITTER: Philip Jose, VA Regional Division Office
RECOMMENDATION: Add new text to read as follows: "When using this Code it is intended that, once a new edition is issued, there shall be no reason to reference previous editions. Buildings in existence on the date of acceptance of the latest edition must meet only existing requirements for the applicable occupancy. The user is reminded of the requirements under Section 1-4.6 that apply to modernization and renovation which prohibit diminishing existing Life Safety features that exceed the requirements for existing buildings."
SUBSTANTIATION: To make clear to all users when the requirements of new and existing should be used.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The problem described in Proposals 101-8 (Log #258) and 101-7 (Log #141) is an enforcement issue rather than a code specification issue and, thus, can not effectively be addressed by this Code.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 7
NOT RETURNED: 2 Behrens, Rodante

101-8 - (1-4 (New)): Reject
SUBMITTER: Eugene A. Cable, U.S. Department of Veterans Affairs
RECOMMENDATION: Add a new Section 1-4.1.1:
"A building, addition, or alteration designed to the requirements of a prior Code edition, shall be required to meet that edition’s NEW requirements for the life of the building. Any requirement(s) for existing facilities in this Code edition shall only apply if they are more stringent."
SUBSTANTIATION: Currently, Code language can literally be interpreted to mean the existing chapter requirements are applied to all buildings, except for the initial inspection after new construction. This interpretation, if allowed to continue, profoundly devalues this Code to a minimum level of safety economically tolerable for retroactive application(s).
I submit that this new sub-paragraph, or one like it, is extremely important to clarify Code intent. A change to the definition of "existing" or "building existing" would not adequately address such an important issue. I also submit changes to those definitions in order to avoid conflict with this new proposal.
The building code/fire code system, such as the UBC/IFC, operate under the premise that a new building or alteration (requiring a permit) must be built to the building Code in effect at time of permit. From that point on that edition of the building code becomes the "existing chapter" for future inspections (concerning building features). The famous "grandfather clause" steps in to protect the building owner from continuous upgrades when new building Code editions are adopted. But the current owner of the building is always responsible to maintain his building in compliance with the edition of the building Code under which it was built. For this Life Safety Code, the "grandfather clause" steps in:
(There are many, many other possible scenarios where this issue becomes important.) True, the AHJ would have to make the ultimate decision of enforcement and Code intent, but we the NFPA membership and fundamentals committee owe it to the Authority Having Jurisdiction to make the rules clear.
Illustration 1. A new, four story addition, health care occupancy, is added to an existing hospital. Plans were approved in 1992 for compliance with the 1991 Code for new health care. For whatever reason, the new addition is built without sprinkler protection. During 1996, after the latest edition 1994 Life Safety Code is adopted, the building is inspected and (for the first time) recognized as not meeting the 1991 Life Safety Code for full sprinkler protection.
This health care addition complies with 1994 "Existing" health care. Does the Code require the building to be sprinkler protected?
Should an A/E design or construction mistake be allowed to continue?

Illustration 2. In 1987 a new nine story health care occupancy is built supposedly in compliance with the 1985 Life Safety Code, adopted by the Authority Having Jurisdiction in 1985. During 1996 an issue concerning minor alterations to vertical HVAC shafts reveals that the shaft and all other shafts including stairway shafts were originally built to only 1-hour fire resistive construction. The shafts were not in compliance with the Life Safety Code for new when it was built, but it is in compliance with existing 1994 Life Safety Code. Does the code require the owner to fix the 1987 mistake?

Illustration 3. In 1987 that same nine story new health care occupancy is built supposedly in compliance with the 1985 Life Safety Code. As allowed then, the building is not sprinkler protected. During 1996, an issue concerning patient room windows reveals that the original windows as part of a system of "area of refuge" without sprinklers. The 1994 Life Safety Code "existing health care" does not require retrofitting windows to be openable. To complicate things, the 1994 new health care does not require openable windows either, due to mandatory quick response sprinklers. Does the Code require the owner to provide openable windows?

Note that the current Section 1-4.6 provides some code language to prevent degradation of features once installed. But, that assumes the ideal situation that the features were installed in compliance with NEW and that the inspector knows it was there.

The NFPA membership established a Life Safety Code to provide "minimum requirements" for new construction. To submit to the membership that "minimum requirements" should be complied with for the life of the building.

COMMITTEE ACTION: Rejected.

COMMITTEE STATEMENT: The problem described in Proposals 101 - 5: (Log #156) and 101 - 7 (Log #141) is an enforcement issue rather than a code specification issue and, thus, can not be effectively addressed by this code.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 7

NOT RETURNED: 2 Behrens, Rodante

101-11 - (1-6.1 Exception): Accept

SUBMITTER: James K. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Delete the term "existing" from the exception.

SUBSTANTIATION: Based on the definition of "building, existing" in Chapter 3 a building could be several years old and still be considered "new" especially if newer editions of the code are not adopted. Minor violations could develop in a building, such as burned out bulbs in an exit sign that do not warrant evacuating the building as long as the requirements of the exception are met with any truly "existing" buildings. The term "shall be permitted to remain in use" should clarify that we are talking about a building that has already been occupied.

COMMITTEE ACTION: Accept.

COMMITTEE STATEMENT: Note that paragraph 1-6.1 has been renumbered as 1-3.7 based on Proposal 101 - 5 (Log #CP100).

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 7

NOT RETURNED: 2 Behrens, Rodante

101-12 - (1-6.2 and 31-1.11): Accept

Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Fundamentals (FUN), which has main responsibility for Chapter 1 provisions, provide needed changes or offer concurrence with the placement of the material in Chapter 1 given that the proposal was acted on by the Life Safety Technical Committee on Means of Egress (MEA).

SUBMITTER: Technical Committee on Means of Egress

RECOMMENDATION: In Chapter 1 add a new heading as follows: 1-6.2 Construction, Repair, and Improvement Operations. Renumber current 1-6.2 to become 1-6.2.1. Move 31-1.1.1 to become 1-6.2.2 as follows: "1-6.2.2 In buildings under construction, adequate escape facilities shall be maintained at all time during the use of construction workers. Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of the Code insofar as they can reasonably be applied to buildings under construction. (See also NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations.)"

Create an appendix item A-1-6.2.2 to read: "A-1-6.2.2 See also NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations."

From beneath the title of Chapter 5 Means of Egress, page 101-26, delete "(See also Chapter 31)."

SUBSTANTIATION: The proposal editorially moves Section 31-1 material to the core chapters (1 through 7) as directed by the Technical Correlating Committee on Safety to Life. Although 31-
1.1.1 has been under the responsibility of the Technical Committee on Means of Egress, the material will fit more appropriately in Chapter 1, rather than Chapter 5.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 24

**NOT RETURNED:** 2 Behrens, Tomy

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101-13 - (1.6.3 Exception (New)): Accept

**Note:** The Technical Correlating Committee on Safety to Life (AIC) directs that a public comment be submitted in the correlating committee's report requesting that the Life Safety Technical Committee on Fundamentals (TFC), which has main responsibility for Chapter 1 provisions, provide needed changes or offer concurrence with the placement of the material in Chapter 1 given that the proposal was added by the Life Safety Technical Committee on Board and Care Facilities (BCF).

**SUBMITTER:** Technical Committee on Board and Care Facilities, RECOMMENDATION: Add an exception to 1.6.3 to read as follows:

"Where permitted by Chapters 22 or 23, existing construction features shall be permitted to be continued in use in conversions of existing residential or health care occupancies to a residential and care occupancy as defined in 21.3.1 and 22.1.3."

**SUBSTANTIATION:** In Chapter 22 of the 1994 edition of the Life Safety Code, there are numerous exceptions for existing construction features for "conversions". The conversions that are intended to be allowed in use of these exceptions involving converting an existing one- and two-family dwelling, lodging or rooming house, or apartment unit to a residential and care occupancy. Because the building is existing and therefore the construction features exist, it is not practical to change these construction features so as to comply with the requirements for new construction. Relatively little would be gained, for example, in requiring an existing 28 in. door to be changed to 32 in. The current exceptions appear in 22-2.2.5.1 Exception No. 1, 22-3.3.6.4 Exception No.1 and Exception No. 2.

**COMMITTEE ACTION:** Accept.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 18

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 18

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101-14 - (1.7.1, 31-1.3.1): Accept in Principle

**SUBMITTER:** Margaret R. Engwer, VA Medical Center

**RECOMMENDATION:** Revise 1.7.1 and 31-1.3.1 to read:

"Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this Code, such device, equipment, system, condition, arrangement, level of protection, or other feature shall be permanently maintained in accordance with applicable NFPA requirements or as directed by the authority having jurisdiction unless the Code exempts such maintenance.

**SUBSTANTIATION:** 1.7.1 and 31-1.3.1 require maintenance of fire protection systems, and 31-1.3.4 states that testing and operation for maintenance shall be done as specified elsewhere in this Code, or as directed by the authority having jurisdiction.

There are a number of sections and paragraphs that require installation in accordance with a specific NFPA requirement, but requirements for maintenance are not identified. For example, 23-3.5.4.6 requires that smoke detection systems be provided in accordance with NFPA 72, but NFPA 72 is not referenced for maintenance of these systems.

The proposed revision will clarify that in the absence of AHJ requirements, the applicable NFPA requirements should be followed for maintenance of fire protection equipment.

**COMMITTEE ACTION:** Accept in Principle.

Revise current 1.7.1 to read:

"Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this Code, such device, equipment, system, condition, arrangement, level of protection, or other feature shall be continuously maintained in accordance with applicable NFPA requirements or as directed by the authority having jurisdiction."

**COMMITTEE STATEMENT:** The Committee Action accomplishes that which the submitter requested and also makes editorial changes. This should meet the submitter's intent. Note that paragraph 1.7.1 has been renumbered as 1.3.1.3.1 via Proposal 101-5 (Log #CP5).

**101-15 - (2.3): Reject**

**SUBMITTER:** Robert A. Gorrell, ASI

**RECOMMENDATION:** Every building or structure shall be provided with exits and other safeguards of kinds, numbers, locations, and capacities appropriate to the occupancy, the capabilities of the occupants, the number of persons exposed, the fire protection available, the height and type of construction of the building or structure, and other factors necessary to provide all occupants with a reasonable degree of safety. Accessible rooms or spaces shall be provided with Accessible Means of Egress and Accessible Means of Escape.

**SUBSTANTIATION:** Building Codes and the ADAAG require a percentage of most rooms or spaces to be accessible. Occupants of accessible spaces or rooms need "exits and other safeguards of kinds, locations, and capacities appropriate to the occupancy". The need for Accessible Means of Egress is obvious and is generally provided for by "Accessible Route" requirements of Codes and the ADAAG. However, and Accessible Means of Escape, for a disabled person, may be more important to survival than the Means of Egress. Access to fresh air and a way to call for help are primary functions of an emergency escape opening. Of all fire-related deaths, 75% are from smoke inhalation so being able to open an emergency opening, typically the operable window, is very important. The AAMA provides a voluntary maximum force of operation for standard windows of 45 pounds. For many people this standard may be too low and the windows to be welded shut. Also see proposed definition for Accessible Means of Escape for Section 3-2.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** Proposer's wording would add redundancy. There is no need to distinguish among the occupants in the building. The requirement of this paragraph applies to "all occupants."

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 9

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 7

**NOT RETURNED:** 2 Behrens, Rodante

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101-16 - (3-2 Accessible Means of Escape (New)): Reject

**SUBMITTER:** Robert A. Gorrell, ASI

**RECOMMENDATION:** A definition for Accessible Means of Escape to Section 3-2 as follows:

"Accessible Means of Escape. An accessible way out of a building or structure complying with CABO/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities, that does not conform to the strict definition of means of egress but does provide an alternate way out.

**SUBSTANTIATION:** A mobility impaired person or a person of limited strength may not be able to mobilize as quickly to an emergency as the average population. The Emergency Escape and Rescue Window or an exterior door are critical to self-preservation. Access to fresh air and a way to call for help could mean survival. Accessible spaces must have adequate life safety consideration with regard to the intended occupancy (see Section 2-3). If the occupant cannot use the door, window, or pathway, what good are they? ANSI A117.1 provides the standard needed to make doors, windows, and interior passageways accessible and usable by the occupant. Also see proposed addition to Section 2-3.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** Submitter's use of "accessible" is a separately definable term of escape, rather than part of a recognized term that would need to be defined in the Code. The Code does not apply accessibility requirements to means of escape.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 24

**NOT RETURNED:** 2 Behrens, Tomy
101-17 - (3-2 Birth Centers, 4-1.8 and A-4.1.8): Accept
SUBMITTER: Technical Committee on Health Care Occupancies,
RECOMMENDATION: In Chapter 3, Section 3-2, add a definition of Birth Center as follows:
Birth Center. A facility where low risk births are planned to occur following normal, uncomplicated pregnancy, providing professional midwifery care to women during pregnancy, birth and postpartum.
To the 4-1.8 list of business occupancy examples, add "birth centers".
Add appendix note A-4.1.8 (ded to the addition of the term "birth center" in the list of business occupancy examples) to read:
A-4.1.8 Birth Center. The birth center is a low volume service for healthy, childbearing families capable of ambulation in the event of fire or fire threatening events. Birth center mothers and babies have minimal analgesia, no general or regional anesthesia, and are capable of ambulation, even in second stage labor.
SUBSTANTIATION: Birth centers that meet the proposed definition involve occupants who are capable of self preservation. Birth centers are mistakenly classified as health care occupancies. The proposal clarifies that birth centers should be considered as business occupancies. The proposed appendix note further clarifies this.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 15
NEGATIVE: 1
NOT RETURNED: 2
EXPLANATION OF VOTE:
BUSH: The proposed definition and classification of birth centers is very misleading and not representative of actual conditions. Rather than assigning definitions to these or any other occupancy by name only, a more performance based specification is needed due to the flexibility in services provided and fluid nature in the progression of these facilities. By inserting the performance criteria for patient ambulation as an appendix item only, the enforcement of the limitations for facility services and occupant evacuation capabilities is not possible. In addition, the blanket assignment of birth centers as business occupancies may severely restrict the design and operation of these facilities as other occupancy types especially where medical services may be provided or overnight accommodations desirable.

101-19 - (3-2 Building, Existing and Existing): Accept in Principle
SUBMITTER: Philip Jose, VA Regional Division Office
RECOMMENDATION: Add the words "edition of the" before the word "Code" in the definitions of Existing Building and Existing.
SUBSTANTIATION: To clarify intent.
COMMITTEE ACTION: Accept in Principle.
COMMITTEE STATEMENT: The Committee Action should meet the submitter's intent. The revision to the definition of "existing building" does what the submitter recommended and further clarifies committee intent. Given that the list of examples, in the definition of "existing," can not be all inclusive it is better to drop the phrase "such as existing buildings, structures, or egress facilities" so as to read: Existing. That which is already in existence on the date when this edition of the Code goes into effect.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 7
NOT RETURNED: 2 Behrens, Rodante

101-20 - (3-2 Dwelling Unit): Accept
SUBMITTER: Eugene A. Cable, U.S. Department of Veterans Affairs
RECOMMENDATION: Revise to add as follows:
Dwelling Unit. A single unit, providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.
SUBSTANTIATION: To define the term "dwelling unit" which is used extensively in Chapters 18 and 19.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 25
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
NOT RETURNED: 2

101-21 - (3-2 Existing): Reject
SUBMITTER: Eugene A. Cable, U.S. Department of Veterans Affairs
RECOMMENDATION: Revise to read as follows:
Existing. That which is already in existence on the date when this Code is adopted for the first time, such as existing buildings, structures, or egress facilities. Existing buildings, structures, or egress facilities remain "existing" as subsequent Code editions are adopted, only if they are not modernized, renovated, or altered.
SUBSTANTIATION: Eliminates confusion. Adoption of the latest edition should not allow buildings, fire safety features, etc. to be inspected for compliance only to existing.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The proposer's wording would create a definition in conflict with Committee intent and in conflict with the revised application section, especially 1-3.1. Also, see Committee Action on Proposal 101-19 (Log #142) which revises the definitions of "existing building" and "existing" to clarify Committee intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 7
NOT RETURNED: 2 Behrens, Rodante
101-22 - (3-2 Fire Barrier Wall (New)): Accept
Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee’s name requesting that the Life Safety Technical Committee on Fundamentals (FUN), which has main responsibility for Chapter 3 provisions, provide needed changes or offer concurrence with the placement of the material in Chapter 3 given that the proposal was acted on by the Life Safety Technical Committee on Fire Protection Features (FIR).

RECOMMENDATION: Add a definition of “fire barrier wall” to Section 3-2 to read:
Fire Barrier Wall. A wall, other than a fire wall, having a fire resistance rating.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 12
NEGATIVE: 1
NOT RETURNED: 2 Bender, Notarianni
EXPLANATION OF NEGATIVE:
KLEIN: I think our reference to NFPA 221, “Standard for Fire Walls and Fire Barrier Walls” is premature since our committee’s use of the term “fire barrier” may not be intended for application in the same way as is intended by NFPA 221. We permit a “fire barrier” under existing Section 6-2.3 to be a minimum of 20 minutes and under proposed Log #192 to be a minimum of 30 minutes. If we reference Chapter 3 of NFPA 221, Chapter 3 (3-1) requires compliance with Chapter 4 of NFPA 221. Section 4-2 of NFPA 221 requires “Penetration Seals” per ASTM E814, which would then be applicable to NFPA 101 “fire barrier” that is fire rated less than one hour. Also, Section 5-2 of NFPA 221 on “Termination Points” may not be what our committee is perceiving when designing a 20 or 30 minute “fire barrier” under NFPA 101. As long as we use under NFPA 101 the term “fire barrier” for assemblies under one hour fire rated, we better be very clear of our reference to another NFPA standard that may not have considered how we use this term. We may cause these common 20-30 minute “fire barriers” to be very costly to build and maintain without any reasonable justification.

101-23 - (3-2 Fire Protection Rating): Accept
Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee’s name requesting that the Life Safety Technical Committee on Fundamentals (FUN), which has main responsibility for Chapter 3 provisions, provide needed changes or offer concurrence with the placement of the material in Chapter 3 given that the proposal was acted on by the Life Safety Technical Committee on Fire Protection Features (FIR).

RECOMMENDATION: Add a definition of “fire protection rating” to Section 3-2 to read:
Fire Protection Rating. The designation indicating the duration of the fire test exposure to which a fire door assembly or fire window assembly was exposed and successfully met all the acceptance criteria as determined in accordance with NFPA 252, Standard Methods of Fire Tests of Door Assemblies, or NFPA 257, Standard for Fire Tests of Window Assemblies, respectively.

SUBSTANTIATION: The term “fire protection rating” will take on added importance based on the action taken on Proposal 101 - 120 (Log #CP312) on 6-2.3. Therefore, the term needs to be defined in the Code. The proposed definition is consistent with that in NFPA 80, Standard for Fire Doors and Fire Windows.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NEGATIVE: 1
NOT RETURNED: 2 Bender, Notarianni
SUBMITTER: Jeffrey LaSalle, Brinjac, Kambic & Assoc.
RECOMMENDATION: Add the following:
"Factors to be considered in assigning hazard classifications to building contents include their anticipated heat release rate versus time curve, peak heat release rates, smoke obscuration potential, and chemical composition. Hazard classification shall also account for room geometry and ventilation conditions."

COMMITTEE STATEMENT: The criteria suggested would be impractical to enforce, especially for new construction where the building operator would need to submit detailed product information on planned contents. The proposer's detailed breakdown is inconsistent with the current classification scheme that describes low hazard, ordinary hazard, and high hazard contents. The committee could not discern any immediate benefit to making the proposed change. The classification of hazard of contents is relatively easily accomplished qualitatively without the level of detail suggested by the submitter. In some future revision cycle, if the Code is changed to recognize performance-based designs more explicitly, the concept proposed might be more applicable.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 7
NOT RETURNED: 2 Behrens, Rodante

COMMITTEE ACTION: Reject.
to recognize performance-based designs more explicitly, the concept proposed might be more applicable.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 9

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 7

NOT RETURNED: 2 Behrens, Rodante

(Log #CP200)

MEA

10-1: 30. (Chapter 5): Accept.

Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Means of Egress (MEA) reconsider the portion of the recommendation that would change current 5-2.6.2.5 to 5-2.6.2.8 by changing the words "the exterior of a" to "an outside" because it appears to change the intent of the section. Also, MEA is asked to reconsider the portion of the recommendation that in the last paragraph of 5-2.6.2 (after Exception to 6) requires a 1 1/2 rated door regardless of whether the enclosure walls are rated 2 hours or 1 hour. The changes referenced appear to be more than editorial.

SUBMITTER: Technical Committee on Means of Egress, RECOMMENDATION: Make the following changes noted in the following draft of Chapter 5. Additions are noted by underlined text; deletions are noted by strikethroughs.

CHAPTER 5 MEANS OF EGRESS

(See also Chapter 31.)

SECTION 5-1 GENERAL

5-1.1* Application. Means of egress for both new and existing buildings shall comply with this chapter. (Also see Chapter 1 and Section 4-2-1.)

5-1.2 Definitions.

Accessible Means of Egress. A path of travel, usable by a person with a severe mobility impairment, that leads to a public way or an area of refuge. (See 5-2.4.)

Accessible Area of Refuge. An area of refuge that complies with the accessible route requirements of CABO/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities. (See 5-2.12.) An area of refuge is either:

(a) A *story* in a building when such building is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7 and has at least two accessible rooms or spaces separated from each other by smoke resisting partitions, or

Exception to (a): Two accessible rooms or spaces shall not be required as permitted by in Chapters 8 through 29.

(b) A *space*, in a path of travel leading to a public way, that is protected from the effects of fire, either by means of separation from other spaces in the same building or by virtue of location, thereby permitting a delay in egress travel from any level.

Common Path of Travel. That portion of exit access that must be traversed before two separate and distinct paths of travel to two exits are available. Paths that merge are common paths of travel.

Common path of travel is measured in the same manner as travel distance but terminates at that point where two separate and distinct rectangular areas become available.

Exit. That portion of a means of egress that is separated from all other spaces of the building or structure by construction or equipment as required in accordance with 5-1.3.2 to provide a protected way of travel to the exit discharge. Exit includes exterior exit doors, exit passageways, horizontal exits, separated exit stairs, and separated exit ramps. (See 5-2.4.)

Insert new first sentence to existing appendix item:

5-1.2.1 Exit. Exit includes exterior exit doors, exit passageways, horizontal exits, separated exit stairs, and separated exit ramps. In the case...

Exit Access. That portion of a means of egress that leads to an exit.

Exit Discharge. That portion of a means of egress between the termination of an exit and a public way.

Horizontal Exit. A way of passage from one building to another building that runs approximately the same level, or a way of passage through or around a fire barrier to an area of refuge on approximately the same level in the same building that affords safety from fire and smoke originating from the area of incidence and areas communicating therewith. (See 5-2.4.)

Means of Egress. A continuous and unobstructed way of exit travel from any point in a building or structure to a public way consisting of three separate and distinct parts: (a) the exit access, (b) the exit, and (c) the exit discharge. Means of egress comprises the vertical and horizontal travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts, and yards. (move to appendix)

16

A-5-1.2 Means of Egress. A means of egress comprises the vertical and horizontal travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts, and yards. (move to appendix)

American National Standard for Accessible and Usable Buildings and Facilities. (See also Section 31.)

Exception No. 1: Existing buildings, provided the occupancy classification does not change.

Exception No. 2: As otherwise provided in Chapters 8 through 29.

Exception No. 3: Where a stair enclosure connects a two-story exit discharge with a two-story apartment building in accordance with 16-2.2.1.2 and 19-2.2.1.2.

(c) Any openings therein shall be protected by fire door assemblies equipped with working closers complying with 5-2.1.8.

(d) Openings in exit enclosures shall be limited to those necessary for access to the enclosure from normally occupied spaces and corridors, and for egress from the enclosure.

(e) Penetrations into and openings through an exit enclosure assembly are prohibited except for electrical conduit serving the stairway, required exit doors, duct work and equipment necessary for independent stair pressurization, water or steam piping necessary for the heating or cooling of the exit enclosure, sprinkler piping, and smoke vents.

(f) There shall be no penetrations or communicating openings are prohibited between adjacent exit enclosures.

Exception to (e): Existing penetrations protected in accordance with 5-2.3.6. and 5-2.3.7.2.2. In existing buildings, where a two-story exit enclosure connects the story of exit discharge with an adjacent story the story above or below, but not both, the exit shall be required only to be closed on the story of exit discharge if at least 50 percent of the number and capacity of exits on the story of exit discharge shall be independent of such enclosures.

5-1-9.4.5.1.3.2.3. The exit enclosure shall provide a continuous protected path of travel to an exit discharge. The enclosing walls of these shall be arranged so that such an exit enclosure shall be independent of the adjacent story. Exit enclosures shall include exterior exit doors, exit passageways, horizontal exits, separated exit stairs, and separated exit ramps.

5-1-9.4.5.1.4.4 No An exit enclosure shall not be used for any purpose that could have the potential to interfere with its use as an exit and, if so designated, as an area of refuge. (See also A-5-2.2.5.)

16-2.2.1.2 Exit Access Corridors. Corridors used as exit access and serving an area having an occupant load of more than 50 shall be separated from other parts of the building by construction having a 2-hour fire resistance rating in accordance with 6-2.3. (move to 5-2.3.1.)

Exception No. 1: Existing buildings, provided the occupancy classification does not change.

Exception No. 2: As otherwise provided in Chapters 8 through 29.

5-1-9.5.1 Exit Passageways. An exit passageway that serves as a discharge from a stair enclosure shall have the same fire resistance rating and opening protective fire protection rating as that required for the stair enclosure. (move to 5-2.3.1.) Accessible areas and stairs shall be separated from other parts of the building as specified in accordance with 5-1-9.5.1.3.2. (move to 5-2.6.2.)
Exception No. 1: Fire windows in accordance with 6.2.3.4 shall be permitted to be installed in such a separation in a building protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 7-7.

Exception No. 2: Existing fixed wired glass panels in steel shall be permitted to be continued in use in such a separation in a building protected throughout by an approved, automatic sprinkler system in accordance with Section 7-7.

5-1.4 Interior Finish at Falls. The flame spread of interior finish on walls and ceilings shall be limited to Class A or Class B in exit enclosures in accordance with Section 6-5. (See Chapters 8 through 29 for further limitations.) Exception: In one- and two-family dwellings and in existing buildings where the door discharges to the outside or to an exterior balcony or exterior exit access, the floor level outside the door shall be permitted to be one step lower than the inside, but not more than 8 in. (203 cm) lower.

5-1.5 Headroom. Means of egress shall be designed and maintained to provide adequate headroom as provided in other sections of this Code (see 5-2.2.1), and doorways shall be at least 7 ft 6 in. (2.3 m) tall. Where projections from the ceiling shall be less than at least 6 ft 8 in. (2.03 m) nominal height from above the finished floor. Headroom on stairs is the vertical distance measured vertically above a plane parallel to and tangent with the most forward projection of the stair tread. Exception: In existing buildings, the ceiling height shall not be less than at least 7 ft 6 in. (213 cm) from above the finished floor with no projections below at least 6 ft 8 in. (203 cm) nominal height from above the finished floor.

5-1.6 Changes in Level in Means of Egress. Changes in level in means of egress shall be by a ramp or a stair where the elevation difference is more than 21 in. (55.3 cm).

Exception No. 1: As provided in 5-2.1.6.

Exception No. 2: In one- and two-family dwellings and in existing buildings where the door discharges to the outside or to an exterior balcony or exterior exit access, the floor level outside the door shall be permitted to be one step lower than the inside, but not more than 8 in. (203 cm) lower.

5-1.7.1 Door Special Considerations. The door shall be designed and installed so that it is capable of swinging from any position to the full use of the opening in which it is installed. Doors shall swing in the direction of egress travel where serving a room or area with an occupant load of 50 or more.

Exception No. 1: Sliding doors in detection and correctional occupancies as provided in Chapters 14, and 15, and doors for dwelling units as provided in Chapter 21.

Exception No. 2: Smoke barrier door swing as provided in Chapters 14, and 15.

Exception No. 3: Doors in horizontal exits shall not be required to swing in the direction of egress travel where specifically exempted by 5-2.4.3.6.

Exception No. 4: Where permitted by in Chapters 8 through 29, horizontal sliding or vertical rolling security grilles or doors that are part of the required means of egress shall be permitted provided conform to the following:

(a) They shall remain secured in the full open position during the period of occupancy by the general public; and
(b) On or adjacent to the door, there shall be a readily visible, durable sign in letters at least 1 in. (2.5 cm) high on a contrasting background that reads "This Door to Remain OPEN! THE BUILDING IS OCCUPIED." The sign shall be in letters not less than 1 in. (2.5 cm) high on a contrasting background.
(c) Doors or grilles shall not be brought to the closed position when the space is occupied.
(d) Doors or grilles shall be operable by persons from within the space without the use of any special knowledge or effort, and
(e) Where two or more means of egress are required, not more than half of the means of egress shall be equipped with horizontal sliding or vertical rolling grilles or doors.

Exception No. 5: Horizontal sliding doors complying with 5-2.1.14.

Exception No. 6: Doors to private garages and industrial and storage areas with an occupant load of not more than 10 persons.

Exception No. 7: Revolving doors complying with 5-2.1.10.

Exception No. 8: Existing fusible link-operated horizontal sliding or vertical rolling fire doors where specifically permitted by in Chapters 8 through 29.

5-1.2.2 Doors shall swing in the direction of egress travel where used in an exit enclosure or where serving a high hazard contents area.

Exception: Doors from individual living units that open directly into an exit enclosure need not swing in the direction of egress travel.

5-2.1.4.5 During its swing, any door in a means of egress shall leave unobstructed at least not obstruct more than one half of the required width of an aisle, corridor, passageway, or landing. When fully open, the door shall not obstruct more than 7 in. (17.8 cm) into the required width of an aisle, corridor, passageway, or landing when fully open. Doors shall not open immediately onto a stair without a landing. The landing shall have a width at least equal to the width of the door. (See 5-2.1.5)

Exception: In existing buildings, a door providing access to a stair shall maintain an unobstructed width of a stair or landing to at least 32 in. (81.3 cm) clear width. When open, project not more than 7 in. (17.8 cm) into the required width of a stair or landing.

5-2.1.4.4 The forces required to fully open any door manually in a means of egress shall not exceed 15 lbf (67 N) to release the latch, 50 lbf (225 N) to swing the full width, nor project more than 15 lbf (67 N) to open the door to the minimum required width opening. Forces for interior side-hinged or pivoted-swinging doors without closers shall not exceed be more than 5 lbf (22 N). These forces shall be applied at the latch side.
Exception No. 1: The opening force for doors in existing buildings shall not exceed be more than 50 lbf (222 N) applied to the latch side.

Exception No. 2: Horizontal sliding doors in detention and correctional occupancies as provided in Chapters 14, and 15.

Exception No. 3: Power-operated doors as provided in 5-2.1.9.

5-2.1.5.3 Exception. Examples of devices that can be arranged to require not more than one releasing operation include night latches, dead bolts, and security chains.

5-2.1.5.4 Where pairs of doors are required in a means of egress shall be swinging against the direction of egress travel where doors are required to swing in the direction of egress travel.

5-2.1.5.5 No lock, padlock, hasp, bar, chain, or other device, or combination thereof, shall be installed in connection with any door on which panic hardware or fire exit hardware is required by Code if provided such device prevents or is intended to prevent the free use of the door for purposes of egress.

[New appendix item]

Exception: As otherwise provided in 5-2.1.6.

5-2.1.5.6 Examples of devices prohibited by this requirement include locks, padlocks, hasps, bars, chains, or combinations thereof. Exception: As otherwise provided in 5-2.1.6.

5-2.1.5.7 Delayed egress locks. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving low and ordinary hazard contents buildings protected throughout by an approved, supervised automatic fire detection system installed in accordance with Section 7-6, and where specifically permitted by in Chapters 8 through 29, provided: doors permitted to be equipped with hardware that prevents reentry into the interior of the building provided that:

(a) The doors are unlocked upon activation of an approved, supervised automatic sprinkler system installed in accordance with Section 7-7, or upon the activation of any heat detector or not more than two smoke detectors of an approved, supervised automatic fire detection system installed in accordance with Section 7-6, and

(b) The doors unlock upon loss of power controlling the lock or locking mechanism, and

(c) Reentry is not permitted from the egress side of the building provided that:

(i) On the door adjacent to the release device, there is a readily visible, durable sign in letters at least 1 in. (25 mm) high on a contrasting background that reads: "PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS."

(ii) Reentry is not permitted from the egress side of the building provided that:

(E) Emergency lighting in accordance with Section 5-9 shall be permitted to be installed in accordance with Section 5-9.

(a) A sensor shall be provided on the egress side to detect an occupant approaching the doors; and the doors shall be arranged to unlock upon detection of approaching occupant or loss of power to the sensor, and

(b) Loss of power to that part of the access control system that locks the doors shall automatically unlock the doors, and

(c) The doors shall be arranged to unlock from a manual release device located not more than 60 in. (152 cm) in height above the finished floor. The manual release device shall be readily accessible and clearly identified by a sign that reads "Push to Exit." When operated, the manual release device shall be effective in direct interruption of power to the lock - independent of the access control system electronics - and the doors shall remain unlocked for a minimum of at least 30 seconds.
remain unlocked until the fire-protective signaling system has been manually reset, and

(c) Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire-protective signaling system has been manually reset.

5-2.1.7 Panic Hardware and Fire Exit Hardware.

5-2.1.7.1 Panic hardware and fire exit hardware consist of a door-latching assembly incorporating a device that releases the latch upon application of a force in the direction of egress travel. Fire exit hardware additionally provides fire protection where used as part of a fire door assembly.

5-2.1.7.2 Where a door is required to be equipped with panic hardware or fire exit hardware by any other provision of the Code, such releasing device shall:

(a) Consist of bars or panels, the actuating portion of which shall extend across more than one third of the width of the door leaf, measured at 90 in. (23 cm) above the floor, and

(b) Cause the door latch to release when a force that shall not be less than 15 lbf (67 N) is applied.

5-2.1.7.4 Required panic hardware and fire exit hardware shall not be equipped with any operating device or set screw. Under all conditions, there shall be a dispersal area acceptable to the authority having jurisdiction, with the doors and the releasing device, and

Exception No. 1: As defined in 5-2.1.4.4 shall not be required where approved panic hardware shall provide an aggregate width of 36 in. (91 cm), and

Exception No. 2 to (a): Existing panic hardware where approved by the authority having jurisdiction.

5-2.1.8 Self-Closing Devices. A door designed to normally be kept closed in a means of egress, such as a door to a stair enclosure or horizontal exit [move to appendix] shall be a self-closing door and shall not be secured in the open position at any time.

[New appendix item:]

A-5-2.1.8 Examples of doors designed to normally be kept closed include those to a stair enclosure or horizontal exit.

Exception: In any building of low or ordinary hazard contents, as defined in 4-2.2.2 and 4-2.2.3, or where permitted by the authority having jurisdiction, doors shall be permitted to be automatic-closing provided:

(a) Upon release of the hold-open mechanism, the door becomes self-closing.

(b) The release device is designed so that the door can be instantly released manually and upon release become self-closing, or the door can be closed by some simple or readily obvious operation; and

(c) The automatic releasing mechanism or medium is activated by (1) the operation of an approved, automatic smoke detection system installed in accordance with Section 7-6 to protect the entire building, design or building, or (2) the release of approved smoke detectors installed in such a way as to detect smoke on either side of the door opening, as detailed in NFPA 72, National Fire Alarm Code. The above systems shall be permitted to be zoned as where approved by the authority having jurisdiction; and

(d) Any fire detection system or smoke detector is provided with such supervision and safeguards as are necessary to ensure reliability of operation in case of fire (see also Section 7-6); and

(e) Upon loss of power to the hold-open device, the hold-open mechanism is designed so that the door shall be designed so that when a force is applied to the door on the side from which egress is made, it shall be capable of swinging from any position to the full use of the required width of the opening in which it is installed. (See 5-2.1.1.7 and 5-2.1.1.9)

A-5-2.1.9 An example of the type of door addressed by 5-2.1.9 is one actuated by a motion sensing device upon the approach of a person.

Exception No. 1: Sliding, power-operated doors in exit access serving an occupant load of fewer than 50 that are manually opened in the direction of door travel with forces not exceeding the maximum specified required in 5-2.1.4.4 shall not be required to have a swing-out feature.

Exception No. 2: In the emergency break-out mode, a door leaf located within a two-leaved opening shall be exempted from the minimum 32 in. (81 cm) single-leaf requirement of 5-2.1.3 if the minimum 32 in. (81 cm) clear width provided by the single leaf provided the clear width of the single leaf is at least 50 in. (127 cm).

Exception No. 3: Doors complying with 5-2.1.14.

Exception No. 4: In detection and automatic occupancy, provided in Chapters 14 and 15.

5-2.1.10 Revolving Doors.

5-2.1.10.1 Revolving doors shall comply with the following:

(a) Revolving doors shall be capable of being collapsed into a book-fold position, and

Exception to (a): Existing revolving doors where approved by the authority having jurisdiction.

(b) When in the book-fold position, the parallel egress paths formed shall provide an aggregate width of 36 in. (91 cm), and

Exception to (b): Existing revolving doors where approved by the authority having jurisdiction.

(c) Revolving doors shall not be used within 10 ft (3 m) of the foot of each stair or set of stairs, except that, where approved, the revolving doors shall be permitted to be automatic-closing provided:

(d) The revolutions per minute (rpm) of revolving doors shall not exceed the following, and:

<table>
<thead>
<tr>
<th>Inside Diameter</th>
<th>Power-driven Type Speed Control (rpm)</th>
<th>Manual-type Speed Control (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 ft 6 in. (2 m)</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7 ft 0 in. (2.1 m)</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>7 ft 6 in. (2.3 m)</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>8 ft 0 in. (2.4 m)</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>8 ft 6 in. (2.5 m)</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>8 ft 12 in. (2.7 m)</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9 ft 0 in. (2.7 m)</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9 ft 6 in. (2.4 m)</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>10 ft 0 in. (3.0 m)</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

(e) Each revolving door shall have a conforming side-hinged swinging door in the same wall as the revolving door and within 10 ft (3 m) of the revolving door.

Exception No. 1 to (e): Revolving doors shall be permitted without adjacent swinging doors for street floor elevator lobbies provided no stairways or doors from other parts of the building discharge through the lobby and the lobby has no occupancy other than as a means of travel between elevator and street.

Exception No. 2 to (e): Existing revolving doors where the number of revolving doors does not exceed the number of swinging doors within 20 ft (6.1 m).

5-2.1.10.2 Where permitted by Chapters 8 through 29, revolving doors shall be permitted as a component in a means of egress provided under the following conditions:

(a) Revolving doors shall not be given credit for more than 50 percent of the required egress capacity, and

(b) Each revolving door shall be credited with 50 percent of the persons capacity, and

Exception to (b): Revolving doors with a least minimum 9 ft (2.7 m) diameter shall be permitted egress capacity based on the clear opening width provided.

(c) Revolving doors shall be capable of being collapsed into a book-fold position when a force that shall not be exceed more than 130 lbf (578 N) is applied to wings within 3 in. (7.6 cm) of the outer edge.

5-2.1.10.3 Revolving doors not used as a component of a means of egress shall have a collapsing force of not more than 180 lbf (800 N). Exception to (b): Revolving doors with a least minimum 9 ft (2.7 m) diameter shall be permitted egress capacity based on the clear opening width provided.

(c) Revolving doors shall be capable of being collapsed into a book-fold position when a force that shall not be exceed more than 130 lbf (578 N) when:

(a) There is a power failure or power is removed to the device holding the wings in position, and

(b) There is an actuation of the automatic sprinkler system where such system is provided, and

(c) There is actuation of a smoke detection system that is installed to provide coverage in all areas within the building that are within 75 ft (23 m) of the revolving doors, and
(d) There is the actuation of a clearly identified manual control switch in an approved location that reduces the holding force to below the not more than 130 lbf (578 N) level. Such switch shall be in an approved location and shall be clearly identified.

5-2.1.11 Turnstiles.

5-2.1.11.1 Note: Turnstiles or similar devices to which restrict travel to only one direction or to collect fares or admission charges shall be placed so as to obstruct any required means of egress.

Exception No. 1: Approved turnstiles not over more than 39 in. (99 cm) high that turn freely in the direction of egress travel shall be permitted in any occupancy where revolving doors are permitted by Chapters 8 through 25.

Exception No. 2: Where turnstiles are permitted approved by the authority having jurisdiction and permitted in Chapters 8 through 25, turnstiles shall be permitted to be used for egress and each turnstile shall be credited for 50 persons capacity provided such turnstiles:

(a) Freewheel in the egress direction when primary power is lost, and freewheel in the direction of egress travel upon the manual release by an employee assigned in the area, and

(b) Shall not be given credit for more than 50 percent of the required egress width, and

(c) Shall not be over more than 39 in. (99 cm) high nor have a clear width less than of at least 16 1/2 in. (41.9 cm).

5-2.1.11.2 Turnstiles over more than 39 in. (99 cm) high shall be subject to meet the requirements for revolving doors.

5-2.1.11.3 Turnstiles in or furnishing access to required exits shall provide at least 16 1/2 in. (41.9 cm) clear width at and below a height of 39 in. (99 cm) and at least 22 in. (55.9 cm) clear width at heights above 39 in. (99 cm).

5-2.1.12 Doors in Folding Partitions. Where permanently mounted fixed or movable partitions are arranged to divide a room into smaller spaces, a swinging door or open doorway shall be provided as an exit access from each such space.

Exception No. 1: Under the following conditions. A swinging door shall not be required, and the partition shall be permitted to be enclosed the space completely provided:

(a) The subdivided space shall not be used by more than 20 persons at any time, and

(b) The use of the space shall be under adult supervision, and

(c) The partitions shall be arranged so that they do not extend across any aisle or corridor used as an exit access to the required egress from the floor story, and

(d) The partitions shall conform to the interior finish and other applicable requirements of this Code, and

(e) The partitions shall be of an approved type, shall have a simple method of release, and shall be capable of being opened quickly and easily by experienced persons in case of emergency.

Exception No. 2: Where a subdivided space is provided with at least two means of egress, the swinging door in the folding partition shall not be required, and one such means of egress shall be permitted to be supplied with a horizontal sliding door complying with 5-2.1.14.

5-2.1.15 Balanced Doors. If panic hardware is installed on balanced doors, the panic hardware shall be of the push-pad type, and the pad shall not extend more than approximately one half the width of the door measured from the latch side.

5-2.1.14 Horizontal Sliding Doors. Horizontal sliding doors complying with the following shall be permitted in means of egress provided:

(a) The door shall be operable by a simple method from either side without special knowledge or effort, and

(b) The force, applied to the operating device in the direction of egress, required to operate the door shall not exceed more than 15 lbf (67 N), and

(c) The force required to operate the door in the direction of door travel shall not exceed more than 30 lbf (135 N) to set the door in motion and 15 lbf (67 N) to close the door or open it to the minimum required width, and

(d) The door shall be operable with a force not exceeding more than 50 lbf (222 N) when a force of 250 lbf (1,110 N) is applied perpendicularly to the door adjacent to the operating device, and

Exception to (d): Horizontal sliding exit access doors serving an area having an occupant load of fewer than 50.

(e) The door assembly shall comply with the applicable fire protection rating and, where rated, shall be self-closing or automatically closable during fire. Smoke detection in accordance with 5-2.1.8, and shall be installed in accordance with NFPA 80, Standard for Fire Doors and Fire Windows.

5-2.2 Stairs.

5-2.2.1 General. Stairs, either interior or exterior, used as a component in the means of egress shall conform to the general requirements of Section 5-1 and to the special requirements of this subsection.

Exception No. 1: Aisle steps in assembly occupancies as provided in Chapters 8 and 9.

Exception No. 2: Existing non complying stairs where approved by shall be permitted to continue to be used subject to the approval of the authority having jurisdiction.

5-2.2.2 Stairways. Dimensional Criteria [from 5-2.2.2.1]

Stairs shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Class A</th>
<th>Class B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum width clear of all</td>
<td>44 in. (112 cm)</td>
</tr>
<tr>
<td>obstructions, except projections</td>
<td>36 in. (91 cm), where total occupant load of all</td>
</tr>
<tr>
<td>not exceeding more than 3 1/2 in. (8.9 cm) at or below handrail height on each side</td>
<td>is fewer than 50</td>
</tr>
<tr>
<td>Maximum height of risers</td>
<td>7 in. (17.8 cm)</td>
</tr>
<tr>
<td>Minimum headroom</td>
<td>6 ft 8 in. (203 cm)</td>
</tr>
<tr>
<td>Maximum height between landings</td>
<td>12 ft (3.7 m)</td>
</tr>
<tr>
<td>Landing</td>
<td>(See 5-2.1.3.3 and 5-2.1.4.5)</td>
</tr>
</tbody>
</table>

Exception*: Existing stairs in existing buildings shall be permitted to remain in use if provided they meet the requirements for existing stairs shown in the table for existing stairs. Subject to approved Where approved by the authority having jurisdiction, existing stairs shall be permitted to be rebuilt in accordance with the table's dimensional criteria for existing stairs and in accordance with other Code requirements in 5-2.2 for stairs.

5-2.2.3 General. Stairways shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Class A</th>
<th>Class B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum width clear of all obstructions, except projections</td>
<td>44 in. (112 cm)</td>
</tr>
<tr>
<td>not exceeding more than 3 1/2 in. (8.9 cm) at or below handrail height on each side</td>
<td>36 in. (91 cm), where total occupant load of all stories served by stairways is fewer than 50</td>
</tr>
<tr>
<td>Maximum height of risers</td>
<td>7 1/2 in. (19.1 cm)</td>
</tr>
<tr>
<td>Minimum tread depth</td>
<td>10 in. (25.4 cm)</td>
</tr>
<tr>
<td>Minimum headroom</td>
<td>6 1/8 in. (152 cm)</td>
</tr>
<tr>
<td>Maximum height between landings</td>
<td>12 ft (3.7 m)</td>
</tr>
<tr>
<td>Landing</td>
<td>(See 5-2.1.3.3 and 5-2.1.4.5)</td>
</tr>
</tbody>
</table>

Exception*: Existing stairs in existing buildings shall be permitted to remain in use if provided they meet the requirements for existing stairs shown in the table for existing stairs. Subject to approved Where approved by the authority having jurisdiction, existing stairs shall be permitted to be rebuilt in accordance with the table's dimensional criteria for existing stairs and in accordance with other Code requirements in 5-2.2 for stairs.

5-2.2.4 Tread Slope. Tread slope shall not exceed more than 1/4 in./ft (2.1 cm/m) (a slope of 1:34) [move to 5-2.2.3.4]

5-2.2.5 Riser Height and Tread Depth. Riser height shall be measured horizontally between the vertical planes of the front projection of adjacent treads and a right angle to the tread's leading edge, but shall not include beveled or rounded tread nosings. Riser height shall not be more than 4 in. (102 mm). Tread depth shall be measured horizontally between the vertical planes of the front projection of adjacent treads and a right angle to the tread's leading edge, and the tolerance between the largest and smallest tread shall not exceed more than 3/4 in. (19 mm) in any flight [move to 5-2.2.3.5]...

Exception*: There shall be no variation exceeding more than 5/16 in. (8 mm) in the depth of adjacent treads measured at the height of the risers, and the tolerance between the largest and smallest tread shall not exceed more than 1/2 in (12 mm) in horizontal dimension [move to 5-2.2.3.5]

Exception*: Existing stairs in existing buildings shall be permitted to remain in use if provided they meet the requirements for existing stairs shown in the table for existing stairs. Subject to approved Where approved by the authority having jurisdiction, existing stairs shall be permitted to be rebuilt in accordance with the table's dimensional criteria for existing stairs and in accordance with other Code requirements in 5-2.2 for stairs.

5-2.2.6.1 Tread Slope. Tread slope shall not exceed more than 1/4 in./ft (2.1 cm/m) (a slope of 1:34) [move to 5-2.2.3.4]

5-2.2.6.2 Riser Height and Tread Depth. Riser height shall be measured horizontally between the vertical planes of the front projection of adjacent treads and a right angle to the tread's leading edge, but shall not include beveled or rounded tread nosings. Riser height shall not be more than 4 in. (102 mm). Tread depth shall be measured horizontally between the vertical planes of the front projection of adjacent treads and a right angle to the tread's leading edge, and the tolerance between the largest and smallest tread shall not exceed more than 3/4 in. (19 mm) in any flight [move to 5-2.2.3.5]...

Exception*: There shall be no variation exceeding more than 5/16 in. (8 mm) in the depth of adjacent treads measured at the height of the risers, and the tolerance between the largest and smallest tread shall not exceed more than 1/2 in (12 mm) in horizontal dimension [move to 5-2.2.3.5]

Exception*: Existing stairs in existing buildings shall be permitted to remain in use if provided they meet the requirements for existing stairs shown in the table for existing stairs. Subject to approved Where approved by the authority having jurisdiction, existing stairs shall be permitted to be rebuilt in accordance with the table's dimensional criteria for existing stairs and in accordance with other Code requirements in 5-2.2 for stairs.
compliance with all the requirements for stairs are not [move to 5-2.2.7.1].

5-2.2.5 Curved Stairs. Curved stairs shall be permitted as a component in a means of egress provided the minimum depth of tread is 11 in. (27.9 cm) at a point 12 in. (30.5 cm) from the narrower end of the tread, and the smallest radius is not less than twice the stair width.

Exception: Existing curved stairs shall be permitted to be continued in use provided the minimum depth of tread is 10 in. (25.4 cm) and the smallest radius is not less than twice the stair width.

5-2.2.6 Spiral Stairs. Where specifically permitted for individual occupancies by Chapters 8 through 29, spiral stairs shall be permitted as a component in a means of egress provided: [move to 5-2.2.7.3]

(a) The occupant load served shall not exceed 5, and
(b) The clear width of the stairs shall not be less than 36 in. (91 cm); and
(c) The height of risers shall not exceed 7 1/2 in. (27.5 cm); and
(d) Treads shall have a minimum depth of 7 1/2 in. (19.1 cm) at a point 12 in. (30.5 cm) from the narrower edge, and
(e) All treads shall be identified by round nosings. Where specifically permitted for individual occupancies by Chapters 8 through 29, spiral stairs shall be permitted as a component in a means of egress provided: [move to 5-2.2.7.3]

5-2.2.3.1 Construction.

(a) All stairs serving as required means of egress shall be of permanent fixed construction.

Exception: Stairs in assembly occupancies serving seating that is designed to be repositioned in accordance with Chapters 8, and 9.

5-2.2.3.2 Slip Resistance. Stair and landing floor treads shall be solid, uniformly slip resistant and free of projections.

5-2.2.3.3 Handrails.

(a) Handrails on stairs shall be at least 34 in. (86 cm) high from the surface of the tread, measured vertically to the top of the rail from the leading edge of the tread.

Exception No. 1 to (a). The height of required handrails that form part of a guard shall be permitted to be no more than 42 in. (107 cm) measured vertically to the top of the guard from the leading edge of the tread.

Exception No. 2 to (a). Existing required handrails shall be permitted to be not less than 30 in. (76 cm) measured vertically to the top of the guard from the leading edge of the tread.

(b) New handrails shall provide a clearance of at least 1 1/2 in. (3.8 cm) above the upper surface of the tread.

Exception No. 3 to (a). Additional handrails that are lower or higher than the main handrail shall be permitted.

5-2.2.3.4 Tread Slope. Tread slope shall not exceed 1/4 in./ft (2.1 cm/m) (a slope of 1 in 48).

5-2.2.3.5 Riser Height and Tread Depth. Riser height shall be measured as the vertical distance between tread nosings. Tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge, but shall not include beveled or rounded tread surfaces that slope more than 20 degrees (a slope of 1 in 200). At tread nosings, such beveling or rounding shall not exceed 1/2 in. (1.3 cm) in horizontal dimension.

5-2.2.3.6 Dimensional Uniformity. There shall be no variation exceeding more than 3/16 in. (0.5 cm) in the depth of adjacent treads or in the height of adjacent risers, and the tolerance between the largest and smallest riser or between the largest and smallest tread shall not exceed 5/8 in. (1.0 cm) in any flight.

Exception: Where the bottom riser adjoins a sloping public way, walk, or driveway having an established grade and serving as a landing, a variation in height of the bottom riser of not more than 3 in. (7.6 cm) in every 8 ft (96 in.) of stairway width shall be permitted.
Exception No. 1 to (b): Existing guards within dwelling units shall not be less than at least 36 in. (91 cm) high.

Exception No. 2 to (b): Exception No. 1 to (b) does not apply to assembly occupancies as provided in Chapters 8, and 19. (a) Open guards shall have intermediate rails or an ornamental pattern such that a sphere 4 in. (10.1 cm) in diameter cannot pass through any opening.

Exception No. 1 to (c): The triangular openings formed by the riser, tread, and bottom element of a guardrail at the open side of a stair shall be of such size that a sphere 6 in. (15.2 cm) in diameter shall not pass through the triangular opening.

Exception No. 2 to (c): In detention and correctional occupancies, in industrial occupancies, and in storage occupancies, the clear distance between intermediate rails measured at right angles to the rails shall not exceed be more than 21 in. (53.3 cm).

Exception No. 3 to (c): Approved existing open guards.

5-2.2.5.4 Special Provisions for Outside Stairs: Enclosure and Protection of Stairs [move from 5-2.2.6]

Protection of Openings All openings below an outside stair shall be protected with an assembly having a 1/2-hour fire protection rating unless otherwise required for the construction.

Exception No. 1 to (c): The triangular openings formed by the riser, tread, and bottom element of a guardrail at the open side of a stair shall be of such size that a sphere 6 in. (15.2 cm) in diameter shall not pass through the triangular opening. This construction shall extend vertically from the ground to a point 10 ft (3 m) above the topmost landing of the stairs or to the roofline, whichever is lower.

Exception: Existing stairways.

5-2.2.6.4 Separation and Protection of Outside Stairs. Outside stairs shall be separated from the interior of the building by walls. The fire resistance rating required for enclosed stairs with fixed or self-closing opening protectives. This construction shall extend vertically from the ground to a point 10 ft (3 m) above the topmost landing of the stairs or to the roofline, whichever is lower, and at least 10 ft (3 m) horizontally.

Exception No. 1: Outside stairs serving an exterior exit access balcony that has two remote outside stairways or ramps.

Exception No. 2: Outside stairs serving not more than two adjacent stories, including the story of exit discharge, shall be permitted to be unprotected where there is a remotely located second exit.

Exception No. 3: In existing buildings, outside stairs serving not more than three adjacent stories, including the story of exit discharge, shall be permitted to be unprotected where there is a remotely located second exit.

Exception No. 4: The fire resistance rating of the portion of the separation extending 10 ft (3 m) from the stairs need not exceed the rating of the stair enclosure, but need not have greater than a 1/2-hour fire resistance rating with 15-minute fire protection rated opening protectives. This construction shall extend vertically from the ground to a point 10 ft (3 m) above the topmost landing of the stairs or to the roofline, whichever is lower.

(a) Where located in a court, the smallest dimension of which is less not more than one third its height, or

(b) Where located in an alley having a width less not more than one third its height and a depth greater than more than one fourth its height.

5-2.2.6.5 There shall be no enclosed, usable space within an exit enclosure, including under stairs, or any open space within a stair enclosure, unless the separation between the stair and the enclosure is protected by having a 2-hour fire protection rated assembly.

5-2.2.6.6 Protection of Enclosures. All enclosures below an outside stair shall be protected with an assembly having a 3/4-hour fire protection rating in accordance with Chapters 8, and 9.

5-2.2.7 Types of Stairs. [from 5-2.2.2]

Exception: Existing curved stairs shall be permitted to be...

5-2.2.7.3 Curved Stairs. Curved stairs shall be permitted as a component in a means of egress if in compliance with where all the requirements for stairs are met.

5-2.2.7.2.1 Monumental Stairs. Monumental stairs, either inside or outside, shall be permitted as a component in a means of egress if in compliance with where all the requirements for stairs are met.

(b) The clear width of the stairs shall be not more than 28 in. (71 cm), and

(c) The height of risers shall not exceed 1/2 in. (12.7 cm), and

(d) Headroom shall be not more than 7 ft 6 in. (228 cm), and

5-2.2.7.1.4 Winders. When winder stairs are exposed by parts of the building at an angle of less than 120 degrees, the building enclosure walls shall be required as required for stairway enclosures extending from the floor of exit discharge to the roof or to the top of the building, whichever is lower.

(b) The enclosure walls within 10 ft (3 m) horizontally of the nonrated wall or unprotected opening shall be constructed as required for stairway enclosures, including opening protectives. This construction shall extend vertically from the ground to a point 10 ft (3 m) above the topmost landing of the stairs or to the roofline, whichever is lower, and at least 10 ft (3 m) horizontally.

5-2.2.7.1.4 Winders. Where specifically permitted for individual occupancies by Chapters 8 through 29, winder stairs shall be permitted as a component in a means of egress provided:

(a) The occupant load served shall not exceed 5, and

(b) The clear width of the stairs shall be not more than 28 in. (71 cm), and

(c) The height of risers shall not exceed 1/2 in. (12.7 cm), and

(d) Headroom shall be not more than 7 ft 6 in. (228 cm), and

(e) Treads shall have a minimum depth of 7 in. (17.8 cm) at a point 12 in. (30.5 cm) from the narrower end of the tread, and the smallest radius is twice the stair width.

Exception: Existing curved stairs shall be permitted to be...

5-2.2.7.2.7.2 Curved Stairs. Curved stairs shall be permitted as a component in a means of egress if in compliance with with all the requirements for stairs are met.

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(b) The clear width of the stairs shall be not more than 28 in. (71 cm), and

(c) The height of risers shall not exceed 1/2 in. (12.7 cm), and

(d) Headroom shall be not more than 7 ft 6 in. (228 cm), and

(e) Treads shall have a minimum depth of 7 in. (17.8 cm) at a point 12 in. (30.5 cm) from the narrower edge, and

(f) All treads shall be identical.

5-2.2.7.2.7.2 Curved Stairs. Curved stairs shall be permitted as a component in a means of egress if in compliance with with all the requirements for stairs are met.

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(b) The clear width of the stairs shall be not more than 28 in. (71 cm), and

(c) The height of risers shall not exceed 1/2 in. (12.7 cm), and

(d) Headroom shall be not more than 7 ft 6 in. (228 cm), and

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5-2.3 Smokeproof Enclosures. 5-2.3.1 General. Where smokeproof enclosures are required by other sections of this Code, they shall comply with 5-2.3.2. 5-2.3.2 Performance Design. The appropriate design method shall be any system that meets the performance level specified in 5-2.4.6.3 definition of smokeproof enclosure. The smokeproof enclosure shall be permitted to be created by using natural ventilation, by using mechanical ventilation incorporating a vestibule, or by pressurizing the stair enclosure.

5-2.3.3 Enclosure. A smokeproof enclosure shall consist of an exterior fire barrier having a 2-hour fire resistance rating, with not less than one half of the enclosure area from a point not less than 6 in. (15.2 cm) down from the top of the enclosure. The stairway, lobby, or court in the smokeproof enclosure shall be separated from all other areas of the building by smoke barriers having 2-hour fire resistance ratings. The stair shall be provided with an approved dampered relief opening at least 20 in. (50.8 cm) higher than the floor opening in the vestibule. The height shall be permitted to be decreased where justified by engineering design and field testing.

5-2.3.4 Vestibule. Where vestibule is provided, the stairway shall be directly connected to the building by a 2-hour fire resisting construction or by a 2-hour fire resisting construction of at least half that required by 5-2.4.2. The stairway shall be permitted to be connected to the building by any one of the following procedures: (a) Exterior to the building and shall be directly connected to the stairway by ductwork enclosed in noncombustible construction, (b) Within the stairway enclosure with intake and exhaust air directly to the outside through ductwork enclosed in a 2-hour fire resisting construction, or (c) Within the building if separated from the remainder of the building, including other mechanical equipment, with a 1-hour fire resisting construction.

5-2.3.5 Discharge. Every smokeproof enclosure shall discharge into a public way, into a yard or court having direct access to a public way, or into an exit passageway. Such exit passageways shall be without openings other than the entrance from the smokeproof enclosure and the exit door to the outside way or public way. The exit passageway shall be separated from the remainder of the building by fire barriers having a 2-hour fire resistance ratings.

5-2.3.6 Access. Access to the stair shall be by way of a vestibule or by way of an exit passageway.

Exception: Smokeproof enclosures consisting of a pressurized stair enclosure complying with 5-2.3.9.

5-2.3.7 Natural Ventilation. Smokeproof enclosures using natural ventilation shall comply with 5-2.5.4. and the following:

(a) Where a vestibule is provided, the doorway into the vestibule shall be protected with an approved vestibule having a 1/2-hour fire protection rating, and the fire door assembly from the vestibule to the stair shall have a 1/2-hour fire protection rating. Doors shall be designed to minimize air leakage and shall be self-closing or shall be automatic-closing by actuation of a smoke detector within 10 ft (3 m) of the vestibule door.

(b) Every vestibule shall have a minimum net area of 16 sq. ft (1.5 sq. m) of opening in an exterior wall facing an exterior court, yard, or other space at least 20 ft (6.1 m) in width, and shall be so located:

(c) The door assembly from the building into the vestibule shall have a 1/2-hour fire protection rating, and the door assembly from the vestibule to the stairway shall have a 1/2-hour fire protection rating. The door to the stairway shall be designed and installed to minimize air leakage. The doors shall be self-closing or shall be automatic-closing by actuation of a smoke detector located within the vestibule.

5-2.3.8 Mechanical Ventilation. Smokeproof enclosures by mechanical ventilation shall comply with 5-2.5.4. and the following:

(a) Vestibules shall have a minimum dimension not less than at least the width of the corridor leading to it and a minimum dimension of 72 in. (183 cm) in the direction of travel.

(b) The stairway shall be protected with an approved vestibule having a 1/2-hour fire protection rating, and the stairway shall be self-closing or shall be automatic-closing by actuation of a smoke detector located within the stairway.

5-2.3.9 Stair Pressurization. 5-2.3.9.1 Smokeproof enclosures by stair pressurization shall utilize an approved engineered system with a minimum design pressure difference across the barrier of 0.05 in. water column (12.5 Pa) in sprinklered buildings or 0.10 in. water column (25 Pa) in non-sprinklered buildings, and shall be capable of maintaining these pressure differences under likely conditions of stack effect or wind. The pressure difference across doors shall not exceed more than that which will permit the door to begin to be opened by a force of 30 lb (133 N) as required in accordance with 5-2.1.4.4.

5-2.3.9.2 Equipment and ductwork for stair pressurization shall be located in a vestibule or on a horizontal exit, as the case may be.

In each case, openings into the required 2-hour construction shall be limited to those needed for maintenance and operation and shall be protected by self-closing 1 1/2-hour fire protection rated devices. The pressure differences under likely conditions of stack effect or wind shall not exceed more than that which will permit the door to begin to be opened by a force of 30 lb (133 N) as required in accordance with 5-2.1.4.4.

Exception to (c): Where the building, including the stairway enclosure, is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7.10, the design pressure shall be reduced to a minimum of at least 1-hour construction.

In each case, openings into the required 2-hour construction fire resistance rating shall be limited to those needed for maintenance and operation and shall be protected by self-closing 1 1/2-hour fire protection rated devices.

5-2.5.10 Activation of Mechanical Ventilation Systems. 5-2.5.10.1 For both mechanical ventilation and pressurized stair enclosures, the activation of the systems shall be initiated by a smoke detector installed in an approved location within 10 ft (3 m) of the entrance to the smokeproof enclosure.

5-2.5.10.2 The required mechanical systems shall operate at the activation of the smoke detector in 5-2.3.10.1 and by manual controls accessible to the fire department. The required system shall be initiated by the following, if provided:

(a) A water flow signal from a complete automatic sprinkler system.

(b) General evacuation alarm signal.

5-2.5.11 Door Closers. The activation of an automatic closing device on any door in the smokeproof enclosure shall activate all other automatic closing devices on doors in the smokeproof enclosure.

5-2.5.12 Standby Power. Standby power for mechanical ventilation equipment shall be provided by an approved, self-contained generator set to operate whenever there is a loss of power in the normal house current. The generator shall be located in a separate room having a minimum fire resisting rating and shall be separated from the remainder of the building. The generator shall have a minimum fuel supply adequate to operate the equipment for two hours.

5-2.5.13 Testing. Before the mechanical equipment is accepted by the authority having jurisdiction, it shall be tested to confirm that the mechanical equipment is operating in compliance with these requirements.

5-2.6.1 Emergency Lighting. The stair and vestibule shall be provided with emergency lighting. A standby generator, that is installed for the smokeproof enclosure mechanical ventilation equipment, shall be permitted to be used for such stair and vestibule lighting. [move to 5-9.1.1]

5-2.4 Horizontal Exits.

5-2.4.1 Application General. Horizontal exits shall be permitted to be substituted for other exits in buildings that the total egress capacity of the other exits (stairs, ramps, doors leading outside the building) will not be reduced below at least that required
for the entire area of the building or connected buildings if provided no horizontal exits exist.

Exception: In health care occupancies as provided in Chapters 12, and 13, and in detention and correctional occupancies as provided in Chapters 14, and 15.

5-2.4.2 Fire Compartments.

5-2.4.2.1 Every fire compartment for which credit is allowed in connection with a horizontal exit shall have, in addition to the horizontal exit or exits, at least one stairway or doorway leading outside or other exit that is not a horizontal exit. Any fire compartment not having a stairway or doorway leading outside shall be considered as part of an adjoining compartment with stairway. Exception: In detention and correctional occupancies as provided in Chapters 14, and 15.

5-2.4.2.2 Every horizontal exit for which credit is given shall be arranged so that there are continuously available paths of travel leading from each side of the exit to stairways or other means of egress leading to the outside building.

5-2.4.2.3 Whenever either side of the horizontal exit is occupied, the doors used in connection with the horizontal exit shall be unlocked from the egress side.

Exception: In health care occupancies as provided in Chapters 12, and 13, and in detention and correctional occupancies as provided in Chapters 14, and 15.

5-2.4.2.4 The floor area on either side of a horizontal exit shall be sufficient to hold the occupants of both floor areas, allowing providing at least not more than 3 sq. ft. (0.28 sq. m) clear floor area per person.

Exception: Special floor area requirements in health care occupancies as provided in Chapters 12, and 13, and in detention and correctional occupancies as provided in Chapters 14, and 15.

5-2.4.3 Fire Barriers. Where:

5-2.4.3.1 Fire barriers separating buildings or areas between which there are horizontal exits shall be an assembly of noncombustible or limited combustible material having a 2-hour fire resistance rating, and shall provide a separation continuous to ground. (See also 6-2.5.)

Exception No. 1: Where a fire barrier is used to provide a horizontal exit in any story of a building, such fire barrier shall not be required on other stories under the following conditions:

(a) The stories on which the fire barrier is omitted shall be separated from the story with the horizontal exit by construction having a fire resistance rating at least equal to that of the horizontal exit fire barrier, and

(b) Vertical openings between the story with the horizontal exit and the open fire area story shall be enclosed with construction having a fire resistance rating at least equal to that of the horizontal exit fire barrier, and

(c) All required exits, other than horizontal exits, shall discharge directly to the outside.

5-2.4.3.2 Where fire barriers serving horizontal exits terminate at outside walls and the outside walls for a distance of 10 ft (3 m) on each side of the horizontal exit are at an angle of less than 180 degrees, the outside walls shall be have a 2-hour fire resistance rating fire barriers with 3/4-hour fire protection rating opening protectives for a distance of 10 ft (3 m) on each side of the horizontal exit.

Exception: Existing horizontal exits.

5-2.4.3.3 Fire barriers forming horizontal exits shall not be penetrated by ducts.

Exception No. 1: Existing penetrations protected by approved and listed fire dampers.

Exception No. 2: In buildings protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7.

Exception No. 3: Duct penetrations in detention and correctional occupancies as otherwise permitted in Chapters 14, and 15 that are protected by combination fire dampers/smoke leakage-rated dampers that meet the smoke damper actuation requirements of 6-3.5.

5-2.4.3.4 Any opening in such fire barriers, whether or not such openings serve as an exit shall be protected as provided in 6-2.5.5.

5-2.4.3.5 Doors in horizontal exits shall comply with 5-2.1.4.

Exception: Sliding doors in horizontal exits as provided in Chapters 28, and in storage occupancies as provided in Chapter 29.

5-2.4.3.6 Where: Swinging fire doors shall be permitted to be used in horizontal exits, these doors shall be the following provided:

(a) They shall swing in the direction of egress travel, and

(b) Where a horizontal exit serves areas on both sides of a fire barrier, these shall be adjacent openings with swinging doors, opening in opposite directions, with signs on each side of the fire barrier indicating the door that swings with the travel from that side, or

Exception to (b): Sleeping rooms in detention and correctional occupancies shall be exempt from the sign requirement.

(c) They shall be arry of any other approved arrangement provided that doors always swing with any possible egress travel.

Exception No. 1: Horizontally swinging door as provided in Chapters 13, and existing detention and correctional occupancies as provided in Chapters 14, and 15.

Exception No. 2: Horizontal exit doors in corridors less than 8 ft (152 cm) wide in existing buildings.

5-2.4.3.7* Doors in horizontal exits shall be designed and installed to minimize air leakage.

5-2.4.3.8* All fire doors in horizontal exits shall be self-closing or automatic-closing in accordance with 5-2.1.8. Horizontal exit doors located across a corridor shall be automatic-closing in accordance with 5-2.1.8.

Exception: Where approved by the authority having jurisdiction, existing doors in horizontal exits shall be permitted to be self-closing.

5-2.4.4 Bridges and Balconies.

5-2.4.4.1 Each bridge or balcony utilized in conjunction with horizontal exits shall have guards and handrails in conformity with the requirements of 5-2.2.

5-2.4.4.2 Every bridge or balcony shall be at least as wide as the door leading to it and not less than 44 in. (112 cm) wide for new construction.

5-2.4.4.3 Where the bridge or balcony serves as a horizontal exit in one direction, only the door need only leading from the bridge or balcony into the area of refuge need swing in the direction of egress travel.

Exception: Horizontal exit door swing in existing health care occupancies as provided in Chapters 13, and existing detention and correctional occupancies as provided in Chapter 15.

5-2.4.4.4 Where the bridge or balcony serves as a horizontal exit in both directions, doors shall be provided in pairs, swinging in opposite directions. Only the door swinging in the direction of the horizontal exit shall comply with the requirements of this section.

Exception No. 1: If the bridge or balcony has sufficient floor area to accommodate the occupant load of either connected building or fire area on the horizontal exit floor shall be permitted in accordance with Chapter 15.

Exception No. 2: In existing buildings, doors on both ends of the bridge or balcony shall be permitted to swing out from the building subject to the approval of where approved by the authority having jurisdiction.

Exception No. 3: Horizontal exit door swing in existing health care occupancies as provided in Chapters 13, and existing detention and correctional occupancies as provided in Chapter 15.

5-2.4.4.5 The bridge or balcony floor shall be approximately level with the building floor and, in climates subject to the accumulation of snow and ice, shall be protected to prevent the accumulation of snow and ice.

Exception: In existing buildings in climates where balconies are subject to the accumulation of snow or ice, one step, not to exceed more than 8 in. (20.3 cm), shall be permitted below the level of the inside floor.

5-2.4.4.6 All wall openings, in both of the connected buildings or fire areas, any part of which is within 10 ft (3 m) of any bridge or balcony as measured horizontally or vertically may be protected with fire doors or fixed fire window assemblies having a 3/4-hour fire protection rating.

Exception No. 1: Where bridges have solid sides not less than 6 ft (183 cm) in height, such protection of wall openings shall not be required.

Exception No. 2: Existing bridges and balconies subject to approval of where approved by the authority having jurisdiction.

5-2.5 Ramps.

5-2.5.1 General. Every ramp used as a component in a means of egress shall conform to the general requirements of Section 5-1 and to the special requirements of this subsection.

5-2.5.2 Dimensional Criteria. Ramps shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>New Ramps</th>
<th>Minimum width clear of all obstructions, except projections not exceeding more than 3 1/2 in. (8.9 cm) at or below handrail height on each side</th>
<th>44 in. (112 cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 Maximum slope</td>
<td>1 in 12 for &gt; 6 in. (&gt;15.2 cm) rise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 in 10 for &gt; 5 in. (&gt;12.7 cm) rise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 in 6 for &gt; 4 in. (&gt;10.2 cm) rise</td>
</tr>
<tr>
<td></td>
<td>Maximum cross slope</td>
<td>1 in 45</td>
</tr>
<tr>
<td></td>
<td>Maximum rise for a single ramp run</td>
<td>30 in. (76 cm)</td>
</tr>
</tbody>
</table>

24
Exception No. 1: Aisle ramps as permitted for assembly occupancies in Chapters 8 and 9.

Exception No. 2: Existing ramps shall be permitted to remain in use or be rebuilt if provided they meet the requirements shown in the table for existing ramps.

<table>
<thead>
<tr>
<th>Class</th>
<th>Minimum width</th>
<th>Maximum slope</th>
<th>Maximum height between landings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>44 in (122 cm)</td>
<td>1 in 10</td>
<td>12 ft (3.7 m)</td>
</tr>
</tbody>
</table>

Exception No. 3: Existing Class B ramps with slopes no steeper than 1 in 6 shall be permitted to remain in use subject to the approval of the authority having jurisdiction.

Exception No. 4: Existing ramps with slopes no steeper than 1 in 10 need not be provided with landings.

5-2.5.3 Ramp Construction.

(a) All ramps serving as required means of egress shall be of permanent fixed construction.

(b) A ramp used as a means of egress in a building more than three stories in height, or in a building of any height of noncombustible or fire-resistive construction, shall be constructed of an assembly of noncombustible or limited-combustible material.

(c) The ramp floor and landings shall be solid and without perforations.

5-2.5.3.1 Construction.

(a) Ramps shall have landings at the top, bottom, and at doors opening onto the ramp. The slope of the landing shall not be steeper than 1 in 16. Every landing shall have a dimension measured in the direction of travel not less than 4 ft (122 cm) width of the ramp. Each dimension need not exceed 4 ft (122 cm) provided the ramp has a straight run.

(b) Any changes in travel direction shall only be made at landings. Ramps and intermediate landings shall continue with no decrease in width along the direction of egress travel.

5-2.5.3.3 Slip Resistance. A ramp shall have a slip-resistant surface.

5-2.5.3.4 Drop-Offs. Ramps and landings having drop-offs shall have curbs, walls, railings, or projecting surfaces that prevent people from traveling off the edge of the ramp. Curbs or barriers shall be at least 4 in. (10.1 cm) in height.

5-2.5.3.5 All ramps serving as required means of egress shall be of permanent fixed construction.

5-2.5.3.6 A ramp used as a means of egress in a building more than three stories in height, or in a building of any height of noncombustible or fire-resistive construction, shall be constructed of an assembly of noncombustible or limited-combustible material.

5-2.5.3.7 The ramp floor and landings shall be solid and without perforations.

5-2.5.3.8 Landings.

5-2.5.3.9 Any changes in travel direction shall only be made at landings. Ramps shall continue with no decrease in width along the direction of egress travel.

5-2.5.3.10 (b) Below. If within three stories or 35 ft (10 m) of any balcony, platform, or stairway, shall be protected with approved fire doors or fire window assemblies.

5-2.5.4 Guards and Handrails. Guards complying with 5-2.2.4 shall be provided for ramps. Handrails complying with 5-2.2.4 shall be provided along both sides of a ramp segment steeper than 1 in 80. The height of handrails and guards shall be measured vertically to the top of the guard or rail from the walking surface adjacent thereto.

5-2.5.5 Special Provisions for Outside Ramps. Enclosure and Protection of Ramps.

5-2.5.5.1 Fire escape stairs shall comply with the provisions of 5-2.8.3.1. New fire escape stairs for existing buildings shall be constructed of the same material and construction as permitted in 5-2.2.4.1 and 5-2.2.4.2.

5-2.5.5.2 New fire escape stairs for existing buildings shall be constructed of the same material and construction as permitted in 5-2.2.4.1 and 5-2.2.4.2.

5-2.5.5.3 Special Provisions for Outside Ramps and landings shall be designed to prevent water from accumulating on their surfaces.

5-2.5.6.1 Fire escape stairs shall be provided with automatic sprinkler systems in accordance with Section 25-2.6.1.

5-2.5.6.2 General. Ramps shall be of solid construction and shall not be required to be aggregated. (See 5-2.3.2.)

5-2.5.6.3 Exceptions. Ramps shall be permitted to be installed in such a separation in a building protected throughout by an approved automatic sprinkler system in accordance with 5-2.6.1.3.

5-2.5.6.4 Protection of Ramps. Ramps in a required means of egress shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.5.6.5 Egress Stairway. Ramps shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.5.7 Escalators and Moving Walks. Escalators and moving walks shall not constitute a part of the required means of egress.

Exception: Previously approved escalators and moving walks in existing buildings.

5-2.8 Fire Escape Stairs.

5-2.8.1 General.

5-2.8.1.1 Fire escape stairs shall comply with the provisions of 5-2.8.3.1. New fire escape stairs for existing buildings shall be constructed of the same material and construction as permitted in 5-2.2.4.1 and 5-2.2.4.2.

5-2.8.1.2 Existing noncomplying fire escape stairs shall be required to be used subject to the approval of the authority having jurisdiction.

5-2.8.1.3 New fire escape stairs for existing buildings shall be required to be used subject to the approval of the authority having jurisdiction.

5-2.8.1.4 Existing noncomplying fire escape stairs shall be required to be used subject to the approval of the authority having jurisdiction.

5-2.8.1.5 New fire escape stairs shall be required to be used subject to the approval of the authority having jurisdiction.

5-2.8.1.6 Either type shall be permitted to be parallel to or at right angles to buildings. Either type shall be permitted to be attached to buildings or erected independently of buildings and connected by walkways.

5-2.8.2 Protection of Openings. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.1.1 General. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.1.2 Either type shall be permitted to be parallel to or at right angles to buildings. Either type shall be permitted to be attached to buildings or erected independently of buildings and connected by walkways.

5-2.9.2 Protection of Openings. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.2.1 General. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.2.2 Either type shall be permitted to be parallel to or at right angles to buildings. Either type shall be permitted to be attached to buildings or erected independently of buildings and connected by walkways.

5-2.9.3 Protection of Openings. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.3.1 General. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.3.2 Either type shall be permitted to be parallel to or at right angles to buildings. Either type shall be permitted to be attached to buildings or erected independently of buildings and connected by walkways.

5-2.9.4 Protection of Openings. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.4.1 General. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.4.2 Either type shall be permitted to be parallel to or at right angles to buildings. Either type shall be permitted to be attached to buildings or erected independently of buildings and connected by walkways.

5-2.9.5 Protection of Openings. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.5.1 General. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.5.2 Either type shall be permitted to be parallel to or at right angles to buildings. Either type shall be permitted to be attached to buildings or erected independently of buildings and connected by walkways.

5-2.9.6 Protection of Openings. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.6.1 General. Fire escape stairs shall be protected from the top of the guard or rail from the walking surface adjacent thereto.

5-2.9.6.2 Either type shall be permitted to be parallel to or at right angles to buildings. Either type shall be permitted to be attached to buildings or erected independently of buildings and connected by walkways.
### Table 5-2.8.4(a) Fire Escape Stairs

<table>
<thead>
<tr>
<th>Minimum widths</th>
<th>Serving More Than 10 Occupants</th>
<th>Serving 10 or Fewer Occupants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum horizontal dimension of any landing or platform</td>
<td>22 in. (55.9 cm) clear</td>
<td>18 in. (45.7 cm) clear</td>
</tr>
<tr>
<td>Maximum riser height</td>
<td>9 in. (22.9 cm)</td>
<td>12 in. (30.5 cm)</td>
</tr>
<tr>
<td>Minimum tread, exclusive of nosing</td>
<td>9 in. (22.9 cm)</td>
<td>6 in. (15.3 cm)</td>
</tr>
<tr>
<td>Minimum nosing or projection</td>
<td>1 in. (2.5 cm)</td>
<td>No requirement</td>
</tr>
<tr>
<td>Tread construction</td>
<td>Solid 1/2-in. (1.3-cm) dia. perforations permitted</td>
<td>Flat metal bars on edge or sq. Bars secured against turning, spaced 1 1/4 in. (3.2 cm) max. on centers</td>
</tr>
<tr>
<td>Winders</td>
<td>None</td>
<td>Permitted subject to capacity penalty</td>
</tr>
<tr>
<td>Risers</td>
<td>None</td>
<td>No requirement</td>
</tr>
<tr>
<td>Handrail height</td>
<td>42 in. (107 cm)</td>
<td>Same</td>
</tr>
<tr>
<td>Level of access opening</td>
<td>Door or casement windows 24 in. X 6 ft 6 in. (61 cm x 190 cm) or double hung windows 30 in. X 56 in. (76 cm x 91 cm) clear opening</td>
<td>Windows providing a clear opening of at least 20 in. (50.8 cm) in height, and 5.7 sq. ft (0.53 sq. m) in width, 24 in. (61 cm) in height, and 5.7 sq. ft (0.53 sq. m) in area</td>
</tr>
<tr>
<td>Discharge to ground</td>
<td>Swinging stair section permitted if approved by authority having jurisdiction</td>
<td>Swinging stair, or ladder if approved by authority having jurisdiction</td>
</tr>
<tr>
<td>Capacity, number of persons per 310; if winders or ladder form bottom balcony, 5; if both, 1</td>
<td>0.5 in. (1.3 cm) per person, if access by door; 1.0 in. (2.5 cm) per person if access by climbing over window sill</td>
<td>10</td>
</tr>
</tbody>
</table>

### Table 5-2.8.4(b) Replacement Fire Escape Stairs

<table>
<thead>
<tr>
<th>Minimum widths</th>
<th>Serving More Than 10 Occupants</th>
<th>Serving 10 or Fewer Occupants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum horizontal dimension of any landing or platform</td>
<td>22 in. (55.9 cm)</td>
<td>Same</td>
</tr>
<tr>
<td>Maximum riser height</td>
<td>9 in. (22.9 cm)</td>
<td>Same</td>
</tr>
<tr>
<td>Minimum tread, exclusive of nosing</td>
<td>10 in. (25.4 cm)</td>
<td>Same</td>
</tr>
<tr>
<td>Tread construction</td>
<td>Solid, 1/2-in. (1.3-cm) dia. perforations permitted</td>
<td>Same</td>
</tr>
<tr>
<td>Winders</td>
<td>None</td>
<td>Permitted subject to 5-2.2.2.8</td>
</tr>
<tr>
<td>Handrail height</td>
<td>None</td>
<td>Permitted subject to 5-2.2.2.7</td>
</tr>
<tr>
<td>Maximum height between landings</td>
<td>12 ft (3.7 m)</td>
<td>Same</td>
</tr>
<tr>
<td>Access to escape</td>
<td>Door or casement windows 24 in. X 6 ft 6 in. (61 cm x 190 cm) or double hung windows 30 in. X 56 in. (76 cm x 91 cm) clear opening</td>
<td>Windows providing a clear opening of at least 20 in. (50.8 cm) in height, and 5.7 sq. ft (0.53 sq. m) in area</td>
</tr>
<tr>
<td>Discharge to ground</td>
<td>Swinging stair section permitted if approved by authority having jurisdiction</td>
<td>Same</td>
</tr>
<tr>
<td>Capacity, number of persons per 310; if winders or ladder form bottom balcony, 5; if both, 1</td>
<td>0.5 in. (1.3 cm) per person, if access by door; 1.0 in. (2.5 cm) per person if access by climbing over window sill</td>
<td>10</td>
</tr>
</tbody>
</table>
5-2.8.3 Access.

5-2.8.3.1 Access to fire escape stairs shall be in accordance with 5-2.8.4 and 5-5.1.2.

Exception: Where permitted by in the existing occupancy chapters of this Code, access to fire escape stairs shall be permitted by way of windows. Non-screens or storm windows shall be prohibited permitted to be used if there they impair free access to the fire escape stair. Walls and windows shall be arranged and maintained so as to be easily opened with a minimum of physical effort.

5-2.8.3.2 Fire escape stairs shall extend to the roof in all cases where the roof is subject to occupancy or provides an area of safe refuge. In other cases, if the roof has a pitch in accordance with 5-2.8.4, fire escape ladders in accordance with 5-2.9 shall be provided for access to the roof. Exception: If the roof has a pitch of 1 in 6 or less, fire escape ladders in accordance with 5-2.9 or alternating tread devices in accordance with 5-2.11 shall be provided for access to the roof.

5-2.8.3.3 Access to a fire escape stair shall be directly to a balcony, landing, or platform. The platform shall be no higher than the floor or window sill level and shall be not less than 42 in. (107 cm) below the floor level or 18 in. (45.7 cm) below the window sill.

5-2.8.4 Stair Details. Fire escape stairs shall comply with the requirements of Table 5-2.8.4(a) and subsequent sections. Replacement of fire escape stairs shall comply with the requirements of Table 5-2.8.4(b).

5-2.8.5 Guards, Handrails, and Visual Enclosures.

5-2.8.5.1 All fire escape stairs shall have walls or guards and handrails on both sides in accordance with 5-2.2.4.

Exception: Existing handrails on fire escape stairs shall be permitted except if they are necessary to provide a means of egress from storage elevators where approved by the authority having jurisdiction.

5-2.8.6 Materials and Strength.

5-2.8.6.1 Noncombustible materials shall be used for the construction of all components of fire escape stairs.

5-2.8.6.2 The authority having jurisdiction shall be permitted to approve any existing fire escape stair that has been shown by load test or other satisfactory evidence to have adequate strength.

5-2.8.7 Transportation Stair Sections.

5-2.8.7.1 A single swinging stair section shall be permitted to terminate fire escape stairs over sidewalks, alleys, or driveways where it is impractical to make the termination with fire escape stairs.

5-2.8.7.2 Swinging stair sections shall not be located over doors, over the path of travel from any other exit, or in any locations where there are likely to be obstructions.

5-2.8.7.3 Width of swinging stair sections shall be no less than that of the fire escape stairs above.

5-2.8.7.4 Pitch of swinging stair sections shall be no steeper than that of the fire escape stairs above.

5-2.8.7.5 Guards and handrails, in accordance with 5-2.2.4, shall be provided and shall be similar in height and construction to those used with the fire escape stairs above. Guards and handrails shall be designed to prevent any possibility of injury to persons where stairs swing downward. Minimum clearance between moving sections and any other portion of the stair system where hands might have the potential to be caught shall be 4 in. (10.2 cm). Minimum clearance between moving sections and walls or other structures shall be at least that of the stairs and length no less than 4 ft (1.2 m).

5-2.8.7.6 If the distance from the lowest platform to ground exceeds 12 ft (3.7 m), an intermediate balcony not more than 12 ft (3.7 m) from the ground may be located at least 7 ft (2.1 m) in the center of the stair. A guardrail extending at least 42 in. (107 cm) shall be provided, with vertical clearances not less than 36 in. (91.4 cm) from the top of the guardrail to the platform.

5-2.8.7.7 Swinging stairs shall be counterbalanced about a pivot, and cables shall be used. A weight located one step from the pivot shall not cause the stairs to swing downward, and a weight of 150 lb (68 kg) located one quarter of the length of the swinging stairs from the pivot shall positively cause the stairs to swing downward.

5-2.8.7.8 The pivot for swinging stairs shall be of a corrosion-resistant assembly or have clearances to prevent sticking due to corrosion.

Nest Devices shall not be installed to lock a swinging stair section in the up position.

5-2.8.8 Intervening Spaces.

5-2.8.8.1 Where approved by the authority having jurisdiction, fire escape ladders shall be permitted to lead to an adjoining roof that must be crossed before continuing downward travel. The direction of travel shall be clearly marked, and walkways with guard and handrails complying with 5-2.2.4 shall be provided.

5-2.8.8.2 Where approved by the authority having jurisdiction, fire escape stairs shall be permitted to be used in combination with interior or outside stairs complying with 5-2.9 provided a continuous safe path of travel is maintained.

5-2.9 Fire Escape Ladders.

5-2.9.1 General. Fire escape ladders shall be permitted to be used only under the following conditions if providing:

(a) To provide access to unoccupied roof spaces as permitted by in 5-2.8.3.2; or

(b) To provide a second means of egress from storage elevators as permitted by in Chapter 29, or

(c) To provide means of egress from towers and elevated platforms around machinery or similar spaces subject to occupancy only by able-bodied adults, totaling not more than three in number, or

(d) To provide a secondary means of egress from boiler rooms or similar spaces subject to occupancy by able-bodied adults, totaling not more than three in number, or

(e) To provide access to the ground from the lowest balcony or landing of a fire escape stair for very small buildings as permitted by in 5-2.8.4 where approved by the authority having jurisdiction.

5-2.9.2 Construction and Installation. Fire escape ladders shall comply with the requirements of ANSI A14.3, Safety Code for Fixed Ladders.

Exception No. 1: Existing ladders complying with the edition of this Code that was in effect when the ladders were installed shall be permitted to continue to be used subject to the approval of where approved by the authority having jurisdiction.

Exception No. 2: Ladders installed with a pitch less than 75 degrees shall not be prohibited permitted.

Exception No. 3: Combustible ladders shall not be prohibited permitted.

Exception No. 4: Fixed industrial stairs complying with ANSI A1264.1, Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems, minimum requirements for fixed stairs shall be permitted in industrial occupancy locations where fire escape ladders are permitted in accordance with Chapter 29.

5-2.9.3 Access. The lowest rung of any ladder shall not be more than 12 in. (30.5 cm) above the level of the surface beneath it.

5-2.10 Slide Escapes.

5-2.10.1 General.

5-2.10.1.1 A slide escape shall be permitted as a component in a means of egress where specifically permitted in Chapters 8 through 29.

5-2.10.1.2 Each slide escape shall be of an approved type.

5-2.10.2 Capacity.

5-2.10.2.1 Slide escapes, where permitted as means of egress, shall be rated at a capacity of 60 persons.

5-2.10.2.2 Slide escapes shall not constitute more than 25 percent of the required egress capacity from any building or structure or any individual story or floor thereof.

Exception: As permitted in high hazard industrial occupancies in accordance with Chapter 29.

5-2.11 Alternating Tread Devices.

5-2.11.1 Alternating tread devices complying with 5-2.11.2 shall be permitted if providing to be used only as follows:

(a) To provide access to unoccupied roof spaces as permitted by in 5-2.8.3.2;

(b) To provide a second means of egress from storage elevators as permitted by in Chapter 29.

5-2.11.2 The length of egress from towers and elevated platforms around machinery or similar spaces subject to occupancy only by able-bodied adults, totaling not more than three in number, or

5-2.11.3 The length of egress from boiler rooms or similar spaces subject to occupancy only by able-bodied adults, totaling not more than three in number.

5-2.12 Alternating tread devices shall comply with the following:

(a) Handrails shall be provided on both sides of alternating tread devices in accordance with 5-2.2.4.5; and
automatic sprinkler system in accordance with Section 7-7 accessible from the space they serve by an accessible means of egress.

(2) The angle of the device shall be between 50 and 68 degrees to horizontal;

(3) The height of the riser shall not exceed more than 9.5 in. (24.1 cm); and

(4) Treads shall have a minimum projected tread depth of 5.8 in. (14.7 cm) measured in accordance with 5-2.2 with each tread providing 9.5 in. (24.1 cm) of depth including tread overlap; and.

(a) A minimum distance of 3 in. (7.6 cm) shall be provided between the stair handrail and any other object; and

(b) The initial tread of the stair shall begin at the same elevation as the platform, landing, or floor surface; and

(i) The alternating treads shall not be laterally separated by more than 2 in. (5.0 cm); and

(j) The occupant load served shall not be more than three.

5-2-12 Areas of Refuge.

5-2-12.1 General. An area of refuge used as part of a required accessible means of egress in accordance with 5-5.4, or otherwise used as a part of any required means of egress, shall conform to:

(a) The general requirements of Section 5-1, and

(b) The special requirements of 5-2.12.2 and 5-2.12.3.

Exception to (b): Areas of refuge consisting of floor stories of buildings protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7 (see 5-1.2).

5-2-12.2 Accessibility.

5-2-12.2.1 Required portions of an area of refuge shall be accessible from the space they serve by an accessible means of egress.

5-2-12.2.2 Required portions of an area of refuge shall also have access to a public way, without requiring return to the building spaces through which travel to the area of refuge occurred, via an exit or an elevator.

5-2-12.3 Where the exit used to provide egress from an area of refuge to a public way, required by an approved floor story to be accessible, includes stairs, the minimum clear width of landings and stair flights, measured between handrails and at all points below handrail height, shall be 48 in. (1.22 m).

Exception No. 1: Areas of refuge created by horizontal exits in accordance with 5-2.4.

Exception No. 2: For stairs where egress is in the descending direction, a minimum 37-in. (94-cm) clear width, measured at and below handrail height, shall be permitted if approved alternative measures are provided that do not require carrying occupied wheelchairs on the stairs.

Exception No. 3: Existing stairs and landings that provide a minimum 37-in. (94-cm) clear width, measured at and below handrail height, shall be permitted.

5-2-12.2.4* Where an elevator is provided to provide access from an area of refuge to a public way, the elevator shall be approved for fire fighter service as provided in Section 211 of ASME/ANSI A17.1, Safety Code for Elevators and Escalators. The power supply shall be protected against interruption from fire occurring within the building but outside the area of refuge. The elevator shall be located in a shaft system meeting the requirements for smokeproof enclosures in accordance with 5-2.5.

Exception No. 1: The smokeproof enclosure shall not be required for areas of refuge that are more than 1,000 sq. ft (93 sq. m) in size and are created by a horizontal exit meeting the requirements of 5-2-4.

Exception No. 2: The smokeproof enclosure shall not be required in a building that is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7.

5-2-12.2.5 The area of refuge shall be provided with a two-way communication system for communication between the area of refuge and a central control point. The door to the stair enclosure or the elevator door and the associated portion of the area of refuge that the stair enclosure door or elevator door serves shall be identified by signage. (See 5-2.12.3.5.)

5-2-12.2.6* Instructions for summoning assistance, via the two-way communication system, and written identification of the area of refuge location shall be posted adjacent to the two-way communication system.

5-2-12.3 Areas of Refuge Details.

5-2-12.3.1 Each area of refuge shall be sized to accommodate one wheelchair space (30 in x 125 in) for each 200 occupants or portion thereof, based on the occupant load served by the area of refuge. Such wheelchair spaces shall maintain the width of a means of egress to at least that required for the occupant load served, measured along and at least 56 in. (91 cm).

5-2-12.3.2* For any area of refuge less than or equal to 1,000 sq. ft (93 sq. m) in size, it shall be demonstrated by calculation or test that tenable conditions can be maintained within the area of refuge for a period of 15 minutes. In the case of the remaining area of refuge on the side of the barriers separation, the area of refuge is subject to the maximum expected fire conditions.

5-2-12.3.3 Access to any designated wheelchair space in an area of refuge shall not be through more than one adjoining wheelchair space.

5-2-12.3.4* Each area of refuge shall be separated from the remainder of the story by a barrier with a minimum 1-hour fire resistance rating, unless a greater rating is required by other provisions of this Code. Such barriers, and any openings in them, shall minimize air leakage and retard the passage of smoke. Doors in such barriers shall have at least minimum of a 20-minute fire resistance rating, unless a greater rating is required by other provisions of this Code, and shall be either self-closing or automatic-closing in accordance with the Exception to 5-2.14, 5-2.1.7. Doors shall be permitted to penetrate such barriers, unless prohibited by other provisions of this Code, and shall be provided with smoke-actuated dampers or other approved means to resist the transfer of smoke into the area of refuge.

Exception No. 1: Buildings protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7.

Exception No. 2: Existing barriers with a minimum 30-minute fire resistance rating shall be permitted.

5-2-12.5 Each area of refuge shall be identified by a sign stating "AREA OF REFUGE" that conforms to the requirements of CABO/ANSI A17.1, American National Standard for Accessible and Usable Buildings and Facilities, for such signage and displays the internally illuminated sign "AREA OF REFUGE" that conforms to the requirements of CABO/ANSI A17.1, American National Standard for Accessible and Usable Buildings and Facilities, for such signage and displays the internally illuminated sign that conforms to the requirements of Section 7-7.

5-2-12.5.1 Each area of refuge shall be identified by a sign stating "AREA OF REFUGE" that conforms to the requirements of CABO/ANSI A17.1, American National Standard for Accessible and Usable Buildings and Facilities, for such signage and displays the internally illuminated sign that conforms to the requirements of Section 7-7.

5-2-12.5.2 Tactile signage complying with CABO/ANSI A17.1, American National Standard for Accessible and Usable Buildings and Facilities, shall be located at each door providing access to the area of refuge. Signs also shall be installed at all exits not providing an accessible means of egress, as defined in 5-1.3, and where otherwise necessary to indicate clearly the direction to an area of refuge. Signs shall be illuminated as required for exit signs where exit sign illumination is required.

5-2-12.5.3 Tactile signage complying with CABO/ANSI A17.1, American National Standard for Accessible and Usable Buildings and Facilities, for such signage and displays shall be located in accordance with Section 7-7.

5-2-12.5.4 Tactile signage complying with CABO/ANSI A17.1, American National Standard for Accessible and Usable Buildings and Facilities, for such signage and displays shall be located in accordance with Section 7-7.

5-3.1 Occupant Load.

5-3.1.1 The total capacity of the means of egress for any floor story, balcony, tier, or other occupied space shall be sufficient for the occupant load thereof.

5-3.1.2* The occupant load in any building or portion thereof shall not be assumed to be less than the number determined by dividing the floor area assigned to that use by the occupant load factor as specified in accordance with Chapters 8 through 28 for individual occupancies.

5-3.1.3 The occupant load shall be separated in any building or portion thereof to be increased from that number established for the given use as specified in accordance with 5-3.1.2, where all other requirements of this Code are also met, based on such increased number. The authority having jurisdiction shall be permitted to require an approved aisle, seating, or fixed equipment diagram to substantiate any increase in occupant load and shall be permitted to require that such diagram be posted in an approved location.

5-3.1.4 Where exits serve more than one floor story, only the occupant load of each floor story considered individually need be used in computing the capacity of the exits at that floor story, provided required egress capacity of the exit shall not be decreased in the direction of egress travel.

5-3.1.5 Where means of egress from floor stories above and below converge at an intermediate floor story, the capacity of the means of egress from the point of convergence shall be increased at least the sum of the two.

5-3.1.6 Where any required egress capacity from a balcony or mezzanine passes through the room below, that required capacity shall be added to the required egress capacity of the room in which it is located.

5-3.2.2 Measurement of Means of Egress. Width of means of egress shall be measured in the clear at the narrowest point of the exit component under consideration at the means of egress as specified in the International Building Code.

Exception: Projections not exceeding more than 3 1/2 in. (8.9 cm) on each side are permitted at and below handrail height.

5-3.5 Egress Capacity.

5-3.3.1 Egress capacity for approved components of means of egress shall be based on the following:
5-3.3.3. The required capacity of a corridor is the occupant load utilizing the corridor for exit access divided by the required number of exits to which the corridor connects, but shall not be at least less than the required capacity of the exit to which the corridor leads.

5-3.4 Minimum Widths

5-3.4.1 The minimum width of any means of egress shall be as specified that required for a given egress component by Chapter 5 or for individual occupancies by Chapters 8 through 29, but in no case shall exit width be less than and shall be at least 36 in. (91 cm).

Exception No. 1: The minimum width of exit access formed by furniture and movable partitions, serving not more than six people, and not more than 50 ft (15 m) in length, shall be at least not more than 18 in. (45.7 cm) at and below 38 in. (96 cm) height or 28 in. (71 cm) above 38 in. (96 cm) height, provided the minimum 36 in. (91 cm) for new and 28 in. (71 cm) for existing occupancy provided without moving permanent walls.

Exception No. 2: Doors as provided for in 5-2.1.3.

Exception No. 3: In existing buildings, the minimum width shall be at least not more than 28 in. (71 cm).

Exception No. 4: Aisles and aisle accessways in assembly occupancies provided in Chapters 8, and 9.

5-3.4.2 Where a single exit access leads to an exit, its capacity in terms of width shall be at least equal to the required capacity of the exit to which it leads. Where more than one exit access leads to an exit, each shall have a width adequate for the number of persons it accommodates.

SECTION 5-4 NUMBER OF MEANS OF EGRESS

5-4.1 General

5-4.1.1 The minimum number of means of egress shall be as specified for that required for a given egress component by Chapter 5 or for individual occupancies by Chapters 8 through 29, but in no case shall exit access be less than and shall be at least 50 percent of the required number of means of egress.

Exception No. 1: Where a single exit is permitted by in Chapter 5 or for individual occupancies by Chapters 8 through 29, but in no case shall exit access be less than and shall be at least 50 percent of the required number of means of egress.

5-4.1.2 Where a single exit access is provided, the common path of travel limitations of Chapters 8 through 29 are met not exceeded.

5-4.1.3 Accessible means of egress, in accordance with 5-5.4, not utilizing elevators shall be permitted to serve as any or all of the required minimum number of means of egress.

5-4.1.4 Only the occupant load of each story considered individually shall be required to be used in computing the number of means of egress at that story, provided that the required number of means of egress shall not be decreased in the direction of egress travel.

5-4.1.5 Doors other than the hoistway door and the elevator car door shall be prohibited at the point of access to an elevator car.

Exception: Doors that are readily openable from the car side without a key, tool, special knowledge, or special effort.

5-4.1.6 Elevator lobbies shall have access to at least one exit. Such exit access shall not require the use of a key, tool, special knowledge, or special effort.

5-4.1.7 Exit access from rooms or spaces shall be permitted to be through adjoining or intervening rooms or areas, provided such adjoining rooms are accessory to the area served. Foyers, lobbies, and reception rooms constructed as required for corridors shall not be considered at adjoining rooms. Exit access shall be arranged so that it will not be necessary to pass through any area identified under Protection from Hazards in Chapters 8 through 30.

5-4.1.8 Exit access shall be arranged so that it will not be necessary to pass through any area identified under Protection from Hazards in Chapters 8 through 30.

5-4.1.9 Exit access shall not be permitted to pass through rooms or spaces subject to locking as provided in Chapters 14, and 15.

5-4.2 Accessible means of egress shall be permitted to pass through rooms as provided in Chapters 24, 25, 26, and 27.

5-4.3 Exterior ways of exit access shall be permitted to pass through storage compartments as provided in Chapters 24, and 25.

5-4.4* Exit access and exit doors shall be designed and arranged to be clearly recognizable. Hangings or draperies shall not be placed over exit doors or otherwise located to conceal or obscure any exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of exit.

Exception: Curtains shall be permitted across means of egress openings in tent walls if:

(a) Distinctly marked in contrast to the tent walls so as to be recognizable as means of egress, and

(b) Installed across an opening that is at least minimum of 6 ft (1.8 m) in width, and

(c) Hung from slide rings or equivalent hardware so as to be readily moved to the side to create an unobstructed opening in the tent wall of the minimum width required of door openings.

5-4.5.1 Exit access shall be permitted to be by means of any exterior balcony, porch, gallery, or roof that conforms to the requirements of this chapter.

5-4.5.2 The long side of the balcony, porch, gallery, or similar space shall be at least 50 percent open and shall be arranged to prevent the accumulation of smoke.

5-4.5.3 Exterior exit access balconies shall be separated from the interior of the building by walls and openings protective as required for corridors.
Exception: Where the exterior exit access balcony is served by at least two remote stairs that:

5-5.3.4 A permanent, reasonably straight path of travel shall be maintained over and below handrail height, shall be permitted in buildings formed by horizontal exits meeting the requirements of 5-2.4.

5-5.3.5 There shall be no obstructions of any kind by railings, barriers, or gates that divide the open space into sections apportioned to individual rooms, apartments, or other subdivisions.

5-5.3.6 An exterior exit access shall be arranged so that there are no dead ends in excess of 20 ft (6.1 m).

5-5.3.7 Any gallery, balcony, bridge, porch, or other exterior exit access that projects beyond the outside wall of the building shall comply with the requirements of this chapter as to width and arrangement.

5-5.3.8 An exterior exit access shall have solid, substantially level floors and shall have guardrails that are at least equivalent to those specified in 5-2.24 on unenclosed sides more than 80 in. (203 cm) above the floor or grade below.

5-5.3.9 Where accumulation of snow or ice is likely because of climate, the exterior exit access shall be protected by a roof.

5-5.3.10 The materials of construction shall be as permitted for the building served.

5-5.4 Accessible Means of Egress:

5-5.4.1 Areas required to be accessible to people with severe mobility impairments shall have a minimum of two accessible means of egress. Access shall be provided to a minimum of one accessible area of refuge or one accessible exit discharge within the allowable travel distance.

Exception No. 1: Except as otherwise required by in Chapters 6 through 30, accessible means of egress shall not be required in existing buildings.

Exception No. 2: Exit access travel shall be permitted to be common for the distances allowed permitted as common paths of travel.

Exception No. 3: A single accessible means of egress shall be permitted from buildings or areas of buildings permitted to have a single exit.

Exception No. 4: The authority having jurisdiction shall be permitted to reduce or eliminate the number of accessible means of egress that an analysis of the means of egress based on the size and arrangement of the space, the facility operation, and determination of such means provides the best direct route from the accessible area.

Exception No. 5: Health care occupancies protected throughout by an approved, supervised automatic sprinkler system installed in accordance with the provisions of Section 7-7.

5-5.4.2 Each required accessible means of egress shall be continuous from each accessible occupied area to a public way or area of refuge, which, in accordance with 5-5.12.2, shall have accessible public ways.

5-5.4.3 Where an exit stair is used within an accessible means of egress, it shall have stair flights and landings with a minimum clear width of 48 in. (122 cm) measured between handrails and at all points below handrail height, and shall either incorporate an accessible area of refuge within an enlarged story-level landing or shall be accessible from an area of refuge. Any required area of refuge shall be in accordance with 5-5.12.

Exception No. 1: For stairs where egress is in the descending direction, a minimum 37-in. (94-cm) clear width, measured at and below handrail height, shall be permitted if approved alternative measures are provided that do not require carrying occupied wheelchairs on the stairs.

Exception No. 2: Existing stairs and landings that provide a minimum 37-in. (94-cm) clear width, measured at and below handrail height, shall be permitted.

Exception No. 3: Stairs providing egress from areas of refuge formed by horizontal exits meeting the requirements of 5-2.4.

Exception No. 4: A minimum 37-in. (94-cm) clear width, measured at and below handrail height, shall be permitted in buildings protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7.

5-5.4.4 An elevator shall be considered part of an accessible means of egress provided that:

(a) Access from an accessible area of refuge meeting the requirements of 5-2.12, and

(b) Approved for fire fighter service as provided in Section 211 of the Fire Code (see 5-6.4).

5-5.4.5 A smoke barrier, in accordance with Section 6-5.3, that additionally has a minimum 1-hour fire resistance rating, and a horizontal exit, in accordance with 5-2.4, to be considered part of an accessible means of egress shall discharge to an accessible area of refuge in accordance with 5-2.12.

5-5.4.6 In buildings required to have a smoke barrier that are means of egress, where a floor area accessible to persons with severe mobility impairments is four or more stories above or below a level stair exit discharge, there shall be a smoke barrier at least 5 ft (1.5 m) in length at each exit of the floor area, complying with 5-5.4.4, shall be provided.

SECTION 5-6 MEASUREMENT OF TRAVEL DISTANCE TO EXITS

5-6.1 The maximum travel distance in any occupied space to at least one exit, measured in accordance with the following requirements, shall not exceed more than the limits specified by in this Code (see 5-6.4).

5-6.2 The travel distance to an exit shall be measured on the floor or other walking surface along the centerline of the natural path of travel starting from the most remote point subject to occupancy, curving around any corners or obstructions with a 1-ft (0.3 m) clearance therefrom, and ending at the center of the doorway or other point at which the exit begins. Where measurement includes stairs, the measurement shall be taken in the plane of the tread nosing.

Exception: Travel distance measurement shall be permitted to terminate at a smoke barrier in existing detention and correctional occupancies as provided in Chapter 15.

5-6.3 Where open stairways or ramps are permitted as a path of travel, travels are required to be measured from the stairway or ramp to a public way or an outside door or other exit in addition to the distance traveled to the stairway or ramp.

5-6.4 Travel Distance Limitations. Travel distance limitations shall be as provided in Chapters 8 through 30 and for high hazard areas as covered in accordance with Section 5-11.

5-6.5 Where any part of an exterior exit is within 10 ft (3 m) horizontally distant from a protected area or protected building opening, as permitted by in the Exceptions to 5-2.2.6.3 for outside stairs, the travel distance to the exit shall include the length of travel to ground level.

SECTION 5-7 DISCHARGE FROM EXITS

5-7.1* All exits shall terminate directly at a public way or at an exit discharge. Yards, courts, open spaces, or other portions of the exit discharge shall be of required width and size to provide all occupants with a safe access to a public way.

Exception No. 1: Interior exit discharge as permitted by in 5-7.2.

Exception No. 2: Rooftop exit discharge as permitted by in 5-7.5.

Exception No. 3: Means of egress shall be permitted to terminate in an exterior area of refuge in detention and correctional occupancies as provided in Chapters 15 and 16.

5-7.2** A maximum of Not more than 50 percent of the required number of exits, and not exceeding more than 50 percent of the required egress capacity, shall be permitted to discharge through one or more stairways or ramps on the level of discharge, provided:

(a) Such discharge leads to a free and unobstructed way to the exterior of the building, and such way is readily visible and identifiable from the point of discharge from the exit; and

(b) The level of discharge is protected throughout by an approved, automatic sprinkler system installed in accordance with Section 7-7 or the portion of the level of discharge used for this purpose is protected by an approved, automatic sprinkler system installed in accordance with Section 7-7 and separated from the nonsprinklered portion of the floor by a fire resistance rating rated construction meeting the requirements for the enclosure of exits (see 5-6.4.1.3.2.1.1) and

Exception to (b): If the discharge area is a vestibule or foyers meeting all of the following:

1. The depth from the exterior of the building shall be not more than 10 ft (3 m) and the length shall be not more than 30 ft (9.1 m), and

2. The foyers shall be separated from the remainder of the level of discharge by construction providing protection at least equivalent to fire rated glass in steel frames, and

3. The foyers serve only as means of egress and includes an exit directly to the outside.

(c) The entire area on the level of discharge shall be separated from areas below by construction having a fire resistance rating rated construction at least that required for the exit enclosure.

Exception to (c): Levels below the level of discharge shall be permitted to be open to the level of discharge in an atrium in accordance with 6-2.4.6.
5-7.3 The exit discharge shall be arranged and marked to make clear the direction of egress to a public way. (See 5-7.4.) Stairs shall be arranged to make clear the direction of egress to a public way. Stairs that continue beyond the level of exit discharge shall be interrupted at the level of exit discharge by partitions, doors, or other effective means. [From 5-2.2.3.6]

Exception: Stairs that continue one-half story beyond the level of exit discharge need not be so interrupted where the exit discharge is obvious. [From 5-2.2.3.6]

5-7.4 Doors, stairs, ramps, corridors, exit passageways, bridges, balconies, escalators, moving walks, and other components of an exit discharge shall comply with the detailed requirements of this chapter for such components.

5-7.5 Signs to the approval of Where approved by the authority having jurisdiction, exit shall be permitted to be accepted where provided:

(a) They discharge to the roof or other sections of the building or adjoining buildings, and
(b) The roof has a fire resistance rating at least the equivalent of that required for the exit enclosure, and
(c) There is a continuous and safe means of egress from the roof, and
(d) All other reasonable requirements for life safety are maintained.

SECTION 5-8 ILLUMINATION OF MEANS OF EGRESS

5-8.1 General.

5-8.1.1* Illumination of means of egress shall be provided in accordance with this section for every building and structure where required in Chapters 8 through 30. For the purposes of this requirement, exit access shall include only designated stairways, ramps, stairs, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairways, ramps, escalators, and passageways leading to a public way.

5-8.1.2 The illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use. Artificial lighting shall be employed at such places and for such periods of time as required to maintain the illumination to the required minimum values herein specified.

5-8.1.3* The floors and other walking surfaces within an exit and within the portions of the exit access and exit discharge designated by 5-8.1.1 shall be illuminated to values of not less than at least 1 foot-candle (10 lx) measured at the floor.

Exception: In assembly occupancies, the illumination of the floors of exit access shall be not less than at least 1/5 foot-candle (2 lx) during periods of performances or projections involving directed light.

5-8.1.4 Any required illumination shall be arranged so that the failure of any single lighting unit, such as the burning out of an electric bulb, will not leave any area in darkness.

5-8.1.5 The electrical supply system used to meet the requirements of Section 5-10 shall be permitted also to serve the function of illumination of means of egress, provided that all applicable requirements of this section for such illumination are met.

5-8.2 Sources of Illumination.

5-8.2.1* Illumination of means of egress shall be from a source of reasonably assured reliability, such as public utility electric service. [Move to appendix]

5-8.2.2 Battery-operated electric lights or any other types of portable lamps or lanterns shall be used for primary illumination of means of egress. Battery-operated electric lights shall be permitted to be used as an emergency source to the extent permitted under Section 5-10.

SECTION 5-9 EMERGENCY LIGHTING

5-9.1 General.

5-9.1.1* Emergency lighting facilities for means of egress shall be provided in accordance with this section for:

(a) Every building or structure where required in Chapters 8 through 30, and
(b) At doors equipped with delayed egress locks. [From 5-2.1.6.1(a)]

(c) The stair shaft and vestibule of smokeproof enclosures. A standby generator that is installed for the smokeproof enclosure mechanical ventilation equipment shall be permitted to be used for such stair shaft and vestibule power supply. [From 5-2.3.14]

For the purposes of this requirement, exit access shall include only designated stairways, ramps, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairways, ramps, aisles, walkways, and escalators leading to a public way.

5-9.1.2 Where maintenance of illumination depends upon changing from one energy source to another, there shall be no appreciable interruption of illumination during the changeover. Where emergency lighting is provided by a prime mover-operated electric generator, a delay of not more than 10 seconds shall be permitted.

5-9.2 Performance of System.

5-9.2.1* Emergency illumination shall be provided for a period of 1 1/2 hours in the event of failure of normal lighting. Emergency lighting facilities shall be arranged to provide initial illumination that is not less than at least an average of 1 foot-candle (10 lx) and a minimum at any point of 0.1 foot-candle (1 lx) measured along the path of egress from floor levels to which exit access is permitted to decline to 0.6 foot-candle (6 lx) average and a minimum at any point of 0.06 foot-candle (0.6 lx) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

5-9.2.2* The emergency lighting system shall be arranged to provide the required illumination automatically in the event of any interruption of normal lighting, such as any failure of public utility or other outside electrical power supply, opening of a circuit breaker or fuse, or any manual act(s), including accidental opening of a switch controlling normal lighting facilities.

5-9.2.3 Emergency generators need to providing emergency power to emergency lighting systems shall be installed, tested, and maintained in accordance with NFPA 110, Standard for Emergency and Standby Power Systems. Stored electrical energy systems where required by this in this code shall be installed and tested in accordance with NFPA 112A, Standard on Stored Electrical Energy Emergency and Standby Power Systems.

5-9.2.4* Battery-operated emergency lights shall use only reliable types of rechargeable batteries provided with suitable facilities for maintaining them in properly charged condition. Batteries used in such lights or units shall be approved for their intended use and shall comply with NFPA 70, National Electrical Code.

5-9.2.5 The emergency lighting system shall be either continuously in operation or shall be capable of repeated automatic operation without manual intervention.

5-9.3 Testing and Maintenance. (See Section 5-11.1.)

SECTION 5-10 MARKING OF MEANS OF EGRESS

5-10.1 General.

5-10.1.1 Means of egress shall be marked in accordance with this section where required by Chapters 8 through 30.

5-10.1.2* Exits shall be marked by an approved sign readily visible from any direction of exit access.

Exception: Main exterior exit doors that obviously make clear are identifiable as exits.

5-10.1.3 At each door into an exit stair enclosure, tactile signage shall be5-10.1.3 At each door into an exit stair enclosure, tactile signage shall be provided stating and complying with CABO/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities, shall be installed adjacent to the latch side of the door 60 in. (152 cm) above the finished floor to the centerline of the sign.

5-10.1.4 Access to exits shall be provided, readily visible signs in all cases where the exit or way to reach it is not readily apparent to the occupants. Sign placement shall be such that no point in the exit access is more than 100 ft (30 m) from the nearest visible sign.

Exception: Signs in existing buildings need not meet the 100-ft (30-m) distance requirement.

5-10.1.5* Where floor proximity exit signs are specifically required by Chapters 8 through 30, exit signs shall be placed near the floor level in addition to those signs required for doors or corridors. These signs shall be sized and illuminated in accordance with the requirements of 5-10.2 and 5-10.3. The bottom of the sign shall be not less than 6 in. (15.2 cm) nor more than 8 in. (20.3 cm) above the floor. For exit doors, the sign shall be mounted on the door or adjacent to the door with the closest nearest edge of the sign within 4 in. (10.2 cm) of the door frame.

5-10.1.6* Every sign required by Section 5-10 shall be located and of such size, distinctive color, and design as to be readily visible and shall provide contrast with decorations, interior finish, or other signs. No decorations, furnishings, or equipment that impairs visibility of an exit sign shall be permitted, nor shall there be any brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision of the required exit sign of such a character as to detract attention from the exit sign.

5-10.1.7 Where floor proximity egress path marking is specifically required by in Chapters 8 through 30, a listed and approved floor proximity egress path marking system that is internally illuminated shall be installed within 8 in. (20.3 cm) of the floor. The system shall provide a visible delineation of the path of travel along the designated exit access and shall be essentially continuous, except as interrupted by doorways, hallways, corridors, or other such
architectural features. The system shall operate continuously or at any time the building fire alarm system is activated. The activation, duration, and continuity of operation of the system shall be in accordance with 5-9.2.

5-10.2* Size of Signs. Every sign required by Section 5-10 shall have the word "EXIT" or other appropriate wording in plainly legible letters not less than at least 6 in. (15.2 cm) high with the principal strokes of letters not less than at least 3/4 in. (1.9 cm) wide. The word "EXIT" shall have letters of a width not less than at least 2 in. (5 cm), except the letter "L," and the minimum spacing between letters shall be not less than at least 3/8 in. (1 cm). Signs larger than the minimum established in this paragraph shall have letter widths, strokes, and spacing in proportion to their height.

Exception No. 1: Approved existing signs.
Exception No. 2: Existing signs having the required wording in plainly legible letters not less than at least 4 in. (10.2 cm) high.
Exception No. 3: Marking required by in 5-10.1.2 and 5-10.1.7.
Exception No. 4: Listed exit signs, illuminated in accordance with 5-10.3, shall be permitted to have letters not less than at least 1 1/2 in. (4 cm) in height with the principal strokes of letters not less than at least 1/4 in. (0.6 cm) in width with a letter width not less than at least 1 1/2 in. (3.8 cm), except the letter "L."

5-10.3* Illumination of Signs.

5-10.3* Every sign required by in 5-10.1.2 or 5-10.1.4 shall be suitably illuminated by a reliable light source. Except where emergency and internally illuminated signs shall be visible in both the normal and emergency lighting mode.

5-10.3* Externally illuminated signs shall be illuminated by not less than at least 5 foot-candles (54 lx) and shall employ a contrast ratio of not less than at least 0.5.

5-10.3* The visibility of an internally illuminated sign shall be the equivalent of an externally illuminated sign that complies with 5-10.3.

Exception: Approved existing signs.

5-10.4 Special Signs. Any door, passage, or stairway that is not an exit but is a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified by a sign reading "NO EXIT." Such sign shall have the word "NO" in letters 2 in. (5 cm) high with stroke width of 3/8 in. (1 cm) and the word "EXIT" in letters 1 in. (2.5 cm) high, with the word "EXIT" below the word "NO."

Exception: Approved existing signs.

5-11 Special Provisions for Occupancies with High Hazard Contents (See Section 4-2.)

5-11.1* In all cases where the contents are classified as high hazard, exits of such types and numbers shall be provided and arranged so that all occupants shall be permitted to escape from the building or structure or from the hazardous area thereof to the outside or to a place of safety with a travel distance of not more than 75 ft (23 m), measured as specified required in 5-10.2.

5-11.2 Egress capacity for high hazard contents areas shall be based on 0.7 in./person (1.8 cm/person) for stairs or 0.4 in./person (1.0 cm/person) for level components and ramps in accordance with 5-1.3.1.

5-11.3 At least two means of egress shall be provided from each building or hazardous area thereof.

Exception: Rooms or spaces not more than 200 sq. ft (18.6 sq. m) and having an occupant load of not more than three persons having a minimum travel distance to the room door of not more than 25 ft (7.6 m).

5-11.4 Means of egress shall be arranged so that there are no dead ends in corridors.

Exception: Spaces meeting the requirements of the Exception to 5-11.3.

SECTION 5-12 MECHANICAL EQUIPMENT ROOMS, BOILER ROOMS, AND FURNACE ROOMS

5-12.1 Mechanical equipment rooms, boiler rooms, furnace rooms, and similar spaces shall be arranged so that common path of travel to a maximum of not more than 50 ft (15 m) is permitted:

(a) In buildings protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7.7, or
(b) In mechanical equipment rooms with no fuel-fired equipment, or
(c) In existing buildings.

5-12.2* Stories used exclusively for mechanical equipment, furnaces, or boilers shall be permitted to have a single means of egress where the travel distance to an exit on that story does not exceed more than the common path of travel limitations of 5-12.1.

SUBSTANTIATION: The changes recommended by this proposal are meant to be only editorial in nature. The changes are intended to clarify meaning and facilitate use of the chapters.

The draft does not implement the technical changes being made by the committee actions on other proposals. The technical changes made by those proposals are not intended to be superseded by these editorial changes. However, the editorial changes are to be applied, to the degree feasible, to text that has been modified by the Committee Actions on the other proposals on Chapter 5.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 20
VOTE ON COMMITTEE ACTION: Accept.

5-10.4.1.2 Chevron-type indicator.
I Elevator Evacuation System: A system including a vertical series of
elevator lobbies and the associated elevator lobby doors, elevator
car(s) and to which people directly leave elevator car(s).

EXPLANATION OF AFFIRMATIVE:
1) Discourage the stirrup type fire release mechanisms. These
mechanisms are dangerous because they must be operated from a
standing position, increasing the risk of smoke inhalation.
2) Require that the operating wire rope of the mechanism be
shielded with a wound conduit, not just a track-like cover. This
would not only protect the wire rope, but aid firefighters by enabling
them to open the release mechanism by slipping an ax under the
conduit along the outside wall. Once a simple prying motion is
used, the wound conduit expands like a spring, creating tension on
the operating wire rope inside the conduit and opening the security
bars without damaging the wire rope.
3) Require that the push plate type release mechanism have a plate
surface of at least 4 in. x 3 in. Larger targets are easier to find on the
inside and provide a bigger target for a fire ax.
4) The UBC calls for some mechanisms to be fitted with a key
under certain conditions. The keyed release has some serious
drawbacks and should not apply to a fire release mechanism that can
be opened quickly by a firefighter with an ax. The same problems
exist both inside and outside with keyed release mechanisms.

COMMITTEE STATEMENT:
The keyed release is a dangerous mechanism. Firefighters are human and
can lose or forget keys or drop them in the dark, creating delays where time is critical.
Lost keys can also create a legal liability if later used in a robbery. It is
irresponsible to mandate that kind of liability when a fire ax will
open a fire release mechanism that meets this code.

STUBSTANTIATION:
See explanation contained above within the recommendation.

NOTE: Supporting material is available for review at NFP A
Headquarters.

COMMITTEE ACTION:
Reject.

COMMITTEE STATEMENT:
Submitter has proposed no Code text for a special standard nor has he proposed specific requirements for
security bar release devices. Current Code text, especially 21-
2.2.5(c), adequately prohibits special tools or special effort for use of
means of escape.

STUBSTANTIATION:
See explanation contained above within the recommendation.

NOTES:
Submitter: John H. Klot, Building and Fire Research Lab, NIST
Affirmative: 24
Negative: 1
Not returned: 2 Behrens, Tomy

101-31: (Chapter 5 — Security Bars): Reject

SUBMITTER: Fred R. Wiley, Wiley Engineering
RECOMMENDATION: I am submitting this to you in anticipation that
NFPA will adopt a standard by which the fire release mecha-
nisms attached to security bars can be measured. I have tested such
devices and have rendered opinions as to their effectiveness.

I have provided a copy of the Los Angeles Municipal Code section
91.1204, which is the security bar ordinance. Although this
ordinance currently sets a high standard, I feel the following
recommendations would improve and expand the ordinance.
1) Discourage the stirrup type fire release mechanisms. These
mechanisms are dangerous because they must be operated from a
standing position, increasing the risk of smoke inhalation.
2) Require that the operating wire rope of the mechanism be
shielded with a wound conduit, not just a track-like cover. This
would not only protect the wire rope, but aid firefighters by enabling
them to open the release mechanism by slipping an ax under the
conduit along the outside wall. Once a simple prying motion is
used, the wound conduit expands like a spring, creating tension on
the operating wire rope inside the conduit and opening the security
bars without damaging the wire rope.
3) Require that the push plate type release mechanism have a plate
surface of at least 4 in. x 3 in. Larger targets are easier to find on the
inside and provide a bigger target for a fire ax.
4) The UBC calls for some mechanisms to be fitted with a key
under certain conditions. The keyed release has some serious
drawbacks and should not apply to a fire release mechanism that can
be opened quickly by a firefighter with an ax. The same problems
exist both inside and outside with keyed release mechanisms.

COMMITTEE STATEMENT:
The keyed release is a dangerous mechanism. Firefighters are human and
can lose or forget keys or drop them in the dark, creating delays where time is critical.
Lost keys can also create a legal liability if later used in a robbery. It is
irresponsible to mandate that kind of liability when a fire ax will
open a fire release mechanism that meets this code.

STUBSTANTIATION:
See explanation contained above within the recommendation.

NOTE: Supporting material is available for review at NFP A
Headquarters.

COMMITTEE ACTION:
Reject.

COMMITTEE STATEMENT:
Submitter has proposed no Code text for a special standard nor has he proposed specific requirements for
security bar release devices. Current Code text, especially 21-
2.2.5(c), adequately prohibits special tools or special effort for use of
means of escape.

STUBSTANTIATION:
See explanation contained above within the recommendation.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:
Affirmative: 24
Negative: 1
Not returned: 2 Behrens, Tomy

101-32: (5-1.2 Accessible Exit Discharge (New)): Reject

SUBMITTER: Philip R. Jose, VA Regional Division Office
RECOMMENDATION: Add a new definition under 5-1.2 as follows:
Accessible Exit Discharge. An exit discharge which is usable by
persons with severe mobility impairment.

STUBSTANTIATION:
Section 5-5.4.1 uses this term, yet it has no definition or meaning in the ’94 Code.

COMMITTEE ACTION:
Reject.

COMMITTEE STATEMENT:
The term "accessible means of egress" is well defined.
"Means of egress" is defined as having three parts:
access, "accessible exit", and "accessible exit discharge". Thus, the terms "accessible exit
access", "accessible exit", and "accessible exit discharge" are
understood without the Code having to provide separate definitions.

STUBSTANTIATION:
See explanation contained above within the recommendation.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:
Affirmative: 24
Negative: 1
Not returned: 2 Behrens, Tomy

101-33: (5-1.2 Elevator Evacuation System, Elevator Lobby, Elevator
Lobby Door (New)): Accept

SUBMITTER: John H. Klot, Building and Fire Research Lab, NIST
RECOMMENDATION: Add three definitions to 5-1.2 as follows:

1) Elevator Lobby: A special series of elevator lobbies and the associated elevator lobby doors, elevator
shaft(s), and machine room(s) that provide protection from fire
effects for elevator passengers, people waiting to use elevators, and
elevator equipment to allow use of elevators for egress.

Elevator Lobby. A space from which people directly enter elevator
car(s) and to which people directly leave elevator car(s).

Elevator Lobby Door. A door between an elevator lobby and
another building space that is not the elevator shaft.

STUBSTANTIATION: These definitions support other suggested changes to Chapter 5 of NFPA 101 that allow an elevator to be a
component of a means of egress.

COMMITTEE ACTION:
Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:
Affirmative: 23
Negative: 1
Not returned: 2 Behrens, Tomy

101-34: (5-1.2 Means of Egress): Accept

SUBMITTER: John H. Klot, Building and Fire Research Lab, NIST
RECOMMENDATION: Revise the 5-1.2 definition of Means of
Egress by changing "ramps, stairs,..." to "ramps, stairs, elevators,...".

STUBSTANTIATION: People with mobility limitations have considerable difficulty evacuating multi-story buildings without using elevators. This change and other proposed changes to NFPA 101 will allow elevators to be used by people with and without mobility limitations for fire evacuation. The approach taken for fire evacuation by elevators focuses on providing protection from fire effects for elevator passengers, people waiting to use elevators, and
elevator equipment. A body of research at NIST supports the conclusion that fire evacuation by elevator is feasible, provided that the elevator system is
protected from flame, heat, smoke, water, loss of machine room
cooling and loss of electric power. This research is described in
references listed in the substantiation of another proposal.

COMMITTEE ACTION:
Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:
Affirmative: 23
Negative: 1
Not returned: 2 Behrens, Tomy

101-35: (5-1.3.1(a) Exception (New)): Accept in Principle

SUBMITTER: James R. Lathrop, Koffel Associates, Inc.
RECOMMENDATION: Add an exception to 5-1.3.1(a) to read:
Exception: In existing buildings exit stair enclosures shall have not less
than a 1/2/hr fire resistance rating.

STUBSTANTIATION: Exit stairs in thousands of existing buildings are
enclosed with lath and plaster construction. According to the
archaic fire resistance directory this typically provides only 1/2/hr fire resistance rating. This should be recognized by the Code. It
does not make much sense to rip out lath and plaster in good
condition to replace it with gypsum board.

COMMITTEE ACTION:
Accept in Principle.

See Committee Action on Proposal 101-36 (Log #177) on 5-
1.3.1(b).
COMMITTEE STATEMENT: The new appendix item created by the Committee Action on the above referenced proposal should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

101-36 - (5-1.3.1(b) Exception No. 1 and No. 2 (New), 17-2.2.1.2 and 19-2.2.1.2); Accept in Principle

SUBMITTER: James K. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Add two new exceptions to 5-1.3.1(b) to read:

Exception No. 1 to (b): In existing non-high rise buildings existing exit stair enclosures shall have not less than a 1/2-hr fire resistance rating.

Exception No. 2 to (b): In existing buildings protected throughout by an approved supervised automatic sprinkler system in accordance with Section 7.7, existing exit stair enclosures shall have not less than a 1/2-hr fire resistance rating.

Revise and renumber the current exception to read:

Exception No. 3 to (b): Hotels and dormitories in accordance with 16-2.2.1.2 and apartment buildings in accordance with 19-2.2.1.2.

Delete 17-2.2.1.2 and 19-2.2.1.2.

SUBSTANTIATION: As with the problem discussed in the proposal for 5-1.3.1(a) the same situation occurs in buildings greater than 3 stories in height. Numerous 4, 5 and 6 story buildings have lath and plaster enclosed stairs or enclosures of unknown fire resistance of gypsum board or masonry block construction. In non-high rise buildings, and in sprinklered high-rise buildings, most people look for a wall in good construction and inspect for openings and penetrations. A lath and plaster wall usually only provides about a 1/2hr fire resistance rating according to the archaic fire resistance directory. However experience has shown excellent performance of these walls as long as openings are protected and walls are maintained. Non-sprinklered high rise buildings need to be evaluated in greater detail. It may be easier to sprinkler than upgrade the enclosure. The revisions to the current exception reflect the fact that the new exceptions would eliminate the need for 17-2.2.1.2 and 19-2.2.1.2.

There is nothing magical about this provision, but it is a recognition of a need to recognize the real world of applying this code to existing buildings. Proposals are also being submitted to Chapter 6 to recognize some of these same problems with regard to existing doors.

COMMITTEE ACTION: Accept in Principle.

Add two new exceptions to 5-1.3.1(b) to read:

Exception No. 1 to (b): In existing non-high rise buildings existing exit stair enclosures shall have not less than a 1-hr fire resistance rating.

Exception No. 2 to (b): In existing buildings protected throughout by an approved supervised automatic sprinkler system in accordance with Section 7.7, existing exit stair enclosures shall have not less than a 1-hr fire resistance rating.

Retain existing exception to (b), but renumber as Exception No. 3 to (b).

Add an asterisk to both (a) and (b) of 5-1.3.1 and create one appendix note A-5-1.3.1(a) and (b) to read:

A-5-1.3.1 (a) and (b) In existing buildings, walls in good repair consisting of lath and plaster, gypsum wallboard or masonry units can usually provide satisfactory protection where 1-hour fire resistance rating is required. Further evaluation might be needed where 2-hour fire resistance rating is required. Additional guidelines can be found in Appendix D of NFPA 914, Recommended Practice for Fire Protection in Historic Structures, and in the SPPE Handbook of Fire Protection Engineering.

COMMITTEE STATEMENT: The Committee Action should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23

NEGATIVE: 1

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF VOTE: 26

DE VRIES: Contrary to the committee statement, the submitter’s intent was clear (i.e., to permit mechanical equipment rooms and similar spaces within covered malls to open directly into an exit passageway). This change is needed to address a very practical problem. It is in the interest of the building owners and the manager to allow these spaces to be used in the most efficient manner possible. The proposal specifically requires that the integrity of the enclosure be maintained and thus rated, self-closing doors would be provided to protect any openings to the referenced spaces. Lastly, these spaces do not present a hazard that is significantly different than that of a stockroom of a store that opens into the same passageway.
provision for exit passageways in covered mall buildings in Chapters 24 and 25. See Proposal 101 - 506 (Log #CP751) on 24-4.4.2.5 and 25-4.4.2.5.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 11
NEGATIVE: 2
NOT RETURNED: 5 Brisse, Lister, Madrzykowski, Snack and Tomes

EXPLANATION OF NEGATIVE:

BANWARTH: This proposal would provide a special exception for mercantile occupancies to an existing general requirement in Chapter 5 which restricts the types of openings permitted in exit enclosures. In my opinion, such a change would potentially reduce the overall safety and reliability provided by exit enclosures.

My field experience as an AHJ indicates that doors to mechanical spaces and service areas are frequently subject to mechanical damage and have a poor record of being properly maintained. Frequently, they are also blocked open. This leads to self-closing doors not shutting and latching properly as intended. In many cases, such malfunctions may remain undetected by the AHJ and uncorrected by building management for months at a time. The integrity of an exit enclosure should remain highly reliable.

BUSH: Although the opening statement in the substantiation substitutes exit corridors for exit passageways, it is understood that this proposal would permit openings from adjacent service spaces and some hazardous areas which are not normally subject to human occupancy directly into an exit. In accordance with existing code provisions and standards, an exit passageway is defined as a fire protection means to a stairway. Exits passageways must remain separated from all other spaces and provide and maintain a protected way of travel. If building designs dictate that such service spaces open into a public area, those public areas should be designed, arranged, and protected in accordance with the requirements for exit access corridors and not be credited as an exit from the building. It should also be noted that action of the Chapter 5 committee rejected this concept stating that the limitations on openings in exit enclosures remain important criteria for life safety.

COMMITTEE ACTION:

AFFIRMATIVE: 23
ABSTENTION: 1
NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF ABSTENTION:

ROSENBAUM: Routing of a fire safety system within an exit enclosure provides a method to maintain the integrity of the system during a fire. However, the integrity of the enclosure must be maintained. Penetrations into a stairwell for sprinkler piping are unlimited. However, the concern of wiring not in conduit arises. Therefore, the proposal can be accepted in principle provided all wiring penetrating the enclosure is in conduit.

EXPLANATION OF ABSTENTION:

ELVOE: While I agree with the committee that the proposal, as written, must be rejected, I agree with the submitter's intent. Fire alarm wiring should be permitted to be run in two hour exit enclosures to meet the survivability requirements of the National Fire Alarm Code whether or not the fire alarm wiring only serves the devices in the enclosure, provided the fire alarm wiring is run in conduit. Penetrations meet the requirements of 6-2.3.6 and the building is sprinklered.
VOTE ON COMMITTEE ACTION:

Substantiation: This section is in conflict with Section 5-7.2 without passing through any intervening rooms or spaces other than exit discharge. The propser's language makes no allowance for corridors that lead only to a single exit where single exits are permitted by the Code.

Committee Statement: The proposed wording does not discriminate against people over 7'0" tall. I therefore am opposed to the committee's action and favor maintaining existing code text.

Committee Action: Reject.

VOTE ON COMMITTEE ACTION:

Affirmative: 24
Not Returned: 2 Behrens, Tomy

(No. #67)

MEA

101-42 - 5-1.3.3 Exception (New): Reject
Submitter: Phil Jose, Gaither, NY
Recommendation: Add an exception to 5-1.3.3 to read: Exception: Exit discharge meeting Section 5-7.2.

Substantiation: This section is in conflict with Section 5-7.2 since it does not allow for egress through the level of exit discharge per 5-7.2. Note that all occupancies permit the use of 5-7.2.

Committee Action: Reject.

Committee Statement: The exception is not needed. There is no conflict. Continuity must be to the exit discharge. The discharge through the level of exit discharge, if in accordance with 5-7.2, is "exit discharge" even though it is within the building.

Number of Committee Members Eligible to Vote: 26
Vote on Committee Action: Affirmative: 24
Not Returned: 2 Behrens, Tomy

Outside: While I agree with the submitter's substantiation that there needs to be some consistency between the model building codes and there is little justification from a fire aspect for the ceiling height, I feel reducing headroom requirements for new construction discriminates against people over 7'0" tall. I therefore am opposed to the committee's action and favor maintaining existing code text. (I recognize that current code text won't help where an individual's height exceeds 7'6", however, this will apply to far less people). As an alternative to this submission, the Code could delete all prescriptive requirements for headroom and use performance language instead.

Explanation of Abstention: Hodgens: I am abstaining from this vote because I disagree with the substantiation which indicates that the ceiling height does not have a role in the "fire aspect". I believe that the geometry of a space is a critical factor in determining the results of a fire in such space.

(No. #CP807)

101-45 - 5-1.5 Exception No. 2, 5-2.2.2.1 Exception No. 2, and 5-2.5.2 Exception No. 5): Accept

Note: The Technical Correlating Committee on Safety to Life (TAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Means of Egress (MEA), which has primary responsibility for Chapter 5, offer information on the acceptability of Chapter 28 modifying the minimum width of egress components as detailed in Proposal 101-528 (Log #CP806) for industrial equipment access walkways, platforms, ramps and stairs.

Submitter: Technical Committee on Industrial and Storage Occupancies, MEA

Recommendation: Add a second exception to 5-1.5 to read: Exception No. 2: Industrial equipment access in industrial occupancies as provided in Chapter 28.

Add a second exception to 5-2.2.1 to read: Exception No. 2: Industrial equipment access in industrial occupancies as provided in Chapter 28.

Add a fifth exception to 5-2.5.2 to read: Exception No. 5: Industrial equipment access in industrial occupancies as provided in Chapter 28.

Substantiation: Proposal 101 - 528 (Log #CP806) recommends the creation of a new 28-2.5.6 to allow industrial equipment access walkways, platforms, ramps and stairs to deviate from the some of the dimensional criteria of Chapter 5. The exceptions to Chapter 5 suggested by this proposal are needed to avoid conflicts between Code requirements. See Proposal 101 - 528 (Log #CP806).

Committee Action: Accept.

Number of Committee Members Eligible to Vote: 15
Vote on Committee Action: Affirmative: 15
Not Returned: 2 Rodante, Shaner

(No. #71)

MEA

101-44 - 5-1.5: Accept
Submitter: James K. Lathrop, Koffel Associates, Inc.
Recommendation: Revise 5-1.5 to read: 5-1.5 Headroom. Means of egress shall be designed and maintained to provide adequate headroom as provided in other sections of this Code, but in no case shall the ceiling height be less than 7 ft (2.1 m) or shall any projection from the ceiling be less than 6 ft 8 in. (2.0 m) nominal height from the floor. Headroom on stairs shall be a minimum of 5 ft 6 in. (1.7 m), and shall be measured as the vertical distance above a plane parallel to and tangent with the most forward projection of the stair tread.

Delete the exception.

Substantiation: The current requirement is more stringent than a least one of the model building codes (Uniform Building Code). Since there is little justification from a fire aspect for the ceiling height to begin with, using the lowest height permitted by U.S. model building codes would appear reasonable. With the change the exception is no longer required. The provisions for stairs have been incorporated into the paragraph without technical change. Currently the Code actually prohibits 5-2.2.2.1 from being used in a way that it says in NO CASE shall they be less than 7 ft 8 in. This should make the code more user friendly. The dimensions have been retained in 5-2.2.2.1 since many people may look there also.

Committee Action: Accept.

Number of Committee Members Eligible to Vote: 26
Vote on Committee Action: Affirmative: 22
Negative: 1
Abstention: 1
Not Returned: 2 Behrens, Tomy

Explanation of Negative: Elevation: While I agree with the submitter's substantiation that there needs to be some consistency between the model building codes and there is little justification from a fire aspect for the ceiling height, I feel reducing headroom requirements for new construction...
limited elevation changes, usually by stairs. This experience clearly justifies special attention to these situations. Finally, the falls that occur disproportionately in these situations would be especially problematic in a crowded situation such as during egress.

COMMITTEE ACTION: Accept in Principle.

Revise 5-1.6.2 as follows:

5-1.6.2* Changes in level in means of egress not more than 21 in. (53.3 cm) shall be either by a ramp or by a stair complying with the requirements of 5-2.2. The presence and location of ramped portions of walkways shall be readily apparent. The minimum tread depth of such stair shall be 13 in. (33 cm) and the presence and location of each step shall be readily apparent.

Exception: Handrails shall not be required for a single step or ramp which is part of a curb separating a sidewalk from a vehicular way.

COMMITTEE STATEMENT: The exception is better located in 5-2.2.4. This minor revision made to the submittal should satisfy the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

COMMITTEE STATEMENT: The Committee Action should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy
COMMITTEE ACTION: Accept.

COMMITTEE STATEMENT: The proposed exception would allow an existing unsafe condition to be continued in use in public buildings.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
ABSTENTION: 1
NEGATIVE: 2
NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF ABSTENTION:

ELVOVE: The submitter makes some good points, however, he does not appear to address all possible scenarios with his proposed text revision. Some refinement may make this a good proposal.

101-64 - (5-2.1.4.1): Accept

Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Means of Egress (MEA) reconsider the proposed action, as appropriate, given that this proposal was letter balloted to MEA in an expedited time frame at a later time than the other proposals under its purview.

SUBMITTER: James K. Lathrop, Koffel Associates, Inc.

RECOMMENDATION:

Revise 5-2.1.4.1 and 5-2.1.4.2 to read:

5-2.1.4.1 Any door in a means of egress shall be of the side-hinged or pivoted-swinging type. The door shall be designed and installed so that it is capable of swinging from any position to the full use of the opening in which it is installed.

Exception No. 1: No change

Exception No. 2: Former Exception No. 4

Exception No. 3: Former Exception No. 5

Exception No. 4: Doors to private garages, industrial and storage areas with an occupant load of not more than 10, when such areas contain low or ordinary hazard contents.

Exception No. 5: New 5-2.1.4.2

Exception No. 6: Former Exception No. 8

5-2.1.4.2 Doors required to be side-hinged or pivoted-swinging type shall swing in the direction of egress travel where serving a room or area with an occupant load of 50 or more.

Exception No. 1: Former Exception No. 3 to 5-2.1.4.1

Exception No. 2: Former Exception No. 2 to 5-2.1.4.1

5-2.1.4.3 Old 5-2.1.4.2 with its current exception.

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By retaining old Exception No. 2 to 5.2.1.4 as the new Exception No. 2 to new 5.2.1.4.2, there is an unnecessary reference to door swing in the new exception as it is already addressed in the base paragraph. This new exception should read "smoke barrier doors in existing health care occupancies as provided in Chapter 13."

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101-55 - (5.2.1.5.2 Exception No. 1 and A5-2.1.5.2): Accept in Principle

**SUBMITTER:** James K. Lathrop, Koffel Associates, Inc.

**RECOMMENDATION:** Revise Exception No. 1 to 5.2.1.5.2 as follows:

(1) delete part (a), renumber (b) through (e) as (a) through (d)

(2) add a new (e) to read:

(e) Doors not permitting reentry shall be provided with a sign on the stair side indicating the direction to, and location of, the two closest doors permitting reentry or exit.

Delete references to this exception in the occupancy chapters that currently reference it.

Add the following sentence to current appendix note A5-2.1.5.2:

"It is intended that this apply only to enclosed exit stairs and not to exterior stair or to smokeproof enclosures."

**SUBSTANTIATION:** The provisions of this exception appear to be equally valid for all occupancies. No one has been able to provide a reasonable explanation of how this is occupancy oriented. This proposal will make the exception usable in all occupancies.

The second part of the proposal will require a sign to let people know where they can go to re-enter the building. Currently one would have to search up or down to find the door marked as permitting reentry.

The addition to the appendix note is to clarify the application of the paragraphs. It applies to stair enclosures only. If this were to apply to exterior stairs and to all smokeproof enclosures it would create significant security problems.

**COMMITTEE ACTION:** Accept in Principle.

Revise Exception No. 1 to 5.2.1.5.2 as follows:

(1) delete subpart (a), renumber subparts (b) through (e) as subparts (a) through (d).

(2) add a new subpart (e) to read:

(e) Doors not permitting reentry shall be provided with a sign on the stair side indicating the location of the nearest door, in each direction of travel, permitting reentry or exit.

Delete references to this exception in the occupancy chapters that currently reference it: 12-2.2.8 second sentence, 15-2.2.2.3, 17-2.2.2.3, 24-2.2.2.3, 26-2.2.2.3.

Add the following sentence to the beginning of current appendix note A5-2.1.5.2:

"It is intended that the reentry provisions apply only to enclosed exit stairs, not to outside stairs."

**COMMITTEE STATEMENT:** The Committee Action accomplishes that which the submitter requested. The appendix sentence has been reordered to explain that the requirement applies to exit stair enclosures. This should meet the submitter’s intent.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 22

**NOT RETURNED:** 2 Behrens, Tomy

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101-57 - (5.2.1.9): Accept in Principle

**SUBMITTER:** Joseph H. Versteeg, Torrington, CT

**RECOMMENDATION:** Add the following two sentences to the end of current text of paragraph 5.2.1.9:

"On the egress side of each door, there shall be a readily visible, durable sign that reads 'DOOR CAN BE OPENED MANUALLY DURING A POWER FAILURE BY PUSHING.' The sign shall be in letters not less than 1 in. (2.5 cm) high on a contrasting background."

**SUBSTANTIATION:** The Code establishes specific criteria to ensure the reliable operation of power-operated doors in the emergency break-out mode, however it fails to provide a medium for informing the user that such a feature exists. The mandate for such a sign is in line with the criteria governing locks within 5-2.1.5.1 Exception No. 2 and Delayed Egress Locks within 5-2.1.6.1(d).

**COMMITTEE ACTION:** Accept in Principle.

Add the following two sentences to the end of current text of paragraph 5.2.1.9:

"On the egress side of each door, there shall be a readily visible, durable sign that reads 'IN EMERGENCY PUSH TO OPEN'. The sign shall be in letters not less than 1 in. (2.5 cm) high on a contrasting background."

To Exception No. 1 to 5.2.1.9 add: "The required sign shall state 'IN EMERGENCY SLIDE TO OPEN'."

**COMMITTEE STATEMENT:** ANSI A156.10 for pedestrian power-operated doors dictates the above language for the sign. Exception No. 1, applicable to sliding power-operated doors needs wording for a similar sign. This should meet the submitter’s intent.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 24

**NOT RETURNED:** 2 Behrens, Tomy

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101-56 - (5.2.1.6.1(b)): Reject

**SUBMITTER:** James C. Roberts, NC Dept. of Insurance

**RECOMMENDATION:** Revise 5.2.1.6.1(b) to read (new text is underlined for clarity):

"(b) Unlock upon loss of power controlling the lock or locking mechanism, or upon disengagement of the automatic fire detection system or the means of sprinkler system supervision, and"

**SUBSTANTIATION:** Use of the Special Locking Arrangement requires the building to be protected by an approved, automatic fire detection or sprinkler system. When this vital protection is disabled for repair, maintenance, etc., the Code should require that the delayed egress locks immediately unlock. This safeguard can be easily arranged as a feature of the automatic fire detection system or sprinkler supervisory system. One way is simply to use a normally energized relay as the interface to the locking system so that shutdown of the fire detection/sprinkler supervisory system results in immediate door unlock for egress.

**COMMITTEE ACTION:** Reject

**COMMITTEE STATEMENT:** The submitter has provided no anecdotal data on problems with these devices. The committee is unsure what the submitter means by the term "disengagement of the automatic fire detection system". When is the threshold of "disengagement" reached?

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 23

**ABSTENTION:** 1

**NOT RETURNED:** 2 Behrens, Tomy

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101-58 - (5.2.1.9 Exception No. 2): Accept in Principle

**SUBMITTER:** Richard L. Reed, Access Technologies, Division of the Stanley Works

**RECOMMENDATION:** Revise Exception No. 2 to 5.2.1.9 as follows:

Exception No. 2: For a bi-parting sliding door in the emergency break out mode, a door leaf located within a multiple leaf opening shall be exempted from the requirement of 52 inches (131 cm) single leaf opening requirement of 5.2.1.5.1 if a minimum of 32 inches (81 cm) clear opening is provided by all leaves broken out.

**SUBSTANTIATION:** Biparting and telescoping power operated sliding doors may have 2, 3, or 4 leaves or panels moving in synchronous action, providing more than 32 inches clear opening in normal operation. However, any single leaf of such a door system may be less than 30 inches. This should be allowed as long as the clear opening is at least 32 inches when all leaves are broken out.

**COMMITTEE ACTION:** Accept in Principle.

Retain current Exception No. 2 and insert the submitter's exception as a new Exception No. 3 (renumbering current Exception No. 3 and 4 to become Exception Nos. 4 and 5) so as to read: Exception No. 3: For a bi-parting sliding door in the emergency break out mode, a door leaf located within a multiple leaf opening shall be exempted from the minimum 32 in. (81 cm) single leaf requirement of 5.2.1.5.1 if a minimum of 32 in. (81 cm) clear opening is provided by all leaves broken out.
COMMITTEE STATEMENT: Submitter's replacement language for Exception No. 2 would have lost an important exception for doors other than biparting. Thus, the submitter's language has been added as a new provision. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

COMMENT ON AFFIRMATIVE:
BUSH: The intent of this proposal may be further explained through the addition of an appendix note as follows:
"It is the intent of this exception to require each half of a biparting sliding door to provide a minimum 32 in. clear opening in the emergency break out mode with no more than one releasing operation. There is no limit to the number of leaves in each half of that door."

COMMITTEE STATEMENT: The submitter's claim of inconsistency with other Code provisions is not accurate. Safe stairs are critical to safe egress under emergencies. To remove the prescriptive requirements from the Life Safety Code would do the users a disservice. The creation of separate stair standards would make it more difficult for users to reference all the information needed.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-59 - (5-2.1.15 (New)): Accept in Principle
SUBMITTER: Richard Hudnut, McKeon Rolling Steel Door
RECOMMENDATION: Add a new 5-2.1.15 to read:
5-2.1.15 Doors in Horizontal or Vertical Rolling Partitions. Swinging doors in horizontal or vertical rolling partitions complying with the following shall be permitted in a means of egress:

a) The door or doors shall be in accordance with 5-2.1.4.

b) The partition in which the doors are mounted shall comply with the applicable fire protection rating and shall close upon smoke detection or power failure at a speed of not more than 9 in. (23 cm) per second or less than 6 in. (15 cm) per second.

c) The doors mounted in the partition shall be self- or automatically closing in accordance with 5-2.1.8.

SUBSTANTIATION: Adoption of this proposal will result in the recognition of a new product line that essentially already complies with the code. It is unique enough, however, that a functional description is necessary.

COMMITTEE ACTION: Accept in Principle.

Do not create a new 5-2.1.15. Rather, add the following to the end of current appendix item A-5-2.1.4.1:

"Swinging doors in horizontal or vertical rolling partitions complying with the following should be permitted in a means of egress where:

a) The door or doors comply with 5-2.1.4.

b) The partition in which the doors are mounted complies with the applicable fire protection rating and closes upon smoke detection or power failure at a speed of not more than 9 in. (23 cm) per second or less than 6 in. (15 cm) per second.

c) The doors mounted in the partition shall be self- or automatically closing in accordance with 5-2.1.8.

COMMITTEE STATEMENT: The functional description is not needed in the main body of the Code because (as the submitter states in his substantiation) the product line complies with current Code requirements. However, the above wording should be helpful as appendix material. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-60 - (5-2.2.3.2 Exception No. 2 (New)): Accept in Principle
SUBMITTER: Technical Committee on Residential Occupancies,
RECOMMENDATION: Add a second exception to 5-2.2.3.2 to read:
Exception No. 2: In residential occupancies as permitted in Chapters 16 through 21, winders shall be permitted to remain in use if they have a minimum tread depth of 6 in. (15.2 cm) and a minimum depth of tread of 11 in. (27.9 cm) at a point 12 in. (30.5 cm) from the narrowest edge. Exception: Existing winders shall be permitted to remain in use if they have a minimum tread depth of 6 in. (15.2 cm) and a minimum depth of tread of 9 in. (22.9 cm) at a point 12 in. (30.5 cm) from the narrowest edge.

SUBSTANTIATION: Current wording addresses differing requirements for both new construction and existing conditions. The proposal places the requirements for existing conditions in an exception for purposes of uniformity with other sections that address differing criteria for new and existing.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
ABSTENTION: 1
NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF ABSTENTION:
HODGENS: I am abstaining from this vote because I do not believe that winders should be permitted in a required means of egress. Winders present an extremely difficult path to follow when visibility is poor due to smoke and other conditions created by a fire.
101-65 - (5-2.2.3.2 and Exception No. 2 (New)): Accept
SUBMITTER: Technical Committee on Means of Egress.
RECOMMENDATION: Further revise 5.2.2.3.2 from that done by
Proposal 101 - 62 (Log #CP29) to read:
5-2.2.3.2 Each new stair, platform, and landing used in buildings
more than three stories in height and in new buildings required by
this Code to be of Type I or Type II construction shall be of
noncombustible material throughout.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-66 - (5-2.2.4.2): Accept in Principle
SUBMITTER: Joseph H. Versteeg, Torrington, CT
RECOMMENDATION: Reword current text of 5.2.2.4.2 as follows:
5-2.2.4.2* Handrails. Each new stair and each new ramp with
a slope exceeding 1 in 20 shall have handrails on both sides.
In addition, handrails shall be provided within 50 in. (76 cm) of all
portions of the required egress width of stairs. The required egress
width shall be along the natural path of travel. Existing stairs,
existing ramps, stairs within dwelling units or within guest rooms,
and ramps within dwelling units or within guest rooms shall have
a handrail on at least one side. (See also 5-2.2.4.5.)
Exception: On existing stairs, handrails shall be provided within 44
in. (112 cm) of all portions of the required egress width of stairs.

COMMITTEE ACTION: Accept in Principle.
Proposal 101 - 64 - (Log #CP225) as follows by moving wording from the
base paragraph to a new exception:
5-2.2.4.2* Handrails. Each new stair and each new ramp with
a slope exceeding 1 in 20 shall have handrails on both sides.
In addition, handrails shall be provided within 50 in. (76
cm) of all portions of the required egress width of stairs. The required egress
width shall be along the natural path of travel. Existing stairs,
existing ramps, stairs within dwelling units or within guest rooms,
and ramps within dwelling units or within guest rooms shall have
a handrail on at least one side. (See also 5-2.2.4.5.)

COMMITTEE STATEMENT: Ramps are defined as being steeper
than 1 in 20 so the words "with a slope exceeding 1 in 20" have been
deleted. Editorially, the Chapter 3 definition will be made to read
the same as that in Chapter 5. This should meet the submitter's
intention.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-67 - (5-2.2.4.2 and Exception No. 2 (New)): Accept
SUBMITTER: Technical Committee on Means of Egress.
RECOMMENDATION: Further revise 5.2.2.4.2 from that done by
Proposal 101 - 65 (Log #350) as follows by moving wording from the
base paragraph to a new exception:
5-2.2.4.2* Handrails. Each new stair and each new ramp with
a slope exceeding 1 in 20 shall have handrails on both sides, in addition, handrails shall be provided within 30 in. (76
cm) of all portions of the required egress width of stairs. The required egress width shall be along the natural path of travel. Existing stairs, existing ramps, stairs within dwelling units or within guest rooms, and ramps within dwelling units or within guest rooms shall have a handrail on at least one side. (See also 5-2.2.4.5.)

COMMITTEE STATEMENT: The Committee Action on Proposal
101-71 (Log #350) should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy
VOTE ON COMMITTEE ACTION:

SUBMITTER: Jake Pauls, Building Use & Safety Institute

RECOMMENDATION: Add new text to 5-2.2.4.5 (b) to read as follows:

(b)* New handrails shall provide a clearance of at least 1 1/2 in. (3.8 cm) between the handrail and the wall to which it is fastened. Surfaces within 3 in. (7.6 cm) of handrails shall have 1/8 in. (0.3 cm) minimum radius.

SUBSTANTIATION: Rather than leave to the Appendix the recommendation that adjacent surfaces are smooth, this spells it out using the 1/8 in. minimum radius used in (c). The 3 in. is somewhat arbitrary for the time being but takes into account a grab response for the handrail which does not accurately land the hand on the rail before contact is made with adjacent surfaces. See also a related proposal for the appendix note.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The proposed wording would require a radius, even for a wall that is smooth. The enforcement of such language would be difficult. The 3 in. criterion is arbitrary and probably excessive. Additional substantiation is needed.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-68 - (5-2.2.4.5(b)): Reject

101-69 - (5-2.2.4.5(c)) Exception No. 2 (New): Accept

SUBMITTER: James K. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Add a second exception to 5-2.2.4.5 (c) to read as follows:

Exception No. 2 to (c): Handrail brackets or balusters attached to the bottom surface of the handrail which do not project horizontally beyond the sides of the handrail within 1 in. (25 mm) of the bottom of the handrail and which have edges with 1/8 in. (3.2 mm) minimum radius, shall not be considered to be obstructions to graspability.

SUBSTANTIATION: This language which has also been proposed for CABO/ANSI A117.1, is based on a new exception (accepted in 1994) in the BOCA National Building Code (1022.2). It clarifies what kind of necessary attachments to the handrail constitute permissible, minor interference to continuous graspability.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-70 - (5-2.2.4.5(e)): Accept

SUBMITTER: Jake Pauls, Building Use & Safety Institute

RECOMMENDATION: Revise 5-2.2.4.5 (e) as follows:

(e) New handrails that are not continuous between flights shall extend horizontally, at the required height, at least 12 in. (30.5 cm) beyond the top riser and continue to slope for a depth of one tread beyond the bottom riser where a guard or wall exists.

SUBSTANTIATION: The continuation of the handrail beyond the bottom riser is independent of whether a guard or wall exists. There appears to have been an error here when the change was made to the previous edition which referred to a guard or wall in relation to a (no longer required) horizontal extension at the base of the flight.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-71 - (5-2.2.4.5(f) Exception No. 3 (New)): Accept in Principle

SUBMITTER: Joseph H. Versteeg, Torrington, CT

RECOMMENDATION: Add a third exception to 5-2.2.4.5 (f) as follows:

Exception No. 3 to (f): Approved existing open guards.

SUBSTANTIATION: Section 5-2.2.4.1 requires new stairs to be provided with a 42 in. high guard and by exception permits existing handrails meeting the requirements of 5-2.2.4.5 to be continued in use. In prior Code editions, the area between a handrail on the open side of a stair and the walking surface of the stair was subject to the requirements for guards. Additionally, the spacing requirements for guards have always contained the exception for "Approved existing guards." As currently worded, the requirements of subpart 5-2.2.4.5(f) focus on new handrails and mandate 4 in. spacing requirements contained within prior editions of the Code.

COMMITTEE ACTION: Accept in Principle.

In 5-2.2.4.1 delete the Exception.
Delete 5-2.2.4.5(f) and its exceptions.
In 5-2.2.4.6 add a new Exception No. 3 to (b) to read:
Exception No. 3 to (b): Existing guards on existing stairs shall be not less than 30 in. (76 cm) high.
Add an appendix item A-5-2.2.4.6 Exception No. 3 to (b) to read:
A-5-2.2.4.6 Exception No. 3 to (b) This reduction in required height applies only to the stair, not to the landings.

COMMITTEE STATEMENT: The Exception has been moved to the paragraph addressing height criterion where it will be properly placed. The deletion of 5-2.2.4.5(f) was made because the subject is covered by 5-2.2.4.6(c). This results in better organization, but no technical change. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-72 - (5-2.2.4.6(c)): Reject

SUBMITTER: James K. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Revise 5-2.2.4.6 (c) to read:

(c) Open guards shall have intermediate rails or an ornamental pattern such that a sphere 4 in. (10.1 cm) in diameter cannot pass through any opening up to a height of 34 in. (86 cm).

Exceptions to remain.

SUBSTANTIATION: The purpose of the 4 in. sphere rule was to protect small children from falling through the guard. This will provide that protection up to 34 in. (handrail height) but allow more space above the handrail up to the top of the guard. This will more than adequately take care of the children while allowing flexibility in design, especially on stairs.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The submitter has not justified the choice of 34 in. as the height at which the guard opening protection can be relaxed. The data in A-5-2.2.4.5(a) Exception No. 3 appears to show that this proposed change is too lenient to assure continued safety.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-73 - (5-2.2.4.5(c)) New: Accept in Principle

SUBMITTER: Jake Pauls, Building Use & Safety Institute

RECOMMENDATION: Add new 5-2.2.5.4 to read as follows:

5-2.2.5.4 Water Accumulation. Outside stairs and landings shall be designed to prevent water from accumulating on their surfaces.

SUBSTANTIATION: This parallels an existing requirement for ramps which makes equal sense for outside stairs. Note that adequate drainage can be achieved within the 1-in. 48 slope limit set by 5-2.2.2.2.

COMMITTEE ACTION: Accept in Principle.

Add new 5-2.2.5.4 to read as follows:

5-2.2.5.4 Water Accumulation. Outside stairs and landings shall be designed to minimize water accumulation on their surfaces.

Add an appendix note to read:
A-5-2.2.5.4 (See A-5-2.2.2.2.)
To the end of current A-5-2.2.2.2 add: "Providing a pitch of 1/8 to 1/4 in. per ft will aid the shedding of water from a nominally horizontal surface."

COMMITTEE STATEMENT: The Committee Action accomplishes that which the submitter requested. Also, it adds appendix material to explain further the concept. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy
101- 74: (5-2.2.5.4 (New)): Accept in Principle

SUBMITTER: Gregory J. Cahalin, Exit Seminars

RECOMMENDATION: Add a new 5-2.2.5.4 to read:

5-2.2.5.4 Openness. Outside stairs shall be at least 50 percent open on one side and shall be arranged to prevent the accumulation of smoke.

SUBSTANTIATION: The addition defines the minimum openness required for outside stairs. This provision is correlation with the provisions found in Section 5-5.3 for exterior exit access.

COMMITTEE ACTION: Accept in Principle.

Add a new 5-2.2.5.4 to read:

5-2.2.5.4 Openness. Outside stairs shall be at least 50 percent open on one side and shall be arranged to restrict the accumulation of smoke.

COMMITTEE STATEMENT: The Committee Action does what the submitter requested but changes the word "prevent" to "restrict" because preventing the accumulation of smoke would be too difficult to assure. Restricting the accumulation of smoke is accomplishable. This should meet most of the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

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101- 75 - (5-2.2.6.6): Accept

SUBMITTER: Technical Committee on Means of Egress

RECOMMENDATION: Revise 5-2.2.6.6 to read:

5-2.2.6.6* Signs. Stairs serving four or more stories shall be provided with signage...

SUBSTANTIATION: Coordination with the criteria at which the stairwell reentry provisions of 5-2.1.5.2 become applicable.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

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101- 76 - (5-2.2.6.7, 5-2.2.6.6, 5-7.5 and 5-10.4.2 (New)): Accept in Principle in Part

SUBMITTER: James Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Add a new 5-2.2.6.7 to read:

5-2.2.6.7 Egress Direction Signs. Wherever an enclosed stair requires travel in an upward direction to reach the level of exit discharge, signs with directional indicators indicating the direction to the level of exit discharge shall be provided at each floor level landing. Such sign shall be readily visible when the door is in the open or closed position.

Exception No. 1: Where signs required by 5-2.2.6.6 are provided.

Exception No. 2: Stairs which extend not more than 1 story below the level of exit discharge where the exit discharge is clearly obvious.

Also revise the title of 5-2.9.6 to "Stair Identification Signs".

Add a new 5-7.5 to read:

5-7.5 Signs. See 5-2.2.6.6 and 5-2.2.6.7.

Renumber the current 5-7.5 to 5-7.6.

RECOMMENDATION:

Add a new 5-10.4.2 to read:

5-10.4.2 Exit stairs shall be provided with signs as required by 5-2.2.6.6 and 5-2.2.6.7.

Exception No. 1: Where signs required by 5-2.2.6.6 are provided.

Exception No. 2: Stairs which extend not more than 1 story below the level of exit discharge where the exit discharge is clearly obvious.

Also revise the title of 5-2.9.6 to "Stair Identification Signs".

Add a new 5-7.5 to read:

5-7.5 Signs. See 5-2.2.6.6 and 5-2.2.6.7.

Renumber the current 5-7.5 to 5-7.6.

COMMITTEE STATEMENT: Most of the submitter's recommended text was accepted with additional editorial changes made for clarity. The submitter's recommended change to 5-10.4.2 was not made because it would unjustifiably impose other Section 5-10 criteria on these signs. This should meet most of the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

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101- 77 - (5-2.3.13 and 31-1.3.10): Accept

SUBMITTER: Technical Committee on Means of Egress

RECOMMENDATION: Move 31-1.3.10 to become an additional sentence to existing 5-2.3.13 to read as follows:

5-2.3.13 Testing. Before the mechanical equipment is accepted by the authority having jurisdiction, it shall be tested to confirm that the mechanical equipment is in service and operating in compliance with these requirements. 31-1.3.10 Smokeproof Enclosures and Pressurized Spaces: Before mechanical equipment is accepted by the authority having jurisdiction, it shall be tested to confirm that such equipment is in service and operating in compliance with the Code. All operating parts of the system shall be tested semianually by approved personnel, and a log shall be kept of the tests.

SUBSTANTIATION: The proposal editorially moves Section 31-1 material to the core chapters (1 through 7) as directed by the Technical Correlating Committee on Safety to Life.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 25

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23

ABSTENTION: 1

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF ABSTENTION:

HODGENS: Section as amended is confusing and appears to be redundant.

---

101- 78 - (5-2.4.2.1): Accept

SUBMITTER: James K. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Revise 5-2.4.2.1 to read:

5-2.4.2.1 Every fire compartment for which credit is allowed in connection with a horizontal exit shall have, in addition to the horizontal exit or exits, at least one exit, but not less than 50% of the required number and capacity of exits, that is not a horizontal exit. Any fire compartment not having an exit leading outside shall be considered as part of an adjoining compartment with an exit leading to the outside.

Exception: In health care occupancies as provided in Chapters 12 and 13, and in detention and correctional occupancies as provided in Chapters 14 and 15.

SUBSTANTIATION: The purpose of this proposal is two-fold. Currently there is a legal term in the Code for horizontal exit, which is the horizontal exit to a horizontal exit. The proposal simplifies this with the tabular reference definition, without changing the technical requirements. The second purpose of this proposal coordinates this paragraph with 5-2.4.1. It was recently pointed out that although 5-2.4.1 requires horizontal exits to be restricted to 50% by 5-2.4.1 for the building, it is not limited to 50% for the fire compartments that are being considered. It has been traditionally believed and applied that the 50% rule applied to each fire compartment not just to the building. It is critical to assure that horizontal exits are not overly relied upon with an excessive unbalance that could occur in a large building.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The door will remain open longer if it swings against the direction of travel because it takes longer to pull the door open, step through the opening, and close the door. The proposed text would create an inconsistency with the requirement for door swing in exit enclosures.

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

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RECOMMENDATION: Add two exceptions to 5-2.5.3.3 to read:

Exception No. 1: Curved ramps where the smallest radius is not

Exception No. 2: Direction of door swing in corridors less than 6 ft

---

COMMITTEE ACTION: Accept.
COMMITTEE STATEMENT: The Committee Action does not add an exception to 5-2.5.3.3 to read:

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

---

RECOMMENDATION: Add a fifth exception to 5-2.5.2 as follows:

---

COMMITTEE ACTION: Accept.
COMMITTEE STATEMENT: The Committee Action does not add an exception to 5-2.5.3.3 to read:

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

---

RECOMMENDATION: Add a fifth exception to 5-2.5.2 as follows:

---

COMMITTEE ACTION: Accept.
COMMITTEE STATEMENT: The Committee Action does not add an exception to 5-2.5.3.3 to read:

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

---

RECOMMENDATION: Add a fifth exception to 5-2.5.2 as follows:

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COMMITTEE ACTION: Accept.
COMMITTEE STATEMENT: The Committee Action does not add an exception to 5-2.5.3.3 to read:

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy
SUBSTANTIATION: This change will clarify who should determine that it is impractical to install outside stairs.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

(Log #CP217) MEA

101-85 - (5-2.8.1.4 and 5-2.8.1.2 Exception (New)): Accept

SUBMITTER: Technical Committee on Means of Egress

RECOMMENDATION: Relocate 5-2.8.1.4 (applied number 5-2.8.1.5 through 5-2.8.1.7 as necessary) to become an exception to 5-2.8.1.2; and revise 5-2.8.1.2 to accommodate the new exception so as to read:

5-2.8.1.2 Fire escape stairs shall not constitute any of the required means of egress in new buildings.

5-2.8.1.4 Exception: Fire escape stairs shall be permitted in existing buildings only as provided for in the applicable existing occupancy chapters but shall not constitute more than 50 percent of the required means of egress.

SUBSTANTIATION: Currently 5-2.8.1.4 addresses requirements for an existing condition. The proposal moves the requirement for this existing condition to an exception for purposes of uniformity with other sections that address differing criteria for new and existing.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

(Log #CP206) MFA

101-86 - (5-2.9.1(c) and (d)): Accept

SUBMITTER: Technical Committee on Means of Egress

RECOMMENDATION: Revise 5-2.9.1(c) and (d) to read:

(c) To provide a means of egress from towers and elevated platforms around machinery or similar spaces subject to occupancy by only able-bodied adults totaling no more than three in number no more than three persons all capable of using the ladder.

(d) To provide a secondary means of egress from boiler rooms or similar spaces subject to occupancy by only able-bodied adults totaling no more than three persons all capable of using the ladder.

SUBSTANTIATION: The proposal deletes this potentially offensive 'able-bodied persons' limitation and substitutes a performance requirement for capability to use the ladder.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

(Log #103) MEA

101-87 - (5-2.9.2 Exception No. 2 and No. 3): Accept

SUBMITTER: Phil lose, VA Regional Division Office

RECOMMENDATION: Delete Exception No. 2 and No. 3 and add the following to base paragraph 5-2.9.2:

"Combustible ladders and ladders installed with a pitch of less than 72° shall not be permitted."

SUBSTANTIATION: As currently written these two exceptions are meaningless. In fact they are prohibitions on use, not exceptions to the requirements in the base paragraph. The use of an exception is optional. Therefore, I can ignore them. The proposed rewrite resolves this issue.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

( Log #CP207) MFA

101-88 - (5-2.11.1(c) and (d)): Accept

SUBMITTER: Technical Committee on Means of Egress

RECOMMENDATION: Revise 5-2.11.1(c) and (d) to read:

(c) To provide a means of egress from towers and elevated platforms around machinery or similar spaces subject to occupancy by only able-bodied adults totaling no more than three persons all capable of using the alternating tread device.

(d) To provide a secondary means of egress from boiler rooms or similar spaces subject to occupancy by only able-bodied adults totaling no more than three persons all capable of using the alternating tread device.

SUBSTANTIATION: The proposal deletes this potentially offensive 'able-bodied persons' limitation and substitutes a performance requirement for capability to use the alternating tread device.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

(Log #154) MFA

101-89 - (5-2.12.2.4): Accept

SUBMITTER: John F. Kite, Building and Fire Research Lab, NIST

RECOMMENDATION: Replace 5-2.12.2.4 and its exceptions with the following:

5-2.12.2.4 Where an elevator is used to provide access from an area of refuge to a public way, as required by 5-2.12.2.2, the elevator shall be in accordance with 5-2.15.

SUBSTANTIATION: This proposed change supports other proposed changes to Chapter 5 of NFPA 101 that allow an elevator to be a component of a means of egress.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 25

NEGATIVE: 1

( Log #155) MFA

EXPLANATION OF NEGATIVE:

HODGENS: While I understand and appreciate the extensive research being conducted to improve the safety of elevators during fires particularly as this research relates to the egress of the mobility impaired, I must indicate my concern with approving elevators for use as a secondary means of egress. Based upon documented New York City and national fire experiences, elevators have failed at an unacceptable rate. Until technological changes are documented and empirical tests substantiated the proposed change, I believe it would be dangerous and premature to approve such use of elevators as a means of egress.

COMMENTS ON AFFIRMATIVE:

MENUZ: UL believes that additional information to the occupants is required before people will readily use elevators in the means of egress. This should be established when elevators are permitted to serve up to 50 percent of the occupant load. UL acknowledges the human behavioral study that NIST performed related to this topic, but it is not likely that after all the training that the public has had not to use elevators during an evacuation, that suddenly they will use it if we tell them to.

(Log #155) MFA

101-90 - (5-2.13 (New)): Accept in Principle

Note: The Technical Correlating Committee on Safety to Life (TAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Means of Egress (MEA) reconsider its proposed requirements and text on using elevators in means of egress to address concerns that have been raised by the Life Safety Technical Committees on Health Care Occupancies (HEA), Residential Occupancies (RES), and Mercantile and Business Occupancies (MER).

The correlating committee notes that official public comments will be submitted on the subject by HEA and MER. The correlating committee also directs that the provisions of proposed 5-2.13.12 on earthquake protection (i.e., use of words "seismic zones 3 or greater") be correlated with NFPA 13 and other recognized standards on the subject.

SUBMITTER: John H. Kite, Building and Fire Research Lab, NIST

RECOMMENDATION: Add a new subsection 5-2.13 on elevators as follows:

5-2.13 Elevators

5-2.13.1 General. Elevators used as a component in the means of egress shall conform to the requirements of this subsection.

5-2.13.2 Elevator Capacity. The capacity of an elevator evacuation system is the capacity of the elevator lobby or the sum of the capacities of the elevator cars used for egress that serve the lobby, whichever is less.

5-2.13.3 Elevator Lobby. On every floor served by the elevator, there shall be an elevator lobby that meets the following requirements:

(a) the barriers forming the elevator lobby shall have a minimum fire resistance rating of 1 hour, and

(b) the lobby shall have one wheelchair space of 30 in. by 48 in. (76 cm x 122 cm) for each 200 occupants or portion thereof, based on the occupant load served by an elevator evacuation system, and

(c) the capacity of the elevator lobby shall be the number of wheelchair spaces plus one person capable of walking for each remaining 3 sq ft of lobby floor area.

Exception to (b): On unoccupied floors, the elevator lobby shall have a minimum floor area of 9 sq ft and a minimum width of 18 inches.

5-2.13.4 Elevator Lobby Doors. Elevator lobby doors shall have a minimum fire protection rating of 1 hour, and elevator lobby doors shall be:

(a) self closing doors or automatic closing doors in accordance with 5-2.1.8, or
NFPA 101 — F96 ROP

(b) power-operated doors in accordance with 5-2.1.9.

Exception: Elevators with lobbies that are more than 1,000 sq ft (93 sq m) in size and are created by horizontal exits meeting the requirements of 5-2.4.

5-2.13.5 Door Activation: The elevator lobby doors shall close in response to a signal from a smoke detector in or near an elevator lobby. Closing of lobby doors in response to a signal from the building fire alarm system shall be permitted. Closing of one elevator lobby door by a signal from a smoke detector or a signal from the building fire alarm system shall result in closing of all elevator lobby doors serving that elevator evacuation system.

Exception: Elevator doors that are more than 1,000 sq ft (93 sq m) in size and are created by horizontal exits meeting the requirements of 5-2.4.

5-2.13.6 Smoke Protection. The elevator lobby, elevator shaft, and elevator machine room shall meet the pressurization requirements of 5-2.3.9. Pressurization shall be activated by the door activation signals of 5-2.13.5. Pressurization will be deactivated by signals from 135°F fixed temperature heat detectors located in elevator lobbies or machine rooms.

Exception No. 1: Elevators with lobbies that are more than 1,000 sq ft (93 sq m) in size and are created by horizontal exits meeting the requirements of 5-2.4.

Exception No. 3: Elevators in buildings that are protected throughout by a building sprinkler system.

5-2.13.7* Water Protection. Building elements shall be used to restrict water exposure of elevator equipment.

5-2.13.8* Automatic Elevator Control. Elevator communications, and elevator machine room cooling shall be supplied by both normal and standby power. Wiring for this power shall be located and protected to ensure a minimum of 1 hour of operation in the event of fire.

5-2.13.9* Communications. Two-way communication systems shall be provided between the elevator lobby, elevator control, and between elevator cars and a central control point. Communications wiring shall be protected to ensure a minimum of 1 hour of operation in the event of fire.

5-2.13.10 Elevator Operation. Elevator operation shall be:

(a)* fire fighter service as provided in ASME/ANSI A17.1, Safety Code for Elevators and Escalators, or

(b)* automatic elevator control in accordance with the requirements of ASME/ANSI A17.1, Safety Code Elevators and Escalators.

5-2.13.11 Elevator Capacity. Elevator capacity is determined by the number of people that can be carried safely in the elevator car. The number of people that can be carried safely in an elevator car is determined by the number of car loads per floor that can be moved from the fire floor, the two floors above the fire floor, and the floor below the fire floor within 15 minutes.

5-2.13.12 All elevator lobbies shall be served by more than one elevator car that meets the requirements of 5-2.13.5.

Exception: Elevator lobby that is served by only one elevator car, and the elevator evacuation system has a program of scheduled maintenance turnaround or low building activity and of unscheduled maintenance within 24 hours of breakdown.

5-2.13.13 Earthquake Protection. In seismic zones 3 or greater, elevator equipment shall be in accordance with the seismic requirements of Part XXIV of ASME A17.1.

A-5-2.13.6 Design Information about elevator smoke control systems is in NFPA 92A Recommended Practice for Smoke-Control Systems and the ASHRAE/SPFE publication Design of Smoke Management Systems.

A-5-2.13.7 One or more of the following approaches can be used to restrict water exposure of elevator equipment:

(a) A combination of sealed elevator lobby doors, sloped floors, floor drains and sealing of elevator shaft walls.

(b) The elevator lobby mounted on the building exterior that normally operates in the elements plus seals on the elevator lobby doors.

(c) The elevator shaft separated from the building at each floor by an exterior elevator lobby designed to prevent water entry into the elevator shaft.

Information gained from ongoing research concerning water flow and elevator evacuation can lead to the development of water resistant or water protected elevator equipment specifically for fire applications.

Such equipment should be used only with the building elements (sealed elevator lobby doors, floor drains, etc.) to which it is developed. Further information is available from the NIST publication Feasibility of Fire Evacuation by Elevators at FAA Air Traffic Control Towers.

A-5-2.13.8 Cooling equipment dedicated to the elevator machine room can be used to minimize requirements for standby power.

A-5-2.13.9 Elevator lobby doors and a central control point can be by telephone or intercom. Auditory alarm should be designed so that they do not interfere with people talking on a public address system.

A-5-2.13.10(a) The elevator(s) will be taken out of service and operated by emergency service personnel.

A-5-2.13.10(b) For elevators that are used as a component in the means of egress; the elevator lobby, elevator shaft and machine room are protected from the effects of fire. Thus the elevator is operating in an environment free from fire. There is no technical reason why an elevator so protected cannot continue to operate normally provided that the elevator is not taken out of service. To protect elevators from water damage, it may be necessary to activate the elevator recall should be activated by 135°F fixed temperature heat detectors in place of the smoke detectors normally required in Section 211 of ASME ANSI A17.1.

Development of special automatic elevator operation for fire evacuation needs the combined effort of the elevator industry, the fire protection community, the fire services and other elements of society. Operation of such an automatic elevator for means of egress could include importing signals from the fire alarm system. Preventing cars from stopping at floors where the elevator lobby is untenable, preventing full cars from stopping to pick up passengers, and providing priority evacuation of the fire floor, of the two floors above the fire floor, and of the floor below the fire floor. The abilities to import signals from other systems, and to adapt evacuation strategy to the fire situation could be incorporated.

Development of such systems should include human factors considerations. Human factors concerned with elevator evacuation are discussed by Groener and Levin's paper Human Factors Considerations for The Potential Use of Elevators for Fire Evacuation of FAA Air Traffic Control Towers.

A-5-2.13.11 The time to move an elevator car load of people depends on the distance traveled, the car speed, the time to load and unload elevator passengers. After waiting for the emergency service personnel to start using elevators for evacuation, the times to evacuate the fire floor and other floors in the vicinity of the fire floor are listed in Table A-5-2.13.11.

A-5-2.13.11(a) A concern with normal operation for evacuation is that a full elevator car might stop at many floors on its way to the exit floor. A capacity of 1 car load per floor is appropriate for elevators under normal operation that serve three floors or less. Normal operation is appropriate when the total number of people evacuated by elevator is two car loads or less. Otherwise, the capacity of elevator evacuation under normal elevator operation should be supported by people movement calculations that incorporate the effect of the car stopping at floors on its way to the exit floor.

Development of a special automatic elevator operation discussed in A-5-2.13.11(b), could result in increased capacity. For some elevator configurations with automatic control that prevents full cars from stopping to pick up passengers, and provides priority evacuation of the fire floor, of the two floors above the fire floor, and the floor below the fire floor is listed in Table A-5-2.13.11(b). Information about people movement by elevators is provided in Strakosch's book Vertical Transportation. The NIST publication Feasibility of Fire Evacuation by Elevators includes example estimates of the time needed for elevator evacuation calculated by the computer program for elevator evacuation (ELVAC). ELVAC is in the public domain and is documented by the paper Routine for Analysis of the People Movement Time for Elevator Evacuation.

Table A-5-2.13.10(A) by the number of car loads that can be moved from the fire floor, the two floors above the fire floor, and the floor below the fire floor within 15 minutes.

A-5-2.13.10(A) From the fire floor and other floors in the vicinity of the fire floor after elevator recall.

A-5-2.13.10(B) Car Load of 8 People

<table>
<thead>
<tr>
<th>Floors</th>
<th>Car Load</th>
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<th>Time to Evacuate</th>
<th>Time to Evacuate</th>
<th>Time to Evacuate</th>
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<td>fire floor 2</td>
<td>fire floor 3</td>
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</table>

1 Number of floors at a floor-to-floor height of 10 ft (3 m) from the fire floor to a discharge floor of safety.

2 The time needed for round trip evacuate a car load of people from the fire floor.

3 The time needed for round trip evacuate a car from each of the fire floor, the two floors above the fire floor, and the floor below the fire floor.
Table A-5.2.13.10(B)

<table>
<thead>
<tr>
<th>Floor to Serve</th>
<th>Car Load of 8 People</th>
<th>Car Load of 14 People</th>
<th>Car Load of 20 People</th>
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</thead>
<tbody>
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<td>No. Car Loads</td>
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<td>No. Car Loads</td>
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<td>50 1400 2</td>
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</tr>
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</table>

1 Number of floors at a floor-to-floor height of 10 ft (3 m) from the fire floor to a discharge floor of safety.
2 Number of car loads moved from each of the fire floor, of the two floors above the fire floor and of the floor below the fire floor.
3 The time needed to move the car loads described in 2 above plus the time for elevator recall.

SUBSTANTIATION: This proposal is based on a decade of research that shows that elevators can be designed to operate safely under fire conditions and provide enhanced evacuation capabilities for both the general population of buildings and people with mobility limitations. This proposal and a number of related proposals provide the basis for protecting people in elevators. The technical substantiation is presented in the following reports:


Note: At NEII's request, I note that responses to Section A-5.2.13.10(b) of this proposal and to a NEII proposal to NFPA 72 concerning the signal for initiation phase I (recall) elevator operation may need coordination.

NOTE: Supporting material is available for review at NFPA Headquarters.
Development of such a system should include human considerations. Human factors concerned with elevator evacuation are discussed by Groner and Levin's paper Human Factors Considering Evacuation Planning and Management. The NIST publication Feasibility and Design Considerations of Emergency Evacuation by Elevators includes example estimates of the time needed for elevator evacuation calculated by the computer program for elevator evacuation (ELVAC). ELVAC is in the public domain and is documented by the paper Routine for Analysis of the People Movement Time for Elevator Evacuation.

<table>
<thead>
<tr>
<th>Floors to Safety</th>
<th>Car Speed (fpm)</th>
<th>Car Load of 8 People</th>
<th>Car Load of 20 People</th>
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</thead>
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</table>

1Number of floors at a floor-to-floor height of 10 ft (3 m) from the fire floor to a discharge floor of safety.
2The time needed for round trip evacuate a car load of people from the fire floor.
3The time needed for round trip evacuate a car from each of the fire floor, the two floors above the fire floor, and the floor below the fire floor.

<table>
<thead>
<tr>
<th>Floors to Safety</th>
<th>Car Speed (fpm)</th>
<th>Car Load of 8 People</th>
<th>Car Load of 14 People</th>
<th>Car Load of 20 People</th>
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</table>

1Number of floors at a floor-to-floor height of 10 ft (3 m) from the fire floor to a discharge floor of safety.
2Number of car loads moved from each of the fire floor, of the two floors above the fire floor and of the floor below the fire floor.
3The time needed to move the car loads described in 2 above plus the time for elevator recall.
COMMITTEE STATEMENT: The Committee Action modifies the submitter's text by:

(1) requiring automatic sprinkler protection for buildings in which the elevators will be permitted to serve as means of egress. Such sprinkler protection is necessary to keep conditions tenable while elevators are used.

(2) deleting criteria on smoke control because one of the submitter's exceptions exempts sprinklered buildings from the proposed smoke control requirement.

(3) adding criteria limiting the credit for elevators to no more than half the floor egress capacity.

(4) adding criteria to keep all the elevators from being credited because elevators are at times out of service.

(5) rewording the door activation criterion to require that the detectors be positioned to detect fire immediately outside the elevator lobby, not just within the lobby.

The changes made by the committee should meet the submitter's intent.

The committee recognizes that further work on this new subject may be needed and welcomes input during the public comment period.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23

NEGATIVE: 1

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF NEGATIVE:

HODGENS: While I understand and appreciate the extensive research being conducted to improve the safety of elevators during fires, particularly as this research relates to the egress of the mobility impaired, I must indicate my concern with approving elevators for use as a secondary means of egress. Based upon documented New York City and national fire experience, elevators have failed at an unacceptable rate. Until technological changes are documented and empirical tests substantiate the proposed change, I believe it would be dangerous and premature to approve such use of elevators as a means of egress.

COMMENT ON AFFIRMATIVE:

MENZ: UL suggests changes in order to maximize the protection and evacuation of the occupants in the means of egress. Of concern would be if a fire occurs in one elevator shaft of a large bank of elevators or on a floor where the elevator lobby door is compromised, some or all of the elevators could be placed out of service in less than the anticipated 1 hour through the elevator entrance doors' distortion and subsequent disengagement of the interlocks. During the public comment review the following should be considered:

- Lobby doors should be temperature rise rated to prevent heat build up while occupants wait for the elevator.
- Only elevators that deposit occupants at the level of exit discharge should be considered for egress. When the occupants move from one elevator to another, problems and confusion may occur at the refuge/change over area as the occupants wait for the next elevator.
- To minimize a localized fire from disrupting service, ANSI/ASME A17.1 should be revised to require elevator entrance assemblies used in the means of egress to maintain interlock continuity for the full time required for evacuation. In the Canadian Elevator Code this is anticipated as one hour (fireman's service). A17.1 currently does not address continuity as part of the elevator entrance evaluation.
- ASME A17.1 should also be revised to indicate that when the elevators are used in "automatic" operation and the fire alarm is activated, the egress elevator should service only the fire floor, the two floors above the fire floor and the one floor below the fire floor until the elevator is placed into an automatic recall mode or the fire alarm is reset. If this system is not present then the evacuation would be slowed as occupants on additional floors press the elevator call button, in a large facility, these occupants may not even know that an evacuation is in progress.

101-91 - (5-4.1.2): Reject

Note: This proposal appeared as comment 101-125 which was held for further study from the Fall 93 TCD, which was on proposal 101-143.

SUBMITTER: Ivan J. Humberson

Montgomery County Fire Code Enforcement

RECOMMENDATION: Add a parenthetical reference to 5-5.1.3 at the end of 5-4.1.2, before the exception.

SUBSTANTIATION: A reference to 5-5.1.3 will help clarify the intent that, when more than two exits are required, all required exits must be remote in order to be considered separate exits. Otherwise, it would seem that, for instance, two doors, placed side by side, could be counted as two exits.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: Paragraph 5-4.1.2 deals with the case where more than two exits are required. Reference to 5-5.1.3 would be inappropriate because only two of the total number of exits need be remote from each other.

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NEGATIVE: 1

NOT RETURNED: 2 Behrens, Tomy

COMMENT ON AFFIRMATIVE:

HODGENS: When 3 or more exits are required, such exits should be required to be as remote from each other as possible. All the characteristics of a required exit should apply whether there is one, two or many exits.

(1) requiring automatic sprinkler protection for buildings in which the elevators will be permitted to serve as means of egress. Such sprinkler protection is necessary to keep conditions tenable while elevators are used.

(2) deleting criteria on smoke control because one of the submitter's exceptions exempts sprinklered buildings from the proposed smoke control requirement.

(3) adding criteria limiting the credit for elevators to no more than half the floor egress capacity.

(4) adding criteria to keep all the elevators from being credited because elevators are at times out of service.

(5) rewording the door activation criterion to require that the detectors be positioned to detect fire immediately outside the elevator lobby, not just within the lobby.

The changes made by the committee should meet the submitter's intent.

The committee recognizes that further work on this new subject may be needed and welcomes input during the public comment period.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23

NEGATIVE: 1

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF NEGATIVE:

HODGENS: While I understand and appreciate the extensive research being conducted to improve the safety of elevators during fires, particularly as this research relates to the egress of the mobility impaired, I must indicate my concern with approving elevators for use as a secondary means of egress. Based upon documented New York City and national fire experience, elevators have failed at an unacceptable rate. Until technological changes are documented and empirical tests substantiate the proposed change, I believe it would be dangerous and premature to approve such use of elevators as a means of egress.

COMMENT ON AFFIRMATIVE:

MENZ: UL suggests changes in order to maximize the protection and evacuation of the occupants in the means of egress. Of concern would be if a fire occurs in one elevator shaft of a large bank of elevators or on a floor where the elevator lobby door is compromised, some or all of the elevators could be placed out of service in less than the anticipated 1 hour through the elevator entrance doors' distortion and subsequent disengagement of the interlocks. During the public comment review the following should be considered:

- Lobby doors should be temperature rise rated to prevent heat build up while occupants wait for the elevator.
- Only elevators that deposit occupants at the level of exit discharge should be considered for egress. When the occupants move from one elevator to another, problems and confusion may occur at the refuge/change over area as the occupants wait for the next elevator.
- To minimize a localized fire from disrupting service, ANSI/ASME A17.1 should be revised to require elevator entrance assemblies used in the means of egress to maintain interlock continuity for the full time required for evacuation. In the Canadian Elevator Code this is anticipated as one hour (fireman's service). A17.1 currently does not address continuity as part of the elevator entrance evaluation.
- ASME A17.1 should also be revised to indicate that when the elevators are used in "automatic" operation and the fire alarm is activated, the egress elevator should service only the fire floor, the two floors above the fire floor and the one floor below the fire floor until the elevator is placed into an automatic recall mode or the fire alarm is reset. If this system is not present then the evacuation would be slowed as occupants on additional floors press the elevator call button, in a large facility, these occupants may not even know that an evacuation is in progress.

101-92 - (5-5.1.4): Reject

SUBMITTER: Jonathan Humble, Jonathan Humble, AIA

RECOMMENDATION: Revise 5-5.1.4 to read as follows:

5-5.1.4* In new construction, if two exits or exit access doors are required, they shall be placed at a distance apart from one another equal to not less than one half the length of the maximum overall diagonal dimension of the building or area to be served, measured in a straight line between the nearest edge of the exit doors or exit access doors. Where exit enclosures are provided as the required exits and are interconnected by a corridor conforming to the requirements of 5-1.3.5, exit separation shall be permitted to be measured along the line of travel within the corridor.

In new construction, where more than two exits or exit access doors are required, at least two of the required exits or exit access doors shall be arranged to comply with the above. The other exits or exit access doors shall be located so that if one becomes blocked, the others will be available.

Exception: (No change to the exception).

SUBSTANTIATION: As currently written Section 5-5.1.4 contains language which is ambiguous concerning the specific location(s) of the third, fourth, fifth, etc., exits or exit access doors when required. Anyone may read this as only requiring that two exits or exit access doors need comply with the D/2 minimum separation distance from each other, and remain satisfied that the code had been complied with by locating any other additional (3rd, 4th, 5th, etc.) exits or exit access doors adjacent to either one of the initial two exits or exit access doors.

By modifying the text in the first paragraph, and deleting the second paragraph entirely, conveys the original intent of this section that all exits and exit access doors are to be remotely located from all others.

Figure 1 illustrates an application of the language of Section 5-5.1.4 to a room. Pursuant to the language in the section a third, fourth, etc. exit could be located anywhere in space.
Figure 2 illustrates an application of the language of the proposed code change to Section 5-5.1.4 to a room. All exits are to be remotely located from other exits.

The reader is left uncertain what requirement applies to existing buildings. The new second exception sends the user to 5-5.1.3 for judging the remoteness of exits in existing buildings.

COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: Safety can be achieved in accordance with current 5-5.1.4 without requiring that all exits be of this concept. Other requirements such as those applicable to common path of travel help to provide adequate safety.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 23
NOT RETURNED: 2 Behrens, Tomy
COMMENT ON AFFIRMATIVE: HODGENS: When 3 or more exits are required, such exits should be required to be as remote from each other as possible. All the characteristics of a required exit should apply whether there is one, two or many exits.

EXPLANATION OF ABSTENTION: ELOVE: Prior to and during the ROP, I was not privy to the supporting material the submitter refers to. Therefore, I could not make an informed decision regarding the validity of the proposal.

101-94- (5-5.1.4 and Exception No. 2 (New)): Accept
SUBMITTER: Technical Committee on Means of Egress.
RECOMMENDATION: Reword 5-5.1.4 and add a second exception so as to read:
5-5.1.4 In new construction, if two exits or exit access doors are required, they shall be placed at a distance from one another equal to but not less than one half the length of the maximum overall diagonal dimension of the building or area to be served, measured in a straight line between the nearest edge of the exit doors or exit access doors. Where exit enclosures are provided as the required exits and are interconnected by a corridor conforming to the requirements of 5-1.3.5, exit separation shall be permitted to be measured along the line of travel within the corridor.

HODGENS: When more than two exits or exit access doors are required, at least two of the required exits or exit access doors shall be arranged to comply with the above. The other exits or exit access doors shall be located so that if one becomes blocked, the others will be available.

Exception No. 1: In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 7-7, the minimum separation distance between two exits or exit access doors measured in accordance with 5-5.1.4 shall be not less than one third the length of the maximum overall diagonal dimension of the building or area to be served.

EXCEPTION NO. 2: In existing buildings, where more than one exit is required from a building or portion thereof, such exits shall be permitted to be remotely located in accordance with 5-5.1.3.

RECOMMENDATION: Paragraph 5-5.1.4 addresses new construction. The reader is left uncertain what requirement applies to existing buildings. The new second exception sends the user to 5-5.1.3 for judging the remoteness of exits in existing buildings.

COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 25
NEGATIVE: 1
NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF NEGATIVE: HODGENS: When 3 or more exits are required, such exits should be required to be as remote from each other as possible. All the characteristics of a required exit should apply whether there is one, two or many exits.

101-95 - (5-5.3.2): Accept
SUBMITTER: Technical Committee on Means of Egress.
RECOMMENDATION: Revise 5-5.3.2 to read: "... be arranged to restrict the accumulation of smoke.

STABILIZATION: Coordination with Proposal 101-74 (Log #298) on 5-2.2.5.4 (new). Preventing the accumulation of smoke is too difficult to assure. Restricting the accumulation of smoke is accomplishable.

COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF ABSTENTION: ELOVE: For example, consider a space with a length of 100 feet and the emergency areas of people. Furthermore, this approach permits others will be available.

101-98 - (5-5.5.3.3): Accept
SUBMITTER: James K. Lathrop, Roffel Associates, Inc.
RECOMMENDATION: Add a second exception to 5-5.3.3 to read: Exception No. 2: Where dead ends on the exterior exit access do not exceed 20 ft (6.1 m).

RECOMMENDATION: Revise 5-5.3.6 to read: 5-5.3.6 Dead ends on exterior exit access ways shall be limited as for a corridor.

RECOMMENDATION: Revise 5-5.3.7 to read: 5-5.3.7 Exterior exit access shall comply with the requirements of the Code as to width and arrangement.
SUBSTANTIATION: A review of the history of this section reveals a series of add ons with no period of reflection of the total package. For years the 20 ft dead end limit prevented exposure to too many unprotected openings. When 5-5.3.3 was added in the mid 80's no exception was provided for the traditional design of limiting the dead ends but not restricting openings. Currently we limit the openings and restrict the dead ends (in most occupancies this dead end is much more stringent than for the rest of the building). By adding the exception, we fix an oversight created several years ago and provide another reasonable alternative. By revising 5-5.3.6 we let the dead ends established by the occupancy prevail as long as the exterior exit access is properly protected. A dead end on exterior exit access ways is obviously less hazardous than in a corridor. The current restriction of 20 ft is unjustified in most occupancies.

COMMITTEE ACTION: Accept in Principle.

Add a second exception to 5-5.3.3 to read:

Exception No. 2: Where dead ends on the exterior exit access do not exceed 20 ft (6.1 m).

Revise 5-5.3.6 to read:

5-5.3.6. Dead ends on exterior exit access ways shall be limited as for dead end corridors.

Revise 5-5.3.7 to read:

5-5.3.7. Exterior exit access shall comply with the requirements of the Code as to width and arrangement.

COMMITTEE STATEMENT: The minor editorial improvement made to the submitter's language should meet his intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

ABSTENTION: 2 Behrens, Tomy

(Log #283) MEA

101-97 - (5-5.3.9): Reject

SUBMITTER: Eugene A. Cable, U.S. Department of Veterans Affairs

RECOMMENDATION: Revise 5-5.3.2 to read:

5-5.3.2 Any lobby, balcony, bridge, porch, or other exterior exit access shall be protected by a roof where accumulation of snow or ice is likely.

SUBSTANTIATION: To help clarify that a roof is only required over exterior exit access area, as opposed to exit discharge doorways and stairs. Some Authorities Having Jurisdiction are requiring roofs over exit discharge points and wrongly referencing this section as the basis for the requirement. Exit discharge areas can be cleared of snow and ice by personnel, a path across a roof to an exit is much less likely to be manually cleared of snow.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: Section 5-5.3 is meant to apply to exit access, not exit discharge. The proposed text does not provide a clarification.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Behrens, Tomy

(Log #190) MEA

101-98 - (5-5.4.1) Exception No. 4, Accessible Means of Egress, 5-2.12.2.3

Exception No. 4 (New): Accept

SUBMITTER: James L. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Revise 5-5.4.1 to read:

5-5.4.1 Areas accessible to people with severe mobility impairment shall have a minimum of two accessible means of egress (see definition of accessible means of egress in 5-1.2). Access shall be provided.......

No changes to the 5 exceptions.

Revise 5-5.4.2 to read:

5-5.4.2 Each required accessible means of egress shall be continuous from each accessible occupied area to a public way or an area of refuge, complying with 5-2.12, which shall have access to a public way.

Revise 5-5.4.3 to read:

5-5.4.3 Where an exit stair is used in an accessible means of egress it shall comply with 5-2.12.2.3 and shall either incorporate an accessible area of refuge within an enlarged story-level landing or shall be accessed from an accessible area of refuge.

Delete all the exceptions to 5-5.4.3.

Revise 5-5.4.4 to read:

5-5.4.4 An elevator, to be considered part of an accessible means of egress, shall:

(a) Be accessed from an accessible area of refuge, and

(b) Comply with 5-2.12.2.3.

Delete all the exceptions to 5-5.4.4.

No changes to 5-5.4.5 and 5-5.4.6

Revise 5-1.2 definition of Accessible Means of Egress by changing the parenthetical reference to "(See 5-2.12.)"

Revise 5-2.12.2.3 by adding a fourth exception as follows: Exception No. 4: A minimum 37-in. (94-cm) clear width, measured at and below handrail height, shall be permitted in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 7-7.

SUBSTANTIATION: This change is intended to be totally editorial. The current repetition of material from 5-2.12 causes confusion and can be a problem in the future if changes are not coordinated. By referencing appropriate material the Code emphasizes how these two sections work together. Although 5-2.12 is exempted for sprinklered buildings by 5-2.12.1 the exception, similar to 5-2.12.2.4, has been added since it is being deleted in 5-2.4.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 25

ABSTENTION: 1

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF ABSTENTION: HODGENS: Elevators should not be used, at this time, as accessible means of egress.

(Log #281) MEA

101-99 - (5-5.4.1) Exception No. 5: Reject

SUBMITTER: Carl F. Baldassarra, Schirmer Engineering Corp.

RECOMMENDATION: Revise Exception No. 5 to 5-5.4.1 as follows:

Exception No. 5: Health care occupancy: Buildings protected throughout by an approved, supervised automatic sprinkler system installed in accordance with the provisions of Section 7-7.

SUBSTANTIATION: Applying a sprinkler exception for all buildings protected throughout by a supervised automatic sprinkler system is consistent with Section 4-1.3(a) of the Americans with Disabilities Act Accessibility Guidelines.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The current Code already permits what the submitter is requesting. In a sprinklered building, two standard-width stairs are permitted to serve as the accessible means of egress to the public way. The submitter's wording does not eliminate the need for the separate room as required in 5-1.2 Area of Refuge subitem (a).

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23

NEGATIVE: 1

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF NEGATIVE: ELROVE: This proposal should be accepted. I don't see the submitter's intent addressed; if so, Exception No. 5 wouldn't be needed in the first place. A sprinklered building should be considered to have two accessible means of egress. This exception should not be limited to health care occupancies.

( Log #212) MEA

101-100 - (5-5.4.1) Exception No. 2 and 5-5.4.2 (New): Accept

SUBMITTER: Technical Committee on Means of Egress

RECOMMENDATION: Revise Exception No. 2 to 5-5.4.1 to read:

Exception No. 2: Exit access travel along the accessible means of egress shall be permitted to be common for the distances allowed as common paths of travel.

Insert a new 5-5.4.2 (and remove current 5-5.4.2 through 5-5.4.6 as necessary) to read:

5-5.4.2 If two accessible means of egress are required, the exits serving these paths shall be placed at a distance from one another not less than one half the length of the maximum overall diagonal dimension of the building or area to be served, measured in a straight line between the nearest edge of the exit doors or exit access doors. Where exit enclosures are provided as the required exits and are interconnected by a corridor conforming to the requirements of 5-1.3.5, exit separation shall be permitted to be measured along the line of travel within the corridor.

Exception No. 1: Buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 7-7.
VOTE ON COMMITTEE ACTION:
SUBSTANTIATION: This material supports other suggested changes to Chapter 5 of NFPA 101 that allow an elevator to be a component of an accessible means of egress. While I understand and appreciate the extensive research being conducted to improve the safety of elevators during fires, particularly as this research relates to the egress of the mobility impaired, I must indicate my concern with approving elevators for use as a secondary means of egress. Based upon documented New York City and national fire experience, elevators have failed at an unacceptable rate. Until technological changes are documented and empirical tests substantiate the proposed change, I believe it would be dangerous and premature to approve such use of elevators as a means of egress.

COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 26
NOT RETURNED: 2 Behrens, Tomy

COMMITTEE STATEMENT: The Committee Action adds a performance requirement that the motion sensor be activated by any occupant movement in the area served by the lighting unit. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF ABSTENTION:
HODGENS: Elevators should not be used, at this time, as accessible means of egress. While I understand and appreciate the extensive research being conducted to improve the safety of elevators during fires, particularly as this research relates to the egress of the mobility impaired, I must indicate my concern with approving elevators for use as a secondary means of egress. Based upon documented New York City and national fire experience, elevators have failed at an unacceptable rate. Until technological changes are documented and empirical tests substantiate the proposed change, I believe it would be dangerous and premature to approve such use of elevators as a means of egress.

COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 26
NOT RETURNED: 2 Behrens, Tomy

SUBSTANTIATION: The attitude toward lighting in this country has been quite profligate. Even emergency lighting requirements are amongst the highest in the world. From personal experience and research, I've found that many occupancies do not meet the lighting requirements set forth by code under normal conditions, let alone emergency conditions; i.e., restaurants, night clubs, corridors, stairways, etc.

In 1990, John Kaufman on behalf of the IES Emergency Lighting Committee presented a detailed report (ref: log150) showing that 0.05 fc (5 lux) was sufficient lighting to prevent collisions with large objects during evacuation of a space. The technical committee for NFPA accepted this in principle and revised Section 5-9.2.1 to read as written herein above. Later in the review process the technical committee accepted a response to this study (ref: log 357) that stated an illumination level of 0.05 fc (5 lux) was excessive and should be reduced to 0.05 fc (3 lux) at the end of the emergency lighting time duration. A maximum to minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. The illumination uniformity ratio is determined by the following formula:

MAXIMUM ILLUMINATION AT ANY POINT
MINIMUM ILLUMINATION AT ANY POINT

Delete A-5-9.2.1.

SUBSTANTIATION: The attitude toward lighting in this country has been quite profligate. Even emergency lighting requirements are amongst the highest in the world. From personal experience and research, I've found that many occupancies do not meet the lighting requirements set forth by code under normal conditions, let alone emergency conditions; i.e., restaurants, night clubs, corridors, stairways, etc.

In 1990, John Kaufman on behalf of the IES Emergency Lighting Committee presented a detailed report (ref: log150) showing that 0.05 fc (5 lux) was sufficient lighting to prevent collisions with large objects during evacuation of a space. The technical committee for NFPA accepted this in principle and revised Section 5-9.2.1 to read as written herein above. Later in the review process the technical committee accepted a response to this study (ref: log 357) that stated an illumination level of 0.05 fc (5 lux) was excessive and should be reduced to 0.05 fc (3 lux) at the end of the emergency lighting time duration. A maximum to minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. The illumination uniformity ratio is determined by the following formula:

MAXIMUM ILLUMINATION AT ANY POINT
MINIMUM ILLUMINATION AT ANY POINT

Delete A-5-9.2.1.

SUBSTANTIATION: The attitude toward lighting in this country has been quite profligate. Even emergency lighting requirements are amongst the highest in the world. From personal experience and research, I've found that many occupancies do not meet the lighting requirements set forth by code under normal conditions, let alone emergency conditions; i.e., restaurants, night clubs, corridors, stairways, etc.

In 1990, John Kaufman on behalf of the IES Emergency Lighting Committee presented a detailed report (ref: log150) showing that 0.05 fc (5 lux) was sufficient lighting to prevent collisions with large objects during evacuation of a space. The technical committee for NFPA accepted this in principle and revised Section 5-9.2.1 to read as written herein above. Later in the review process the technical committee accepted a response to this study (ref: log 357) that stated an illumination level of 0.05 fc (5 lux) was excessive and should be reduced to 0.05 fc (3 lux) at the end of the emergency lighting time duration. A maximum to minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. The illumination uniformity ratio is determined by the following formula:

MAXIMUM ILLUMINATION AT ANY POINT
MINIMUM ILLUMINATION AT ANY POINT

Delete A-5-9.2.1.

SUBSTANTIATION: The attitude toward lighting in this country has been quite profligate. Even emergency lighting requirements are amongst the highest in the world. From personal experience and research, I've found that many occupancies do not meet the lighting requirements set forth by code under normal conditions, let alone emergency conditions; i.e., restaurants, night clubs, corridors, stairways, etc.

In 1990, John Kaufman on behalf of the IES Emergency Lighting Committee presented a detailed report (ref: log150) showing that 0.05 fc (5 lux) was sufficient lighting to prevent collisions with large objects during evacuation of a space. The technical committee for NFPA accepted this in principle and revised Section 5-9.2.1 to read as written herein above. Later in the review process the technical committee accepted a response to this study (ref: log 357) that stated an illumination level of 0.05 fc (5 lux) was excessive and should be reduced to 0.05 fc (3 lux) at the end of the emergency lighting time duration. A maximum to minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. The illumination uniformity ratio is determined by the following formula:

MAXIMUM ILLUMINATION AT ANY POINT
MINIMUM ILLUMINATION AT ANY POINT

Delete A-5-9.2.1.

SUBSTANTIATION: The attitude toward lighting in this country has been quite profligate. Even emergency lighting requirements are amongst the highest in the world. From personal experience and research, I've found that many occupancies do not meet the lighting requirements set forth by code under normal conditions, let alone emergency conditions; i.e., restaurants, night clubs, corridors, stairways, etc.

In 1990, John Kaufman on behalf of the IES Emergency Lighting Committee presented a detailed report (ref: log150) showing that 0.05 fc (5 lux) was sufficient lighting to prevent collisions with large objects during evacuation of a space. The technical committee for NFPA accepted this in principle and revised Section 5-9.2.1 to read as written herein above. Later in the review process the technical committee accepted a response to this study (ref: log 357) that stated an illumination level of 0.05 fc (5 lux) was excessive and should be reduced to 0.05 fc (3 lux) at the end of the emergency lighting time duration. A maximum to minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. The illumination uniformity ratio is determined by the following formula:

MAXIMUM ILLUMINATION AT ANY POINT
MINIMUM ILLUMINATION AT ANY POINT

Delete A-5-9.2.1.
and concur with their results. For this reason I propose we go back to the committee's original proposed action stated in Log 150 in 1990.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: Sufficient lighting is needed to avoid collision with small objects, not just large objects. Also the proposed lower lighting level does not provide the initial high level needed for slight prior to the time it takes for the eye to adapt to lower lighting levels.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 25
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 2 Behrens, Tommy

EXPLANATION OF NEGATIVE: HELETON: We believe the presently required 1 fc average illumination along the path of egress at floor level is more illumination than is needed to allow people to quickly and safely evacuate a building. We do not know what actual minimum illumination is required but 0.5 fc appears to be more than adequate. Therefore, we vote to accept this proposal.

COMMITTEE ACTION:
RECOMMENDATION: Move 31-1.3.7 to become part of existing 5-9.3 as follows:

5-9.3 Testing and Maintenance (See Section 51-1): 51-9.7.4
Periodic Testing of Emergency Lighting Equipment. A functional test shall be conducted on every required emergency lighting system at 6-month intervals for a minimum of 30 seconds. An annual test shall be conducted for the 1 1/2-hour duration. Equipment shall be fully operational for the duration of the test. Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

Exception: Self-testing/self-diagnostic, battery-operated emergency lighting equipment that automatically performs a minimum 30-second test and diagnostic routine at least once every 30 days and indicates failures by a status indicator shall be exempt from the 30-day functional test, provided a visual inspection is performed at 30-day intervals.

[Note that the above wording is further modified technically via the committee action on Proposal 101-105 (Log #152) on 51-1.3.7]

SUBSTANTIATION: The proposal editorially moves Section 31-1 material to the core chapters (1 through 7) as directed by the Technical Correlating Committee on Safety to Life.

COMMITTEE ACTION:
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tommy

(Log #335) MEA

101- 105 - (5-9.2.1 Exception (New)): Reject
SUBMITTER: Terry A. Brouwer, Connecticut Office of State Fire Marshal

RECOMMENDATION: Add an exception to 5-9.2.1 to read:
Exception: Emergency lighting systems utilizing emergency generators as a power source shall be permitted to have illumination levels that are not less than 0.6 footcandle average and a minimum at any point of 0.06 footcandle.

SUBSTANTIATION: A generator powered system is a constant and does not decline like a battery powered system. As such a generator system should be permitted to maintain the minimum acceptable level throughout the 1 1/2 hour period.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: Current Code allowance for decline to 60 percent of initial level is expected to occur long into the 90 minute period, usually after the building has been evacuated. The lower level permitted also recognizes the time period necessary for eye adaptation to light for those who remain in the area for longer periods of time.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tommy

(Log #449) MEA

101- 106 - (5-9.2.3 Exception (New)): Accept in Principle
SUBMITTER: Douglas S. Erickson, American Hospital Association

RECOMMENDATION: Add an exception to 5-9.2.3 to read:
Exception: Existing installations shall be permitted to be continued in service provided the lack of conformity with this standard does not present a serious hazard to the occupants.

SUBSTANTIATION: Many occupancies, particularly health care, have emergency generators and systems which were installed decades ago and do not meet the latest edition of NFPA 110. The existing essential electrical systems are perfectly reliable and although not up to current standards provide a level of safety consistent with existing building requirements.

COMMITTEE ACTION: Accept in Principle.
See Committee Action on Proposal 101 - 3 (Log #CP100) on Chapter 1.

COMMITTEE STATEMENT: Rather than add numerous such exceptions throughout the Code, the generalized exception in Chapter 1 should suffice. The change being made to Chapter 1 should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tommy

(Log #CP210) MEA

101- 107 - (5-9.3 and 31-1.3.7): Accept
SUBMITTER: Technical Committee on Means of Egress,

RECOMMENDATION: Move 31-1.3.7 to become part of existing 5-9.3 as follows:

5-10.1.5a Where floor proximity exit signs are specifically required by Chapters 8 through 30, exit signs shall be placed near the floor level in addition to those signs required for doors or corridors. (See Appendix for recommended illumination.) The bottom of the sign shall be not less than 6 in. (15.2 cm) nor more than 8 in. (20.3 cm) above the floor. For exits adjacent to the door or door adjacent to the door with the closest edge of the door within 4 in. (10.2 cm) of the door frame.

5-10.1.6 Every sign required by Section 5-10 shall be located and of such size, distinctive color, and design as to readily visible and shall provide contrast with decorations, interior finish, or other signs. No decorations, furnishings, or equipment that impairs visibility of an exit sign shall be permitted, nor shall there be any brightly illuminated signs (for other than exit purposes), display, or object in or near the line of vision of the required exit sign of such a character as to detract attention from the exit sign.

5-10.1.7* Where floor proximity egress path marking is specifically required by Chapters 8 through 30, a listed and approved floor proximity egress path marking system that is internally illuminated shall be installed within 8 in. (20.3 cm) of the floor. The system shall provide a visible delineation of the path of travel along the designated exit access and shall be essentially continuous, except as interrupted by doorways, hallways, corridors, or other such architectural features. The system shall operate continuously or at any time the building fire alarm system is activated. The activation, duration, and continuity of operation of the system shall be in accordance with 5-9.2. This path marking system shall be supplemental to the requirements of Sections 5-8 and 5-9 and Paragraphs 5-10.1.5 and 5-10.1.6.

5-10.2 Size of Signs. (See Appendix.)

5-10.3 Illumination of Signs.

5-10.3.1 Every sign required by 5-10.1 or 5-10.1.4 shall be suitably illuminated by reliable light source. For both externally and internally illuminated signs, the word "EXIT" or other appropriate
wording shall be plainly legible at a minimum distance of 100 ft when operating in both the normal and emergency lighting mode. 50 ft (15.2 m) average floor height, and 1 ft (0.3 m) average ceiling height (see 5-9.2.1), respectively. This visibility is to be determined in accordance with ANSI/UL 924.

5-10.3.2 Every sign required to be illuminated by 5-10.3 shall be continuously illuminated as required under the provisions of Section 5-8.

Exception No. 1: Illumination for signs shall be permitted to flash on and off upon activation of the fire alarm system.

Exception No. 2: Approved self-luminous or electroluminescent signs that provide evenly illuminated letters shall have a minimum luminance of 0.06 footlamberts (0.21 cd/sq m) as measured by a color-corrected photometer. These signs shall be permitted to be located outside of the EXIT legend and shall be legible from a distance of at least 100 ft (30 m) under all normal and emergency lighting conditions (30 fc and 1 fc, respectively). Internally illuminated signs shall be listed in accordance with UL 924.

5-10.3.3 Where emergency lighting facilities are required by the applicable provisions of Chapters 8 through 30 for individual occupancies, the exit signs shall be illuminated by the emergency lighting facilities. The level of illumination of the exit sign shall be at least 30 fc (0.36 lm) and shall be permitted to be located such that the viewing distance along the path of egress never exceeds 50 ft.

5-10.4.1 Directional Signs.

5-10.4.1.1 A sign complying with 5-10.2 reading "EXIT" with a directional indicator showing the direction of travel shall be placed in every location where the direction of travel is required to be indicated. The directional indicator shall be located outside of the EXIT legend and shall be permitted to be integral to or separate from the sign body. The directional indicator shall be in accordance with Figure 5-10.4.1.2 and shall be continuously illuminated as required under the provisions of Section 5-9.2.1, but shall be permitted to decline to 60 percent of the illumination level at the end of the emergency lighting time duration.

5-10.4.2 Specific Requirements.

5-10.4.2.1 Listed exit signs may have letters not less than 3/8 in. (1 cm) high with the principal strokes of letters not less than 3/4 in. (1.9 cm) high and having letters of a width not less than 2 in. (5 cm), except the letter "I," and the minimum spacing between letters is not less than 3/8 in. (1 cm).

5-10.4.2.2 Internally illuminated signs required by 5-10.1 and 5-10.3.1 have the word "EXIT" or other appropriate wording in letters plainly legible from a distance of at least 100 ft (30 m) under all normal and emergency lighting conditions (30 fc and 1 fc, respectively). Internally illuminated signs shall be listed in accordance with UL 924.

Exception No. 1: Approved existing signs.

Exception No. 2: Existing signs having the required wording in plainly legible letters not less than 4 in. (10 cm) high are acceptable.

5-10.4.3 Size of Signs.

5-10.4.3.1 Signs required by 5-10.3.1 have been shown to be very visible and legible when the letters are evenly illuminated with a maximum ratio of the brightest point to the darkest point not to exceed 2:1 and having a minimum luminance of 0.06 footlamberts (0.21 cd/sq m) when measured using a photometer having a target area not greater than 3/8 in. diameter. Listed exit signs have letters not less than 3/8 in. (1 cm) high with the principal strokes of letters not less than 3/4 in. (1.9 cm) high with the principal strokes of letters not less than 3/4 in. (1.9 cm) high and having letters of a width not less than 2 in. (5 cm), except the letter "I," and the minimum spacing between letters is not less than 3/8 in. (1 cm). Signs larger than the minimum dimensions in this paragraph should have letter widths, strokes, and spacing in proportion to their height.

A-5.10.3.3 Two or more signs shall be arranged in a chevron pattern to provide a visible and legible viewing distance of at least 25 ft (7.6 m) under the same illumination conditions as those for 5-10.5.1. The directional indicators shall not be located at the end of the sign opposite the direction indicated.

Appendix

A-5-10.2 It is not the intent of this paragraph to specify the exact dimensions of a sign other than "EXIT" or other appropriate wording in the directional indicator. However, past practice has shown that the following are very visible. The word "EXIT" with letters not less than 6 in. (15.2 cm) high with the principal strokes of letters not less than 3/4 in. (1.9 cm) with letters of a width not less than 2 in. (5 cm), except the letter "I," and the minimum spacing between letters is not less than 3/8 in. (1 cm). Signs larger than the minimum dimensions in this paragraph should be continuously illuminated as required under the provisions of Section 5-10.2.2. The directional indicators shall not be located outside of the EXIT legend and shall be permitted to be integral to or separate from the sign body. The directional indicators shall be in accordance with Figure 5-10.4.1.2 and shall be continuously illuminated as required under the provisions of Section 5-10.2.1, but shall be permitted to decline to 60 percent of the illumination level at the end of the emergency lighting time duration.

A-5.10.3.1.1 Past practice has shown that externally illuminated signs illuminated by not less than 5 footcandles (54 lx) and having a color-corrected photometer. New signs shall be located such that the viewing distance along the path of egress does not exceed 100 ft (30 m).

A-5.10.3.1.2 Past practice has shown that the visibility of an internally illuminated sign shall be the equivalent of an externally illuminated sign that complies with 5-10.3.2.

Exception No. 1: Approved existing signs.

Exception No. 2: Approved self-luminous or electroluminescent signs that provide evenly illuminated letters shall have a minimum luminance of 0.06 footlamberts (0.21 cd/sq m) as measured by a color-corrected photometer. New signs shall be located such that the viewing distance along the path of egress does not exceed 100 ft (30 m).

A-5.10.3.3 Two or more signs shall be arranged in a chevron pattern to provide a visible and legible viewing distance of at least 25 ft (7.6 m) under the same illumination conditions as those for 5-10.5.1. The directional indicators shall not be located at the end of the sign opposite the direction indicated.

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A-5.10.3.1.1 Past practice has shown that externally illuminated signs illuminated by not less than 5 footcandles (54 lx) and having a color-corrected photometer. New signs shall be located such that the viewing distance along the path of egress does not exceed 100 ft (30 m).

A-5.10.3.1.2 Past practice has shown that the visibility of an internally illuminated sign shall be the equivalent of an externally illuminated sign that complies with 5-10.3.2.

Exception No. 1: Approved existing signs.

Exception No. 2: Approved self-luminous or electroluminescent signs that provide evenly illuminated letters shall have a minimum luminance of 0.06 footlamberts (0.21 cd/sq m) as measured by a color-corrected photometer. New signs shall be located such that the viewing distance along the path of egress does not exceed 100 ft (30 m).

A-5.10.3.3 Two or more signs shall be arranged in a chevron pattern to provide a visible and legible viewing distance of at least 25 ft (7.6 m) under the same illumination conditions as those for 5-10.5.1. The directional indicators shall not be located at the end of the sign opposite the direction indicated.

Exception: Approved existing signs.
5-10.4.2* Special Signs. Any door, passage, or stairway that is neither an exit nor a way of exit access that is located or arranged so that it is likely to be mistaken for an exit shall be identified by a sign reading "NO EXIT." Such sign shall have the word "NO" in letters 2 in. (5 cm) high with stroke width of 3/8 in. (1 cm) and the word "EXIT" in letters 1 in. (2.5 cm) high, with the word "EXIT" below the word "NO."

Exception: Approved existing signs.

COMMITTEE STATEMENT: The Committee Action modifies/accepts the submitter's text as shown above for the following reasons:

5-10.2.1: contains the original prescriptive requirements for externally illuminated signs; retains three of the exceptions; relocates the fourth exception to the new 5-10.2.2 on internally illuminated signs. The prescriptive criteria have been retained for the purpose of determining acceptability.

5-10.2.2: contains new text specifically addressing performance criteria for internally illuminated signs; requires testing and listing to determine compliance with the performance criteria.

A5-10.2.2: contains wording advising that internally illuminated signs can be determined to be legible if meeting the dimensional criteria specified by 5-10.2.1 for externally illuminated signs.

5-10.3.1: replaces the word "visible" with the word "legible" because the intent is that the sign must be readable versus merely being detectable as a sign.

5-10.3.3 Exception No. 2: changes the viewing distance from 100 ft to 50 ft based on recent research that demonstrated that the majority of observers are unable to determine the legibility of such signs at 100 ft. See the report: Specifier Reports - Exit Signs - Energy Efficient, Internally Illuminated Exit Signs & Retrofit Kits, Volume 2, Number 1, January 1994, National Lighting Product Information Program from the RPI Lighting Research Center, Troy, NY.

5-10.3.4: deleted because redundant with the requirements in 5-10.2.2 and 5-10.3.1.

5-10.4.1.2: The visibility distance of 100 ft has been reduced to 25 ft. This change was made because persons do not need to be made aware of the directional indicator when they are 100 ft away from the sign. At a distance of 25 ft from the sign, the person will become aware of the direction indicated and have the necessary time to adjust direction. In addition, the average illumination levels were specified, in lieu of the general terminology currently in the Code, to add criteria that can be used to determine identifiability of the directional indicator during the sign evaluation process.

The Committee Action should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 2 Behrens, Tony

EXPLANATION OF NEGATIVE: DI PILLA: This proposal gave the committee an opportunity to make editorial changes to Chapter 5. In four sections of 5-10, the term "plainly legible" is used. The term "plainly" is superfluous, since signs are either legible or they are not. By using the word "plainly" an opportunity is provided to debating a subjective level of legibility.

The first reference in this chapter to "approved self-luminescent or electroluminescent signs" is Exception No. 2 to 5-10.3.3, which addresses the visibility of internally illuminated signs. This suggests that self-luminescent and electroluminescent signs are a third category of signs and therefore not subject to the size and other requirements.

I am dismayed by the placement of size specifications for internally illuminated signs to the appendix. While externally illuminated signs are still subject to such requirements, internally illuminated signs will no longer have the consistency and uniformity which helps building occupants quickly and easily distinguish an exit sign from another sign. In addition, the committee has accepted Log #191 which deletes the 100 ft. placement requirement for exit signs, which makes it even more important that ALL exit signs be easily distinguishable.

Figure 5-10.4.1.2 Chevron-type indicator.
American National Standard for Accessible and Usable Buildings and Facilities, shall be installed adjacent to the latch side of the door 60 in. (152 cm) above the finished floor to the centerline of the sign. The subject NFPA 101® code does not contain an Exception to provide relief from this requirement. Based on the justification provided below, an Exception from the subject requirement should be provided. An example is provided.

The NFPA 101® requirement for tactile signage is intended to support the Americans with Disabilities Act (ADA), which establishes regulations that increase access for disabled people to public accommodations, commercial facilities, employment facilities, and state and local government facilities. There are five Titles (I, II, III, IV, and V) to the ADA: Title I addresses employment facilities and is administered by the United States Equal Opportunity Commission (EEOC). Title I allows an employer to have a prospective employee demonstrate his or her ability to perform job-related tasks, including agility and strength tasks; it also permits pre-employment physical exams and fitness for duty standards for specific job functions. Since Title I permits restrictive employment screening criteria, it is the least restrictive Title in that it only requires reasonable accommodation for disabled people when they are employed at a facility. This may include making the work site more accessible by removing architectural barriers at the place of employment and in the path of travel to that site.

For facilities that are not accessible to physically impaired personnel, because of a employer's fitness for duty requirements, etc., the ADA requirements do not apply, and therefore, the Life Safety Code® requires tactile "tactile signage" on doors leading to all exit stairways is not justified in all cases.

COMMITTEE ACTION: Reject.

SUBMITTER: James R. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Delete the last sentence of 5-10.1.4 which reads: "Sign placement shall be such that no point in the exit access is more than 100 ft (30 m) from the nearest sign."

COMMITTEE STATEMENT: See Committee Action on Proposal 101-110 (Log #27) on 5-10.1.3 Exception (new).

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NEGATIVE: 2

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF NEGATIVE VOTING:

Marina Batzke, American Permalight, Inc.

RECOMMENDATION: Add an exception to 5-10.1.3 to read:

Exception: Existing buildings, provided the occupancy classification does not change.

SUBSTANTIATION: Paragraph 5-10.1.3 requires tactile signage complying with CABO/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities, to be positioned at each door into an exit stair enclosure. The requirement was added to the 1994 edition of the Life Safety Code to coordinate egress requirements with disabled individuals with ADACAG Americans with Disabilities Act Accessibility Guidelines and model building codes. However, the application section of the 1992 edition of CABO/ANSI A117.1 states that the provisions of the standard are suitable for new construction and remodeling of existing buildings. Given that the requirement for tactile signage was added as part of the package of revisions including accessible means of egress via 5-5.4, and Exception No. 1 to 5-5.4.1 exempts existing buildings, it was not the intent to require tactile signage retroactively.

With the above change incorporated into the 1997 edition of the Code, Formal Interpretation F.I. 94-4 (NFPA 101) can be retired.

COMMITTEE ACTION: Accept.

SUBMITTER: The Technical Committee on Means of Egress.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 21

NEGATIVE: 3

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF NEGATIVE VOTING:

DI PILLA: The exception should read "Existing buildings." The remainder of the proposal is superfluous. 101-1.6.5 states that any change of occupancy classification subjects the facility to the requirements of new construction. In effect, any existing building with an occupancy classification change becomes new construction, and is not considered an existing building.

ELVIVE: Leave the code text as written in the formal interpretation (F.I. 94-4) unchanged.

FAVRO: I am voting negatively on Log number CP15 because the exception for existing buildings as proposed is not consistent with the remainder of Section 5-10.1 which grants no exceptions from the marking of exits in existing buildings. Nor is it consistent with Chapter 5 in general which states unequivocally in Section 5-1.1 that "means of egress for both new and existing buildings shall comply with this chapter." Chapter 5 is a second edition and is clear that the intent of the code is to mark exits in all buildings so that occupants are able to find their way out in case of fire or other emergency. I see no reason why the marking of means of egress for persons with visual disabilities should be singled out for exclusion.

COMMITTEE ACTION: Accept.

SUBMITTER: Eugene A. Cable, U.S. Department of Veterans Affairs

RECOMMENDATION: Change last sentence of 5-10.1.4 to read: "Sign placement shall be such that no point in the exit access is more than 100 ft from a position where the nearest sign is visible."

SUBSTANTIATION: To clarify code. I believe the intended requirement is to see an exit access sign if I have 100 feet maximum from where I stand. Some interpret current code language to mean there must be a sign within 100 feet from any point.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: See Proposal 101-112 (Log #191) on 5-10.1.4 which deletes the 100 ft criterion.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NEGATIVE: 0

NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF NEGATIVE VOTING:

Marina Batzke, American Permalight, Inc.

RECOMMENDATION: Add a second exception to 5-10.1.4 to read: "Exception No. 2: Photoluminescent signs shall provide luminance for at least 1 1/2 hours in the event of failure of normal lighting."

COMMITTEE ACTION: Reject.

SUBMITTER: Marina Batzke, American Permalight, Inc.

RECOMMENDATION: Add a second exception to 5-10.1.4 to read: "Exception No. 2: Photoluminescent signs shall provide luminance for at least 1 1/2 hours in the event of failure of normal lighting."

COMMITTEE ACTION: Reject.

SUBMITTER: Marina Batzke, American Permalight, Inc.

EXPLANATION OF NEGATIVE VOTING:

Marina Batzke, American Permalight, Inc.

RECOMMENDATION: Add a second exception to 5-10.1.4 to read: "Exception No. 2: Photoluminescent signs shall provide luminance for at least 1 1/2 hours in the event of failure of normal lighting."

COMMITTEE ACTION: Reject.

SUBMITTER: Marina Batzke, American Permalight, Inc.

EXPLANATION OF NEGATIVE VOTING:

Marina Batzke, American Permalight, Inc.

RECOMMENDATION: Add a second exception to 5-10.1.4 to read: "Exception No. 2: Photoluminescent signs shall provide luminance for at least 1 1/2 hours in the event of failure of normal lighting."

COMMITTEE ACTION: Reject.
Add an exception to 5-10.1.6 to read:

Exception: Photoluminescent floor proximity egress path marking shall provide a luminance for at least 1 1/2 hours in the event of failure of normal lighting. The minimum luminance shall fulfill the requirements of the German standard DIN 67510 in four parts (latest edition).

STUBSTANTATION:

We believe that changes to NFPA 101, Sections 5-10.1.4 and 5-10.1.6 are needed to provide for integration of photoluminescent floor proximity EXIT signs and photoluminescent floor proximity egress path marking as a requirement (not only recommendation). Our proposal is based on the following explanations.

Recent building disasters have shown that electrical emergency lighting can fail:

- due to power failures
- due to emergency back-up generator failures
- due to building fires with thick smoke that obscures the electrical lighting installed at a high level (under the ceiling or above doors).

Photoluminescent floor proximity EXIT signs are a life-saving supplement to high level installed EXIT signs. The luminance provided in all the before-mentioned situations because the photoluminescent material was charged sufficiently before (a) the power failure, (b) before the back-up generator failed to kick in, or (c) before thick smoke rose to the ceiling, thus obscuring the electrical lighting installed at a high level (under the ceiling or above doors).

Photoluminescent floor proximity EXIT signs provide sufficient light indications and a continuous egress marking. They function underneath a dangerous smoke level and help building occupants to find the way out while crawling on their hands and knees.

After the explosion at the World Trade Center, New York in February 1993, more than 1,000 people were treated for injuries they suffered during the explosion and during the evacuation. Smoke from the fire and the bomb, as well as structural dust, spread up the elevator shafts and migrated to upper floors. The article in the March/April 1995 issue of NFPA JOURNAL evaluates this incident in more detail. The World Trade Center now has photoluminescent paint installed in their stair wells (each stair tread and the handrails painted), as shown in a photo on page 63 of NFPA JOURNAL's report. As we were their supplier of photoluminescent epoxy paint, we know how concerned they have become since the incident. The Port Authority of New York and New Jersey carefully compared different grades of photoluminescence, available on the market, until they finally used our luminance-certified material. This exceeds the requirements of DIN 67510. They will also get photoluminescent signage installed. The Port Authority of New York and New Jersey has installed latest state-of-the-art technology safety measures (in case photoluminescent paint) to offer utmost safety to their building occupants.

Power failures do not always have to be caused by a bomb attack. In January 1995, at Newark Airport New Jersey, a heavy construction operator sliced through the electrical power supply and left the airport paralyzed and in the dark. Back-up power supplies require maintenance. Very often, people only realize after an electrical power failure - when it is too late - that their back-up batteries do not operate. As the report Windstorm leaves Washington in the Dark points out there is a general complacency regarding testing and maintenance of critical emergency power supplies.

Photoluminescent safety products do not require any maintenance. They get charged when the lights are on and perform without any delay whenever the power supply collapses. This guarantees sufficient activation of photoluminescent material before an emergency occurs.

5-10.3.4 requires every floor proximity EXIT sign required by 5-10.1.4, which includes self-illuminated signs, to have a minimum luminance of 0.06 footlamberts (0.21 cd/sq m).

Question: In the industry, photoluminescence is often called self-illuminated. If NFPA talks about self-illuminated, what do you mean? Photoluminescent material or internally illuminated signs that contain a light source within the device?

We believe that photoluminescent material does not need to fulfill this requirement of 0.21 cd/sq (Section 5-10.3.4) because photoluminescent material has the color 'green-yellow' in darkness situations which can best be seen by the human eyes in the dark. The color green-yellow emits a light wavelength averaging between 550 and 550 nanometer, best perceived by human eyes.

Even though luminance declines over time, the human eye adjusts to this decline. Our eyes adapt to dark conditions. Eye sensitivity increases:

10 times in the first 2 minutes of darkness
100 times after 10 minutes
1,000 times after 12 minutes
10,000 times after 20 minutes
100,000 times after 10 hours

Early photoluminescent materials were justifiably considered to be unsatisfactory as part of an escape route system. These products showed a short glow duration and a quick decline of luminance in the dark. The photoluminescent safety industry has developed considerably throughout the years, constantly working on improving the brightness of their products and the duration of the glow. Since various grades of photoluminescent materials for different application purposes are available on the US market, we believe that for photoluminescent floor proximity EXIT signs and path markings a minimum luminance value for various types of photoluminescent safety products should be indicated in NFPA 101, Sections 5-10.1.4 and 5-10.1.6. Minimum luminance values for photoluminescent safety products should be required to avoid that "glow-in-the-dark" gimmick, toy or novelty grades are accidentally used for safety installations.

In Germany, a standard was developed in 1994 exclusively for photoluminescent pigments and escape route systems, specifying minimum luminance values for various types of photoluminescent safety products, available on the market. DIN 67510 consists of four parts, specifying:

Part 1: measurement and marking at the place of production (not only measurement of photoluminescent products at the place of installation)

Part 3: the photoluminescent escape route systems

Part 4: photoluminescent products for safety markings (specifications for the floor proximity path marking components)

Under Part 4, DIN 67510 indicates the minimum luminance requirement for each available type of photoluminescent safety product. Low-glowing products cannot qualify, as they would fail twice:

(a) while testing the luminance at the place of production, and
(b) when testing the luminance at the place of installation.

Of April 1, 1995, the Accident Prevention Regulation VBG 125 of the German Trade Association has made DIN 67510 an obligatory legal norm in Germany.

The German standard has become the forerunner for other European countries: they either have already adopted or are in the process of currently enacting them in their national regulations. The German DIN 67510 was agreed as their standard for photoluminescent floor proximity escape route systems. Mexico also is almost ready to adopt their version of the German DIN 67510.

To the best of our knowledge, the German standard DIN 67510 from 1994 in four parts is currently the most up-to-date standard that addresses photoluminescence. It contains latest state-of-the-art technology for this material like no other standard worldwide.

The International Maritime Organization with the US Coast Guards as an important member implemented IMO Resolution A.752(18) in November 1993, requiring Low Location Lighting on board passenger ships with more than 36 passengers. IMO clearly specifies the luminance and decay time of photoluminescence at the place of installation, guaranteeing that the user gets a safety product installed. All photoluminescent products have to emit 2.0 milli candela per square meter (mcd/m²) luminance at the place of installation sixty minutes after the removal of the existing light source. This minimum requirement makes sure that only safety products are installed. These international standards and regulations require a continuous, uninterrupted marking of the entire escape route.

In Section 5-10.1.6, NFPA also requires delineating the path of travel from an emergency occurs. Part 4 also describes the luminance values for each type of product which shall be essentially continuous except as interrupted by doorways, hallways, corridors, or other such architectural features but only where specifically required by Chapters 8 through 30. Photoluminescent safety products are available in many different forms, such as signs, wall and floor paints, aluminum wall profiles, plastic or metal floor inserts, wall base, corner guards, feature- and guidance strips, pee floor tiles, grading markers, stair treads, and many more.

The report EVACUATING IN SMOKE by IGP AS, Trondheim, Norway finds that: even in the most extreme of smoke density known to be encountered in evacuation from fires (not tested), optimum performance of photoluminescent marking will perform the best and is most and equal to the best of powered visual systems. With regards to traditional [electrical] emergency lighting systems, the Norwegian study says:

Recently, it has been proven by statistics, studies of behavior and experiments that these systems do not suffice. Further, it has become documented that casualties in evacuation catastrophes to a large extent are linked to a lack of relevant emergency egress information. Integrated building security systems can only work well in the event of an emergency. A continuous selection of photoluminescent safety products creates a continuous, uninterrupted marking of the entire escape route, whereas electrical lighting only offers point lighting. Photoluminescent products can highlight uneven floor surfaces.

Even though photoluminescent yellow low-location lighting offers building occupants a lighted clue and continuous indicator that helps to safely locate and reach the exit, as found in the BRE Information
Paper that researched photoluminescent markings for escape routes: Luminous escape route marking systems can serve the same purposes as escape lighting advocated in BS [British Standard 5266 - i.e., in identifying exits on floors, providing a readily identifiable path for safe movement and locating fire-fighting equipment. The use in emergency escape systems of photoluminescent material therefore warrants serious consideration by designers, specifiers and the safety industry in general.

At the place of installation, the luminance of photoluminescent products can be measured with a portable luminance meter. Technical information is enclosed. The fire marshals and other inspection officials who ensure that buildings comply with emergency evacuation codes use this luminance meter to ensure that installed material complies with the standard requirements.

The report PROPERTY LOSS RISES IN LARGE-LOSS FIRES in NFPA Journal describes in Table 5 that in 1993 direct property loss resulting from large fires increased even though many buildings were equipped with automatic smoke detection systems, sprinkler systems and other preventive measures. Various contributing factors may cause parts of these measures to fail in an emergency, as reflected in Table 5. Therefore, utmost safety has to be the goal, requiring latest state-of-the-art technologies. Photoluminescent safety material has become technically justifiable, since measuring its luminance at the place of production and the place of installation assures product quality and guarantees escape-aiding performance.

Currently, NFPA 101, Section 5-10 allows self-luminous EXIT signs as marking of Means of Egress. The luminance output of self-luminous signs is achieved by using a radioactive tritium gas. These signs will become radioactive waste after their lifetime has expired (10 to 20 years depending on the supplier's specification). We read sales literature of various self-luminous sign suppliers but found no sign indication that their signs actually contain radioactive ingredients (phosphor & tritium gas). We are afraid end-users may not be aware of the fact that they have radioactive signs installed. In 10 or 20 years, they may simply dispose of such signs with their standard waste, not realizing the damage this causes to the environment we live in.

Photoluminescent safety products are non-radioactive and non-toxic. The glow-effect is achieved by using a completely safe zinc-sulfide pigment. In former times, the term "phosphorescent" was used to describe the glow-effect. Nowadays, this old term is not used anymore to avoid confusion among end-users and to sharply distinguish safe photoluminescent products from self-luminous, radioactive material.

We are already in contact with ASTM, Philadelphia, pursuing adoption of all four parts of the German DIN 07510 in order to create an expedited standard for photoluminescent floor proximity egress path marking in the United States. For further information, please contact ASTM, Mr. John Vowell, Phone (215) 2995496.

We believe photoluminescent EXIT signs and floor proximity path markings should be encouraged by NFPA and adopted to add their performance to the Life Safety Code. Please add photoluminescent EXIT signs as Exception 1 to 5-10.4.1. and allow and mandate photoluminescent floor proximity path marking under 5-10.1.6. As members of NFPA's Industrial Fire Protection Section and Building Fire Safety Systems Section, we would like to actively participate in the incorporation of photoluminescent safety products into the Life Safety Code requirements.

SOURCES

1 ARCHITECTURAL RECORD article by J.S.R.: Systems Failed in Attack; April 1993
2 DAILY BREEZE: Quake in Los Angeles, January 18, 1994
3 DISASTER RECOVERY JOURNAL article by Steve Gomes: Winstream Leaves Washington In The Dark; July/August/September 1994
5 FAMILY SAFETY & HEALTH NATIONAL SAFETY COUNCIL magazine by Julia L. Lawson: Stop Home Fires Before They Begin; Fall 1994
6 NFPA JOURNAL article by Rita F. Faby & Gaylene Proulx: A Study of Human Behavior During the World Trade Center Evacuation; March/April 1995
7 Luminance Test Certificate for PERMALIGHT® Two-Components-Photoluminescent Epoxy Paint, Flexible Vinyl, Rigid PVC Sheets, Floor Covering
8 STAR LEDGER article by Elizabeth Moore and Ted Sherman: Airport had little backup to replace lost power; January 11, 1995
9 Surface and Emission Spectra of Long-lasting Photoluminescent Pigments; Source: PERMALIGHT AG, Germany
10 An Introduction to Photoluminescent Escape Route Systems Extract from "Safety in the Built Environment" Edited by Jonathan D. Simé First Published in 1988 by E & FN Spon Ltd
11 DIN 07510 in four parts, most recent issue from 1994
12 VBG 125, Accident Prevention Regulation of the German Trade Associations
13 IMO Resolution A. 752(18) from November 1993
14 IGP AS, Trondheim, Norway: EVACUATING IN SMOKE; 1993
15 BUILDING RESEARCH ESTABLISHMENT, Watford, England
16 Legionnaire's disease, severity of illness, and death rate; June/August/September 1994
18 Letters from Fire Marshals Association of North America, International Association of Fire Chiefs, New England Association of Fire Marshals in favor of floor proximity egress path markings
19 THE COMMISSION ON MORTGAGE EQUITY LOAN SECURITY. An operation of Security Dispositions: "Debt to Equity"; November 1994
20 NOTE: Supporting material is available for review at NFPA Headquarters.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The Code currently permits photoluminescent floor proximity egress path marking, so one of the proposed exceptions is not needed. With regard to floor proximity exit signs, the submitter's documentation suggests that the illumination levels that would be provided are less than required by current Code. The submitter has not justified these reductions.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

(Log #157)

MFA 101-115. (5-10.4.3 and A-5-10.4.3 (New)) Accept in Principle

SUBMITTER: John H. Kote, Building and Fire Research Lab, NIST

RECOMMENDATION: Add a subsection 5-10.4.3 on elevators signs as follows:

5-10.4.3 Elevator Signs. Elevators that are a part of a means of egress shall have the following signs in every elevator lobby:
(a)* signs that indicate that the elevator can be used for egress including any restrictions on use, and
(b)* signs that indicate the operational status of elevators.
A-5-10.4.3(a) These signs are to be used in place of signs that indicate that elevators should not be used during fires, and examples of these signs are:

(1) For elevator operation in accordance with 5-2.13.10(a): "In the event of fire, this elevator will be used by the fire department for evacuation of people with mobility limitations."

(2) For elevator operation in accordance with 5-2.13.10(b): "In the event of fire, use marked exit stairs or elevators."

A-5-10.4.3(b) The wording these messages should reflect considerations of human behavior in fires and the control specifics of the elevator system. This section addresses signs, but provisions for notification of the setting impaired need to be considered. For information on human behavior considerations with elevator evacuation see Groner and Levin's paper Human Factors Considerations in the Potential for Using Elevators in Building Emergency Evacuation Plans, Levin and Groner's paper Human Behavior Aspects of Staging Areas for Fire Safety in GSA Buildings, and Levin and Groner's paper Human Factors Considerations for The Potential Use of Elevators of Fire Evacuation of FAA Air Traffic Control Towers. Some examples messages on signs that could be displayed are:

<table>
<thead>
<tr>
<th>Elevator Status</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Use</td>
<td>Elevator in Service</td>
</tr>
<tr>
<td>Elevators recalled and waiting for fire service</td>
<td>Please Wait For Fire Department</td>
</tr>
<tr>
<td>Fire service arrived and evacuating people</td>
<td>Elevator Evacuation in Progress</td>
</tr>
<tr>
<td>Occupants using normal elevator operation for evacuation</td>
<td>Elevator Evacuation in Progress</td>
</tr>
<tr>
<td>Elevator out of service</td>
<td>Elevator Out of Service</td>
</tr>
</tbody>
</table>

SUBSTANTIATION: This material supports other suggested changes to Chapter 5 of NFPA 101 that allow an elevator to be a component of a means of egress.
COMMITTEE ACTION: Accept in Principle.
Add the text for a new subsection 5-10.4.3 and corresponding appendix items on elevators signs as recommended by the submitter, and add letter height criteria so that the material will read (underlined text added by committee):

5-10.4.3 Elevator Signs. Elevators that are a part of a means of egress shall have the following signs, with minimum letter height of 5/8 in. (1.6 cm), in every elevator lobby:

(a)* signs that indicate that the elevator can be used for egress including any restrictions on use, and

(b)* signs that indicate the operational status of elevators.
5-10.4.3(a) These signs are to be used in place of signs that indicate that elevators should not be used during fires, and examples of these signs are:

(1) For elevator operation in accordance with 5-2.13.10(a): "In the event of fire, this elevator will be used by the fire department for evacuation of people with mobility limitations."

(2) For elevator operation in accordance with 5-2.13.10(b): "In the event of fire, use marked exit stairs or elevators."

A5-10.4.3(b) The wording these messages should reflect considerations of human behavior in fires and the control specifics of the elevator system. This section addresses signs, but provisions for notification of the seeing impaired need to be considered. For information about human considerations with elevator evacuation see Groner and Levin's paper Human Factors Considerations in the Potential for Using Elevators in Building Emergency Evacuation Plans, Levin and Groner's paper Human Behavior Aspects of Staging Areas for Fire Safety in GSA Buildings, and Levin and Groner's paper Human Factors Considerations for The Potential Use of Elevators of Fire Evacuation of FAA Air Traffic Control Towers. Some examples messages on signs that could be displayed are:

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<td>Elevator Out of Service</td>
</tr>
</tbody>
</table>

COMMITTEE STATEMENT: The Committee Action does all that the submitter requested and also adds minimum sign letter height criteria. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 2 Behrens, Tomy

EXPLANATION OF NEGATIVE: HODGENS: While I understand and appreciate the extensive research being conducted to improve the safety of elevators during fires, particularly as this research relates to the egress of the mobility impaired, I must indicate my concern with approving elevators for use as a secondary means of egress. Based upon documented New York City and national fire experience, elevators have failed at an unacceptable rate. Until technological changes are documented and empirical tests substantiate the proposed change, I believe it would be dangerous and premature to approve such use of elevators as a means of egress.

Section 5-10 for battery operated emergency exit signs. When the testing and maintenance criteria were in Chapter 31, users were required to test the emergency exit signs because they were part of the emergency lighting system; but with the move of 31-1.3.7 to 5-9.3 the testing requirements no longer apply to exit signs. The proposed language refers the user to 5-9.3 for the maintenance and testing requirements for exit signs powered by batteries. Also, 5-10.5.1 was written to require monthly visual inspection of the exit signs to determine if any of the lamps have failed. The continued operation of the exit sign illumination source is important to occupant safety and the usability of the egress system.

COMMITTEE ACTION: Accept.

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-117 - (5-11.5 (New)): Accept in Principle
SUBMITTER: Gregory J. Calabini, Exit Seminars
RECOMMENDATION: Add a new 5-11.5 to read:
5-11.5 Doors serving hazardous areas with occupant loads greater than five and equipped with latching devices shall be permitted where equipped with panic or fire exit hardware complying with 5-2.1.7.

COMMITTEE STATEMENT: The Committee Action does what the submitter requested and also adds wording to refer the user to Section 2.1.7 which contains criteria for panic and fire exit hardware. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Behrens, Tomy

101-118 - (6.2.1): Accept in Principle
SUBMITTER: Peter P. Petresky, Pennsylvania Department of Health
RECOMMENDATION: Retain existing text in 6-2.1 Construction;

ADD: Where the building or facility includes additions or connected structures of different construction types, the rating and classification of the structure shall be based on (a) separate buildings or (b) the least fire resistive type of construction of the connected portion(s), if no such separation is provided. Openings which may occur within 2-hour fire walls separating buildings shall be protected in accordance with 6-2.3.3.5 and 6-2.3.6.

SUBSTANTIATION: Section 1.6 of each occupancy chapter contains the minimum construction requirements for the particular classification of occupancy. Over the life of the original building additions may be built which have varied types of construction, making it difficult to determine the overall type of construction of the structure. In the case of health care occupancies, Sections 12-1.1.4.1 and 13-1.1.4.1 do not require a 2-hour fire barrier between new construction and an existing building. The Code does not explain how the construction classification of the overall structure is based after one or more unseparated additions of differing types of construction and/or story height are joined as one building. It is permissible by Code to add a 3-story Type II (III) Protected Noncombustible addition to an existing Type V (000) Unprotected Wood Frame health care facility without a fire barrier. If this is permitted, is the entire structure considered, in a worst case scenario, as a 3-story unprotected wood frame building? As the authority having jurisdiction responsible for the approval of construction documents and inspections involving health care facilities within my jurisdiction, I have experienced both...
unseparated horizontal additions, and vertical additions (adding stories), of different construction types to existing facilities. In some cases untreated wood construction is introduced or discovered within an otherwise fire resistive or noncombustible structure, contrary to Code, affecting the portion containing wood construction, and possibly the entire unseparated complex due to a lack of fire wall(s).

The proposed text requires vertically aligned fire walls to define "buildings" of different construction types. The term fire wall is utilized purposely to eliminate the possibility of stacking one construction type over another construction type, or portion or another type.

In support of the proposed amendment reference NFPA 101M, Alternative Approaches to Life Safety, Safety Parameter (Table 4-1), within an otherwise fire resistive or noncombustible structure, COMMITTEE ACTION: Accept in Principle.

RATIONALE: The Committee Action considers vertically aligned fire walls to define "buildings" of different construction types. The term fire wall is utilized purposely to eliminate the possibility of stacking one construction type over another construction type, or portion or another type.

COMMENT ON AFFIRMATIVE: MESSERSMITH: Revise Section 6-2.1.2 (a) to read:

"(a) separate buildings if a 2-hour or greater fire resistance rated barrier exists between the connected portions of the building, or
(b) the least fire resistive type of construction of the connected portions, if no such separation is provided.

Openings within the minimum 2-hour fire resistance rated barriers separating buildings in accordance with (a) shall be protected in accordance with 6-2.3.3, 6-2.3.5, and 6-2.3.6.

COMMITTEE STATEMENT: The Committee Action recommends that the terms "fire protection rating" be used consistently with other usage in the Code; and deletes the submitter's request that the fire barriers be "vertically aligned." The committee see no reason to limit such separating construction to "vertically aligned" barriers. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 25
NEGATIVE: 1
NOT RETURNED: 2 Bender, Notarianni
EXPLANATION OF ABSTENTION:
KLEIN: I think our reference to NFPA 221, "Standard for Fire Walls and Fire Barrier Walls" is premature since our committee's use of the term "fire barrier" may not be intended for application in the same way as is intended by NFPA 221. We permit a "fire barrier" under existing Section 6-2.3.5 to be a minimum of 20 minutes and under proposed Log #192 to be a minimum of 30 minutes. If we reference Chapter 3 of NFPA 221, Chapter 3 (3-1) requires compliance with Chapter 4 of NFPA 221. Section 4.2 of NFPA 221 requires "Penetration Seals" per ASTM E814, which would then be applicable to NFPA 101 "fire barrier" that is fire rated less than one hour. Also, Section 3-2 of NFPA 221 on "Termination Points" may not be what our committee is perceiving when designing a 20 or 30 minute "fire barrier" under NFPA 101. As long as we use under NFPA 101 the term "fire barrier" for assemblies under one hour fire rated, we better be very clear of our reference to another NFPA standard that may not have considered how we use this term. We may cause these common 20-30 minute "fire barriers" to be very costly to build and maintain without any reasonable justification.

AFFIRMATIVE: 23
NOT RETURNED: 2 Bender, Notarianni
EXPLANATION OF VOTE ON COMMITTEE ACTION:
KLEIN: I think our reference to NFPA 221, "Standard for Fire Walls and Fire Barrier Walls" is premature since our committee's use of the term "fire barrier" may not be intended for application in the same way as is intended by NFPA 221. We permit a "fire barrier" under existing Section 6-2.3.5 to be a minimum of 20 minutes and under proposed Log #192 to be a minimum of 30 minutes. If we reference Chapter 3 of NFPA 221, Chapter 3 (3-1) requires compliance with Chapter 4 of NFPA 221. Section 4.2 of NFPA 221 requires "Penetration Seals" per ASTM E814, which would then be applicable to NFPA 101 "fire barrier" that is fire rated less than one hour. Also, Section 3-2 of NFPA 221 on "Termination Points" may not be what our committee is perceiving when designing a 20 or 30 minute "fire barrier" under NFPA 101. As long as we use under NFPA 101 the term "fire barrier" for assemblies under one hour fire rated, we better be very clear of our reference to another NFPA standard that may not have considered how we use this term. We may cause these common 20-30 minute "fire barriers" to be very costly to build and maintain without any reasonable justification.
RECOMMENDATION: Add the following to subsections 6-2.3 and 6-3.1: "Provide stenciled identification for rated partition construction placed above the finished ceiling at 10 ft. 0 in. intervals or once on any partition less than 10 ft in length. The identification for fire barriers will in accordance with 6-2.3.2. Smoke partitions will be designated "1 Hour Smoke". Stenciling characters to be of 4 in. minimum height and of any easily identifiable color."

SUBSTANTIATION: To inform tradesmen, such as telephone/communication workers, that the partition is a fire or smoke partition and that new holes and penetrations must be properly sealed with the appropriate stopping material. This will also facilitate improved maintenance of the entire partition assembly and will allow for ease of tracing the partitions when the need arises.

This should also apply in existing buildings upon verification of partition rating and routing.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The proposed requirement is not necessary as part of a minimum code. Such markings are not guaranteed to deter new unauthorized penetrations.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Bender, Notarianni

EXPLANATION OF NEGATIVE:

MCGEE: The substantiation of change is inadequate. The term, "including supporting construction" should be deleted. The insertion of the above words in the first sentence is inappropriate and adds noting to the requirement that the floor-ceiling assemblies and walls shall be of a design that has been tested to meet the requirements of NFPA 251.

KLEIN: I am changing my vote to a negative based on the negative comment of Mr. McGee.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 25

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 22

NEGATIVE: 3

NOT RETURNED: 2 Bender, Notarianni

SUBSTANTIATION: The Technical Correlating Committee on Fire Protection Features (FIR) reconsider the substantiation for the proposal in view of the explanation of negative vote received from Mr. McGee. The current substantiation states that the revision is editorial.

SUBMITTER: Technical Committee on Fire Protection Features, (FIR) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Fire Protection Features (FIR) reconsider the substantiation for the proposal in view of the explanation of negative vote received from Mr. McGee (Log #63). The current substantiation states that the revision is editorial.

RECOMMENDATION: Revise the first sentence of 6-2.3.1 to read: "Floor ceilings and walls used as fire barriers, including supporting construction, shall be of a design that has been tested to meet the conditions of acceptance of NFPA 251, ...

SUBSTANTIATION: The revision is editorial for clarity.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 25

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 2 Carson, Deal

EXPLANATION OF NEGATIVE:

MCGEE: The substantiation of change is inadequate. The term, "including supporting construction" should be deleted. The insertion of the above words in the first sentence is inappropriate and adds noting to the requirement that the floor-ceiling assemblies and walls shall be of a design that has been tested to meet the requirements of NFPA 251.

KLEIN: I am changing my vote to a negative based on the negative comment of Mr. McGee.
Second, it simplifies the Code with regard to those barriers with ratings less than 1-hour. The Code, uses 3/4-hour, 1/2-hour, and 30-minute almost arbitrarily throughout the document. Whenever this has been discussed by various NFPA 101 technical committees, the main objective was to allow existing walls that are in good shape and that provide reasonable fire resistance to continue in use. Although these are sometimes found in the "new" chapters, it is generally there for conversions since these ratings are not typical in modern construction. It has generally been accepted that a lath and plaster wall in good shape should not have to be replaced where a one-hour barrier is required. Reviewing the archaic fire resistance directory there are numerous ratings for various lath and plaster walls. It is virtually impossible to verify the exact make up of most lath and plaster walls. However, 30-minute fire resistance appears to be a reasonable expectation for a lath and plaster wall in good condition. Therefore the proposal simplifies the Code, eliminates confusion and is slightly more accurate. It also helps people who have to enforce the Code on existing buildings significantly by reducing the fudge factor.

Third, the fire door for the 1/2-hour fire protection rated assembly has been coordinated with the requirements for a corridor wall (see 6-2.3.5(b)).

**COMMITTEE ACTION:** Accept in Part.

Revise 6-2.3.2 to read as follows:

6-2.3.2 Fire barriers used to provide enclosure, subdivision or protection under this Code, shall be classified in accordance with their fire resistance rating as follows:

(a) 2-hour fire resistance rating

(b) 1-hour fire resistance rating

(c) 1/2-hour fire resistance rating

Add a new appendix note to read:

A-6.2.3.2(c) Walls in good condition with lath and plaster, or gypsum board of at least 1/2-in. thickness, on each side of the wall, can be considered as providing at least a 1/2-hour fire resistance rating. Revise 6-2.3.5 by deleting parts (c), (d) and (e) and adding a new (c) to read:

(c) 1/2-hour fire barrier - 20-minute fire protection rating.

Exception to (c): Where doors shall be permitted to have a minimum 20 minute fire protection rating when tested in accordance with NFPA 252, Standard Methods of Fire Tests of Door Assemblies, without the loose stream test. Do NOT change all references to 3/4-hour fire resistance rating and 20-minute (or 1/3-hour) fire resistance rating to 1/2-hour fire resistance rating.

**COMMITTEE STATEMENT:** The Committee Action revises subpart (c) and adds a corresponding exception because (c) needs to address all opening protective such as windows, not just doors.

The Technical Committees responsible for the other chapters, especially the occupancy chapters, will be shown the above changes.

They can generate committee proposals to accomplish the submitter's last recommendation, as appropriate. The submitter has not specified which paragraphs will require such changes for consistency.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 23

**NEGATIVE:** 2

**NOT RETURNED:** 2

**EXPLANATION OF NEGATIVE:**

**BILLING:** While I do not disagree with the intent of this proposal, it needs to be correlated with the occupancy chapters of the Code. Chapter 28, equates partitioning finished on both sides with lath and plaster, or material providing a 15-minute thermal barrier, to a 20-minute rating, as does Appendix item A-15-3.6.2.1. By not changing the references to 3/4-hour and 20-minute fire barriers throughout the code, a void is being created. Where 3/4-hour and 20-minute fire barriers are currently used, there would be no requirement for protection of the opening, unless the occupancy chapter specifically indicated a localized requirement. If we cannot correct the Code, we should not create conflicts and confusion by a piece meal approach.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** Nonrated doors are permitted to have plant-ons such as armor plating. If the door is a fire door, armor plating is available as part of the door assembly purchased. Such plates should not be added to existing fire doors because they might affect the performance of the door.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 22

**NEGATIVE:** 2

**NOT RETURNED:** 2

**EXPLANATION OF NEGATIVE:**

**Daly:** The committee statement fails to take into account changing conditions in the field. The use of non-combustible armor plating is likely to have little affect on fire performance of the door and is more likely to assist in maintaining the fire integrity of the door given less likelihood for physical damage.

**Stone:** "Equivalent" construction does not intend to verify the fire rating for a door. I agree the kickplate should not be an issue with doors that do not bear a label and are not required to meet NFPA 80 requirements.

**COMMITTEE ACTION:** Reject.

**COMMITTEE STATEMENT:** Where severe fires may expose occupants to dangerous egess in large or tall buildings or to waiting out the fire in areas of refuge there should be provisions for the inclusion of stronger fire barrier doors. Discussions and testing of doors under positive pressure conditions which might be expected in an extended fire bring validity to the consideration of another type of fire door for special applications.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 23

**NEGATIVE:** 1

**NOT RETURNED:** 2

**EXPLANATION OF NEGATIVE:**

**CaHAnIn:** I am voting negatively on the committee action for this proposal. The committee statement does not correctly reflect the issues or a reason for rejection. My justification for a negative vote are:

The National Research Foundation has completed positive pressure testing. The test data are the end result of this project. There will be no conclusions or interpretations as a part of this project.
There are new provisions in NFPA 252 which cover positive pressure testing. While NFPA 80 does not address positive pressure testing, it does reference NFPA 252. The proposed change would therefore be technically accurate and would allow for performance changes in fire door application.

Occupancy chapters do not have to specify what fire door testing is required, they need only to reference the proposed 6-2.3.5(c) when a fire door has an extended period of time tested. A proposal to require the installation of fire doors tested under positive pressure in building stairwells over 150 ft in height was submitted for 30-8 with a reference to this change. The proposed high rise change would not place any additional test requirements on the committee. In that the change is justified by the extended period of time occupants of a high rise may spend in a stairwell.

The original proposal is intended to apply only when occupancy changes occur due to a new use of an existing building. As the submitter, I did not intervene to require all fire doors to be tested under positive pressure as the "same tests can be applied" sentence of the committee statement concludes. Positive pressure tested doors need not be required when it exists a potential for occupants to be exposed to the fire threat for an extended period of time due to stairwells which become waiting spaces or areas of refuge which must maintain tenability.

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Note: Supporting material is available for review at NFPA Headquarters.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The submitter's rationale is not convincing because it is based on tests where some specimens failed prior to application of the hose stream. These proposed changes should not be accepted because testing was based on an uncommon scenario where little water is applied to glazing: water supply stops and glazing is heated. The testing did not replicate a real world situation.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 23

ABSTENTION: 1

NOT RETURNED: 2 Bender, Notarianni

EXPLANATION OF ABSTENTION:

STONE: In accordance with Standards Council policy, special experts must refrain from voting on subjects for which they have been retained to represent the interests of a client.

(Log #173)
VOTE ON COMMITTEE ACTION:
what the submitter requested but does not make the requirement retroactively applicable to existing fire windows. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
COMMITTEE ACTION: Accept in Principle.

AFFIRMATIVE: 17
NEGATIVE: 6
ABSTENTION: 1

COMMITTEE STATEMENT: The Committee Action accomplishes what the submitter requested but does not make the requirement retroactively applicable to existing fire windows. This should meet the submitter's intent.

EXPLANATION OF NEGATIVE:

BILLING: If it is the desire of the submitter to add temperature rise as a condition of acceptance for fire windows, the appropriate location would be in NFPA 257. Currently, NFPA 257 contains no requirements for even recording the temperature rise in Chapter 5, much less using temperature rise as a condition of acceptance.

BUDNICK: There is inadequate evidence to indicate a concern exists. No substantiation or evidence is provided to indicate that the limit on temperature rise of 250°F for windows in fire barriers is critical. The 250°F temperature rise for the limited areas allowed for windows, as opposed to an entire building, could be critical in certain arrangements. In these cases, the arrangements could be controlled, instead of the window characteristics.

DALY: I agree with the rationales outlined in the negative votes of Messrs. Billing, McCormick, Budnick and Messersmith.

KLEIN: I am changing my vote to negative based on the negative comments of the committee members.

MC CORMICK: The current code language has been in effect for many years. No experience has been presented to demonstrate the ineffectiveness of the current requirement. While I agree that the change will be more conservative and perhaps more effective, the need has not been substantiated. I believe that this change is overly restrictive.

MesserSmith: This proposal will require that windows installed in fire barrier walls have a maximum temperature rise on the unexposed surface at the end of the first 30 minutes of the fire test of no more than 250°F. I am not opposed to limiting the temperature rise on fire windows, but windows are not the only components that are installed in fire barrier walls. While windows are limited to no more than 25% of the area of the wall in which installed, fire doors can be installed within the wall without area limitations. In addition, there is no temperature rise limitation in the code for doors installed in fire barrier walls, except for doors in exterior stair enclosures. Based on the foregoing, I am opposed to this proposal since fire doors are not being subjected to the same temperature rise limitations.

EXPLANATION OF ABSTENTION:

STONE: In accordance with Standards Council policy, special experts must refrain from voting on subjects for which they have any business interest. This is a function of the client's name requesting that the Life Safety Technical Committee on Fire Protection Features (FIR) reconsider its action.

SUBMITTER: James K. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Add a new Exception No. 8 as follows:

(6-2.3.5.1 (Use current 6-2.3.5.5 as otherwise modified))

Exception No. 8: Mail chutes.

101-132 - (6-2.4.5 (New) and exceptions to 10-3.1, 11-3.1, 12-3.1.1, 13-3.1, 14-3.1.1, 15-3.1.1): Accept in Principle in Part

COMMITTEE STATEMENT: The Committee has not proposed any limitation on the size of the mail chute openings. There is no assurance that the potential for smoke and heat spread is minimized. The proposal does not address new versus existing chutes, nor any limitations on the location of the chute within the building.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
COMMITTEE ACTION: Accept in Principle in Part.

AFFIRMATIVE: 22
NEGATIVE: 2
ABSTENTION: 2

COMMITTEE STATEMENT: The submitter has not proposed any limitation on the size of the mail chute openings. There is no assurance that the potential for smoke and heat spread is minimized. The proposal does not address new versus existing chutes, nor any limitations on the location of the chute within the building.

EXPLANATION OF ABSTENTION:

POTTER: I am changing my vote to negative based on Mr. Daly's negative comment.

KLEIN: I am changing my vote to negative based on Mr. Daly's negative comment.
• not to include them. If an occupancy wants to further restrict it, that
openings within a guest room or guest suite.
(c) Such openings shall be separated from corridors, and
building construction shall be permitted as follows:
(a) Such openings shall connect a maximum of two stories (pierce
one floor only), and
(b) Such openings shall be separated from unenclosed vertical
openings serving other floors by a barrier complying with 6-2.4.4,
and
(c) Such openings shall be separated from corridors, and
(d) Such openings shall not serve as a required means of egress.
Remainder text of 6-2.4.5 and subsequent paragraphs.
Add the following exception to the occupancy chapters that follow:
Exception: Unenclosed vertical openings in accordance with 6-
2.4.5 shall be permitted.
10-3.1 as exception no. 1, delete exception no. 3 and renumber
current exceptions.
12-5.1 as exception no. 1 and renumber current exceptions.
15-3.1.1 replace current exception no. 1.
14-3.1.1 replace current exception no. 1.
15-3.1.1 replace current exception no. 1.
SUBSTANTIATION: This is an attempt to coordinate several
exceptions that are scattered throughout the Code. Some of these
currently only allow stairs, but as pointed out by the Technical
Committee on Health Care Occupancies the main criteria is that the
opening not be concealed. Whether a stair is in the opening or not
is not irrelevant. With the exception of structural and storage occupa-
cies, only those occupancies that currently address such openings
are in the list above. Industrial and storage have been added for two
reasons. First they are commonly a mixed occupancy with business
which allows such openings and secondly, there appeared no reason
to not to include them. If an occupancy wants to further restrict it,
that is fine if it is occupancy justified, but the provisions here should
serve as a good base.
COMMITTEE ACTION: Accept in Principle in Part.
Insert a new 6-2.4.8 (and renumber existing 6-2.4.8 through 6-
2.4.11 as necessary) to read:
6-2.4.8 Convenience Openings. Where permitted by Chapters 8
through 29, unenclosed vertical openings not concealed within the
building construction shall be permitted as follows:
(a) Such openings shall connect a maximum of two adjacent
stories (pierce one floor only), and
(b) Such openings shall be separated from unenclosed vertical
openings serving other floors by a barrier complying with 6-2.4.4,
and
(c) Such openings shall be separated from corridors, and
(d) Such openings shall not serve as a required means of egress.
DO NOT make the recommended occupancy chapter changes.
COMMITTEE STATEMENT: The Committee Action accomplishes
most of what the submitter requested. Editorially, the committee
has positioned the new text as 6-2.4.8 because it is more closely
related to Chapter 47. Also, in (a), the committee has clarified
that the two floors must be adjacent. This should meet most of
the submitter's intent.
The Technical Committees responsible for the occupancy chapters
will be shown the above changes. They can generate committee
proposals to accomplish the submitter's last recommendation, as
appropriate.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
NEGATIVE: 1
UNRETURNED: 2 Bender, Notarifanni
EXPLANATION OF NEGATIVE:
ENDTHOFF: Creation of the new Section 6-2.4.8 on convenience
openings appears to contradict 6-2.4.5, since there are no size or
other limitations on these unenclosed openings between floors.
This proposed criteria, as well as existing 6-2.4.7 should be consid-
ered only in the context of exceptions to 6-2.4.5.
April 13, 1986
(Revised to include new text)
101-133 - (6-2.4.6): Accept in Principle in Part
SUBMITTER: William N. Brooks, Brinjac, Rambic & Assoc.
RECOMMENDATION: Revise the language in 6-2.4.6 as follows:
6-2.4.6 Atriums. Where permitted by Chapters 8 through 29, an
atrium shall be permitted, provided the following conditions are met:
(a) No horizontal dimension between opposite edges of the floor
opening is less than 10 ft (3.0 m), and the opening is a minimum of
1,000 sq ft (93 sq m).
(b) Designate existing paragraph 6-2.4.6(c) as new 6-2.4.6(a).
(c) Reserved.
(d) In new construction, an automated smoke control system shall
be permitted to be within the atrium: Exit discharge in accordance with 5-7.2 is permitted to be
within the atrium.
(e) The occupancy within the space meets the classifications for
life safety as low or ordinary hazard occupancies. (See 4-5.2)
(f) The entire building is protected throughout by an approved,
supervised automatic sprinkler system in accordance with Section 7-
7. Exception to (d), Where the engineering analysis required by 6-
2.4.6(c) determines that life safety objectives can be achieved prior
to sprinkler operation. Where the ceiling of the atrium is more than
10 ft (3.0 m) from the floor, the authority having jurisdiction must
be permitted to allow the omission of sprinklers at the top of the
atrium.
(g) An engineering analysis is performed which demonstrates that
life safety during the egress period will not be compromised. The
engineering analysis must include the following elements: in
new construction, an engineered smoke control system acceptable to the
authority having jurisdiction is provided. Factors such as means of
escape, smoke control system, and life safety during the period of
occupant egress.
(h) The smoke control system is installed to meet the requirements of (e) above, the
engineering system is independently activated by each of the following:
manual controls that are readily accessible to the fire
department.
1. Approved smoke detectors located to detect smoke above the
highest level of the atrium, and return air intakes from the atrium;
and
2. The required automatic sprinkler system;
and
3. Manual controls that are readily accessible to the fire depart-
ment.
COMMITTEE STATEMENT: This proposal is intended to clarify the
intent of the Life Safety Code with regard to atrium spaces, and to move
more towards a performance basis for life safety requirements.
Five conditions are set forth in order to create a new atrium, or to
continue an existing one. The heart of the proposal is the new language in
(e). The intent of the proposed language is to clearly state the intent of the Life Safety Code with respect to atrium
spaces. Therefore, the phrase "life safety during the egress period
will not be compromised" is moved from the Exception to the
primary paragraph. The "engineering analysis" now contained in
the Exception also moves to the primary paragraph. The concept is
simple - unless life safety can be demonstrated, an atrium cannot be
included in new construction, or cannot be maintained in existing
construction.
Specific elements of the engineering analysis are suggested to be
included in the Code language. They are split into three categories
in order to better clarify their relationships, and to provide designers
with a minimum basis to define an acceptable analysis.
It is important to note that the analysis may or may not require a
smoke control system. Such a system would only be required if the
life safety objectives could not be met without it. Similarly, early
detection may be essential, requiring detectors beyond those now
mentioned in 6-2.4.6 (f1).
Such an analysis will provide flexibility for designers, while, at the
same time, provide a minimum basis for the design. This will be
helpful to code officials and authorities having jurisdiction.
Not every opinion expressed in the engineering analysis will have to
be backed up by some sort of numerical analysis, fire model, or
probability statistics. Engineering is much more than plugging
numbers into fire models. Rather, it is anticipated that, by stating
elements which must be incorporated into the analysis, a logical
framework can be provided, from which assessments can be made
rationally. Such a statement of the art knowledge to be used and will allow incorporation of new technol-
ogy as it is developed.
The analysis will not depend on the geometry of the space. Therefore, it is proposed that 6-2.4.6(a) be eliminated. It is suggested that the existing 6-2.4.6(g) be moved into a more prominent place in the text.

The committee needs to eliminate the reference to 55 ft sprinkler heights. Although it is difficult to abandon something which has been in the Code for several cycles, the need for sprinklers at the top of the atrium cannot be based only on the height of the atrium, but should be dependent on the results of the engineering analysis.

**COMMITTEE ACTION:** Accept in Principle in Part.

Proposals 6-2.4.6 and A-6-2.4.6 to read as follows:

6-2.4.6* Atriums. Where permitted by Chapters 8 through 29, an atrium shall be permitted, provided the following conditions are met:

(a) No horizontal dimension between opposite edges of the floor shall exceed 36 ft (10.9 m) and the opening is a minimum of 18 ft (5.5 m).

(b) In new construction, atriums are separated from the adjacent spaces by fire barriers with at least a 1-hour fire resistance rating with opening protective for corridor walls. [See 6-2.5.3(b) Exception No. 2.]

Exception No. 1 to (a). Any three levels of the building shall be permitted to open directly to the atrium without enclosure. [Note: This exception will undergo additional revision by the committee on action on Proposal 101-135 (Log CP507).]

Exception No. 2 to (a), (b). Glass walls and inoperable windows shall be permitted in lieu of the fire barriers where automatic sprinklers are spaced 6 ft (1.8 m) apart along both edges of the glass wall and inoperable windows, not more than 1 ft (0.3 m) from the glass, and with the automatic sprinklers located so that the full area of the glass is wet upon operation of the sprinklers. The glass shall be tempered, wired, or laminated glass held in place by a gasket system that permits the glass framing system to deflect without breaking (loading) the glass before the sprinklers operate. Automatic sprinklers shall not be required on the atrium side of the glass wall and inoperable windows where there is no walkway or other floor area on the atrium side above the main floor level. Doors in such walls shall be glass or other material that will resist the passage of smoke. Doors shall be self-closing or automatic-closing upon detection of smoke. [Note: This exception will undergo additional revision by the committee action on Proposal 101-135 (Log CP507).]

(b) The exits are separately enclosed from the atrium in accordance with 6-2.5.3. Access to exits is permitted to be within the atrium. Exit discharge in accordance with 5-7.2 is permitted to be within the atrium.

(c) The occupancy within the space meets the specifications for classification as low or ordinary hazard contents. [See 4-2.2.3]

(d) The entire building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 7.7. Exception to (d)*: Where the ceiling of the atrium is more than 55 ft (17.8 m) above the floor, the authority having jurisdiction shall be permitted to allow the omission of sprinklers at the top of the atrium. [Note: This exception will be deleted by the committee on action on Proposal 101-135 (Log CP507).]

(e)* An engineering analysis is performed which demonstrates that the building is designed to keep the smoke layer interface above the highest unprotected opening to adjoining spaces or 8 ft (2.4 m) above the highest level of ceiling for a time period equal to 1.5 times the calculated egress time or 20 minutes, whichever is greater.

Exception to (e). Existing previously approved atria, those constructed to NFPA 101, or other sites where the authority having jurisdiction is acceptable, are permitted to operate with the authority having jurisdiction's approval. Factors such as means of egress and smoke control of adjacent spaces is considered.

Exception to (e). An engineering analysis is performed which demonstrates that the building is designed to keep the smoke layer interface above the highest unprotected opening to adjoining spaces or 8 ft (2.4 m) above the highest level of ceiling for a time period equal to 1.5 times the calculated egress time or 20 minutes, whichever is greater.

(f)* In new construction, if a mechanical smoke control system is installed to meet the requirements of (e), automatic sprinkler system is independently activated by each of the following:

1. Approved smoke detectors located to detect smoke above the highest level of the atrium and are return air intakes from the atrium, and 2. The required automatic sprinkler system, and 3. Manual controls that are readily accessible to the fire department.

A-6-2.4.6 Where atriums are used, there is an added degree of safety to occupants because of the large volume of space into which smoke can be dissipated. However, there is a need to ensure that dangerous concentrations of smoke are promptly removed from the atrium, and the exhaust system needs careful design. [Note: This paragraph will undergo additional revision by the committee on action on Proposal 101-135 (Log CP507).]

6-2.4.6 Exception to (e) Exception No. 2. The intent of the requirement for closely spaced sprinklers to wet the atrium glass wall is to ensure that the surface of the glass is wet upon operation of the sprinklers with a maximum spacing of sprinklers of 6 ft (1.8 m) on centers. Provided that the glass can be wet by the sprinklers using a given discharge rate and that the 6-ft (1.8-m) spacing is not exceeded, the intent of the requirement is met.

A-6-2.4.6(d) Exception Automatic sprinklers have been successfully tested at ceiling heights up to 50 ft (15 m). The authority having jurisdiction has permission to omit sprinklers at higher ceiling heights, since it has not been demonstrated that sprinklers directly over the fire will effectively respond to the fire in a timely manner. Sprinkler response should be evaluated prior to the deletion of this element of building fire protection. Although height is an important factor in determining the response time of the sprinkler, other factors such as the size of the fire, its heat release rate, sprinkler characteristics, ventilation, and the total volume of the atrium shall be considered. [Note: This paragraph will be deleted by the committee action on Proposal 101-135 (Log CP505).]

A-6-2.4.6(e) See A-6-2.4.6 Exception. [See NFPA 20, Guide for Smoke Management Systems in Buildings.]

The engineering analysis should include the following elements:

1. Fire dynamics, including fire size and location, materials likely to be burning, fire plume geometry, fire plume or smoke layer impact on means of egress, and fire stability conditions during the period of occupancy of the structure.

2. Response and performance of building systems, including passive barriers, automatic detection and extinguishing, and smoke control. The response time required for building occupants to reach building egress including any time required to exit through the atrium as permitted by 6-2.4.6(b).

A-6-2.4.6(f) Activation of the ventilation system by manual fire alarms, extinguishing systems, and detection systems can cause an unwanted operation of the system, and it is suggested that consideration be given to zoning of the activation functions so the ventilation system operates only when actually needed.

The committee recommends the following changes have been demonstrated as an effective method of detection, smoke, accessibility for testing and maintenance, and ability to overcome problems associated with smoke stratification within the height of the atrium:

1. A potential design to project beam smoke detectors at different levels is recommended.

**COMMITTEE STATEMENT:** The Committee Action accomplishes much of what the submitter requested. Specific performance-based criteria were substituted in (e) with respect to the engineering analysis. The criteria specified are reasonable to accomplish and provide the needed level of safety. The new Exception to (e) is meant to keep existing atria, which formerly had to meet the 20 ft and 1000 sq ft criteria, from being unsafe. The Committee believes that activation of the sprinkler system should remain a condition under which the engineered smoke control system will be activated. The remainder of the changes made by the Committee are editorial for clarification. This should meet much of the submitter's intent.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 26

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 23

**ABSTENTION:** 1

**NOT RETURNED:** 2 Bender, Notarrianni

**EXPLANATION OF ABSTENTION:**

**KLEIN:** I am abstaining against this proposal, but I highly recommend that the new Section 6-2.4.6 be substantiated in the Committee Statement with an example in the Committee Statement and a new appendix note to this section on how to do these calculations for a typical atrium.
be made to the authority having jurisdiction in accordance with the

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 25

NEGATIVE: 1

NOT RETURNED: 2 Bender, Notarianni

EXPLANATION OF NEGATIVE:

Daly: The statement that there is "no technical basis..." should be supported by reference to a literature search since it is an all encompassing statement and overly broad.

Approval would include strong commitments on the smoke management system design and maintenance requirements in combination with the strict control of combustibles.

MESSERSMITH: Currently only three floors in a building containing an atrium are allowed to open directly to the atrium. This proposal will remove this limitation thus allowing all floors, regardless of the number, to be open to the atrium. While our limited experience with modern atria has been positive, it is too soon to remove this restriction which is of vital importance to life-safety.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: See Proposal 101-135 (Log #328) on 6-2.4.6.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24

NOT RETURNED: 2 Bender, Notarianni

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101-135 - (6-2.4.6 Exception No. 1 to (g)): Accept

SUBMITTER: Technical Committee on Fire Protection Features.

RECOMMENDATION: Replace existing Exception No. 1 to (g) with the following:

Exception No. 1 to (g): Any three number of levels of the building shall be permitted to open directly to the atrium without enclosure based on the results of the engineering analysis required in (e).

SUBSTANTIATION: The Committee feels the engineering analysis must take into account the specific engineering techniques and performance based criteria that will be required to design an atrium. Such analyses are capable of determining if and how many, floors can be left open to the atrium. The proposed change uses performance based criteria to assure that adequate safety is provided. The necessary modeling and calculation techniques exist to do this; they did not exist when the atrium criteria were first written for this code.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 22

NEGATIVE: 2

NOT RETURNED: 2 Bender, Notarianni

EXPLANATION OF NEGATIVE:

Galvin: The change from a maximum number of floors open to an atrium is not justified either technically or by fire experience. I know of no cataloging of fires which have occurred in atriums with only three openings and having a smoke control system based upon NFPA 101 requirements or an engineering analysis. Currently there is a limitation of combustibles in an atrium which will be classified as either low or ordinary hazard. Control of the fuel loading on only three floors is readily achieved in part due to the availability of enclosed floors which can have a higher fuel loading. With more than three or all floors open, the management of the fuel loads present on the open floors becomes more difficult.

The engineering analysis is focused on fire growth and smoke spread and control does not use a calculative or computer method which is part of an ANSI standard. Calculative methods used can produce variable results depending upon the knowledge and abilities of the user. Experienced fire protection professionals using sound judgment combined with extensive knowledge of fire growth can predict with some certainty what will happen in a designed fire. Should the fire which occurs in an atrium space be larger than predicted in a calculated model due to actual fuel loading or configuration, the designed smoke and fire control systems may not work.

Throughout the building codes and NFPA 101 there are provisions which reduce fire barriers based upon the installation of automatic sprinklers. The reduction in barrier protection is based upon some calculated justification, but rather upon a fire experience record which demonstrates the success rate of fire sprinklers for both large and small buildings.

The argument for the inclusion of any number of floor openings into an atrium where the smoke obscuration potential from a fire presents an inability for occupants to reach an exit warrants great consideration. Smoke control depends upon a complex mechanical smoke control system which must be properly maintained. In reductions of barriers due to sprinklers we only have to contend with a sprinkler valve and fusible link whose dependability are well proven. In an atrium engineering analysis there is no factor for the systems dependability or the owners maintenance of the air movement components of the smoke management system.

Building owners now have the ability under 1-5 to ask code officials for more than three openings in an atrium. An appeal for equivalency typically requires a more in-depth review of changes outside the standard provisions of the code. I believe a prudent code official would review the concerns I have expressed as a part of the equivalency process and grant additional openings where warranted.

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101-137 - (6-2.4.6 (a)): Accept in Principle

SUBMITTER: Technical Committee on Smoke Management Systems.

RECOMMENDATION: Delete Section 6-2.4.6 (a).

SUBSTANTIATION: Technical advances in the protection of smoke management of atriums have changed since the initial requirements for atriums was incorporated into the Life Safety Code. Today there is no basis for the dimensions specified. Current engineering methods can be used to assist with determining the effects of fire in an atrium. Floors open to the atrium do not apply to spaces where the smallest width is more than half the height.

COMMITTEE ACTION: Accept in Principle. See Committee Action on Proposal 101 - 135 (Log #328) on 6-2.4.6.

COMMITTEE STATEMENT: The Committee Action on the referenced proposal should meet submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24

NOT RETURNED: 2 Bender, Notarianni

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101-138 - (6-2.5.5 Exception No. 3): Accept

SUBMITTER: James Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Revise Exception No. 3 to read:

Exception No. 3: A mezzanine having two or more means of egress need not open into the room in which it is located if at least one of the means of egress provides direct access from the enclosed area to an exit at the mezzanine level.

SUBSTANTIATION: The intent of this exception was to allow larger mezzanine areas than permitted in Exception No. 2 to be enclosed as long as a fire on the lower level did not endanger people egressing from the balcony. When the exception was written at BCMC, the board was thinking of totally enclosed mezzanines. If a mezzanine is partially enclosed, but the enclosed area exceeds an occupant load of 10, the current wording would allow an arrangement which requires the people to come out of the enclosed area to reach the exit, thereby being exposed to smoke, heat and fire from the area below.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 23

NEGATIVE: 1

NOT RETURNED: 2 Bender, Notarianni

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101-139 - (6-3.4 and 6-3.5 (New)): Reject
SUBMITTER: William N. Brooks, Brinjac, Kambic & Assoc.
RECOMMENDATION: Revise 6-3.4 and insert a new 6-3.5 as follows:
6-3.4 Doors
6-3.4.1* Doors in smoke barriers shall close the opening with only a minimum clearance necessary for proper operation and shall be without undercuts, louvers, or grills.
6-3.4.2* Where are fire resistance rating for smoke barriers is specified elsewhere in the Code, door opening protectives shall have a fire protection rating of not less than 20 minutes where tested in accordance with NFPA 252, Standard Methods of Fire Tests of Door Assemblies, without the hose stream test.
Exception No. 1: If a different fire protection rating for smoke barrier doors is specified by Chapters 8 through 29.
Exception No. 2: Latching hardware shall not be required on doors in smoke barriers where so indicated by Chapters 8 through 29.
6-3.4.5* Doors in smoke barriers shall be self-closing or automatically closing in accordance with 5-2.1.8 and shall comply with the provisions of 5-2.1.
6-3.5 Windows. Where a fire resistance rating for smoke barriers is specified elsewhere in the Code, fire windows shall comply with 6-3.4.
Renumber following paragraphs.
SUBSTANTIATION: A recent F.1. illustrated the confusion which the present language causes. By separating the two different types of openings (doors and windows), it is possible to clarify that a hose stream test is unnecessary for the doors, including any installed vision panels. If the committee wishes to eliminate the hose stream test for fire window assemblies, this reordering of the Section will permit such a change to be made.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The proposed change doesn’t clarify current code text. The vision panel in a door does not have to meet fire window requirements; rather, it is a lite and therefore considered as part of the door assembly.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
ABSTENTION: 1
NOT RETURNED: 2 Bender, Notarianni
EXPLANATION OF ABSTENTION:
STONE: In accordance with Standards Council policy, special experts must refrain from voting on subjects for which they have been retained to represent the interests of a client.

101-140 - (6-3.5.1): Accept
SUBMITTER: Technical Committee on Fire Protection Features, Submittals Committee on Fire Protection.
RECOMMENDATION: Revise 6-3.5.1 to read: “…damper designed to resist the passage of smoke shall be provided at each air-transfer opening.”
SUBSTANTIATION: The change in words from “at” to “for” clarifies that the damper need not be installed in the plane of the smoke barrier. NFPA 90A permits the required smoke damper to be installed up to 2 ft from a required smoke barrier. The current wording of 6-3.5.1 has been interpreted by some as prohibiting the use of the 2 ft allowance of NFPA 90A. This is the subject of Formal Interpretation 101-F1.6. With the change printed in the 1997 edition of the Code, the formal interpretation can be retired.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Bender, Notarianni

101-141 - (6-3.6): Reject
SUBMITTER: William N. Brooks, Brinjac, Kambic & Assoc.
b. Delete “floors and” from 6-3.6.1.
c. Delete “floors or” from 6-3.6.2.
SUBSTANTIATION: Floors have not been considered to be smoke barriers to this point. The use of the term “floors” in this context seems to indicate that either (1) all floors are to be considered smoke barriers, or (2) there is some need to distinguish an opening in a floor from an opening in a smoke barrier. Penetrations and miscellaneous openings in floors should be addressed in 6-2.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: Paragraph 6-2.4.1 requires floors to be constructed as smoke barriers.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Bender, Notarianni

101-142 - (6-4.1.1(a)): Reject
SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs
RECOMMENDATION: Revise 6-4.1.1(a) as follows:
(a) Enclose the area with a fire barrier having a 1-hr fire resistance rating in accordance with Section 6-2, without windows or penetrations. The current code text specifies elsewhere in the Code, door opening protectives shall have a fire protection rating of not less than 20 minutes where tested in accordance with NFPA 252, Standard Methods of Fire Tests of Door Assemblies, without the hose stream test. Exception No. 1: If a different fire protection rating for smoke barrier doors is specified by Chapters 8 through 29.
Exception No. 2: Latching hardware shall not be required on doors in smoke barriers where so indicated by Chapters 8 through 29.
6-3.4.5* Doors in smoke barriers shall be self-closing or automatically closing in accordance with 5-2.1.8 and shall comply with the provisions of 5-2.1.
6-3.5 Windows. Where a fire resistance rating for smoke barriers is specified elsewhere in the Code, fire windows shall comply with 6-3.4.
Renumber following paragraphs.
SUBSTANTIATION: A recent F.I. illustrated the confusion which the present language causes. By separating the two different types of openings (doors and windows), it is possible to clarify that a hose stream test is unnecessary for the doors, including any installed vision panels. If the committee wishes to eliminate the hose stream test for fire window assemblies, this reordering of the Section will permit such a change to be made.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The submitter has not substantiated why code requirements should be relaxed to permit windows in the fire barriers serving as hazardous contents area enclosures. Also, the second sequence of submitter’s substantiation is incorrect. Paragraph 5-1.3.1(c) prohibits windows in exit stair enclosure walls.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 25
ABSTENTION: 1
NOT RETURNED: 2 Bender, Notarianni
EXPLANATION OF ABSTENTION:
STONE: In accordance with Standards Council policy, special experts must refrain from voting on subjects for which they have been retained to represent the interests of a client.

101-143 - (6-4.1.3 Exception (New)): Reject
SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs
RECOMMENDATION: Add an Exception to 6-4.1.3 to read:
Exception: Where the hazardous area is protected by quick response sprinklers installed in accordance with Section 7-7 and connected to a fire alarm system installed in accordance with Section 7-4, the doors can be held open if they close upon the activation of the sprinkler system.
SUBSTANTIATION: A space protected with quick response sprinklers will limit the amount of smoke generated when installed per Section 7-7 thus preventing a means of egress or other areas outside the hazardous area to become jeopardized. In addition, the doors would close when the signal from the sprinkler flow or pressure switch is activated. This would provide a situation equivalent to that provided by meeting the literal requirement of the code. It would encourage sprinklers to be installed which would actually reduce the effects of a fire below those which would occur if only a detector in accordance with 5-2.1.8(c) and no sprinkler protection was provided as is permitted now.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: Not all fires start as flaming ignition. Smoke can pass through the open door prior to sprinkler activation.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 2 Bender, Notarianni
101-144 - (6-4.5 (New)): Reject

Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Fire Protection Features (FIR) reconsider the committee action on this proposal in view of the explanation of negative vote received from Mr. Klein. The committee statement appears to be less than responsive to the submitter's recommendation and substantiation. Also, FIR is asked to correlate its action with that taken by HEA on proposal 101-258 (Log #34).

SUBMITTER: Mauer D. Zimmerman, DHSK, HFPA

RECOMMENDATION: Add a new subsection 6-4.5 on rooftop heliports, to read as follows:

6-4.5 Rooftop Heliports. New buildings which have a rooftop Heliport shall be protected in accordance with NFPA 418, Standard for Heliports.

SUBSTANTIATION: Section 6-4.1 currently states that "protection from any area having a degree of hazard greater than that normal to the general occupancy of the building or structure shall be provided..." -"a fire barrier having a one-hour fire resistance rating..." or "an automatic extinguishing system in accordance with 7-7, or both..."

A Rooftop Heliport presents "a degree of hazard greater than normal" to a health care occupancy; however, the provision of an enclosure with a one-hour fire resistance rating and/or an extinguishing system is inappropriate for the nature of this hazard; NFPA 418 contains requirements for fixed or portable AFFF suppression systems appropriate for a Rooftop Heliport.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The submitter's recommendation leaves unanswered how helistops (versus heliports) should be addressed.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 26

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 23

NEGATIVE: 1

NOT RETURNED: 2 Bender, Notaristanni

EXPLANATION OF VOTE:

KLEIN: The Committee Statement for rejection was that "helistops...should be addressed." The term "helistops" is not used in NFPA standards. The term "heliport" is used in NFPA 418, and is the proper term to use for an area where helicopters land on the roof of a building. Such a rooftop use should be addressed by NFPA 101 by reference to this appropriate NFPA standard.

101-145 - (6-5.2 and 6-5.3): Accept

SUBMITTER: Technical Correlating Committee on Furnishings and Contents

RECOMMENDATION: Revise 6-5.2 and 6-5.3 to read as follows (NOTE: not all of the technical changes resulting from the committee actions on the other proposals are reflected in the following draft):

6-5.2* Use of Interior Finishes.

6-5.2.1 Requirements for interior wall and ceiling finish shall apply as specified elsewhere in this Code for specific occupancies. (See Chapter 5 and Chapters 8 through 29.)

Exception: Light-transmitting plastics, in accordance with 6-5.3.6.

6-5.2* Requirements for interior floor finish shall apply only where (a) there is a floor finish of unusual hazard; or (b) where floor finish requirements are specified elsewhere in this Code for specific occupancies. (See Chapters 8 through 29 for specific occupancy requirements.)

6-5.3 Use of Interior Wall or Ceiling Finish.

6-5.3.1 Interior wall or ceiling finish shall be classified based on test results from NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials. The wall or ceiling finish shall, by its own structural quality or the manner in which it is applied, be capable of supporting itself in position during classification testing.

If the interior wall finish is not capable of supporting itself in position during classification testing, it shall be tested in accordance with 6-5.4.4. If the interior ceiling finish is not capable of supporting itself in position during classification testing, it shall be tested in accordance with 6-5.4.5.

The materials or products described in 6-5.3.3 through 6-5.3.8 shall be tested as required in those paragraphs.

6-5.3.2 Interior finish products to be used as ceiling finish, if they cannot be tested according to NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, because of their own structural quality or the manner in which they are applied, by virtue of being incapable of supporting themselves in position during classification testing, using a product mounting system including adhesive, representative of actual use, shall be tested in accordance with ISO 9705, Fire Tests — Full-scale Room Test for Surface Products, as described in 6-5.4.6.

6-5.3 Textile materials shall not be used as interior wall or ceiling finish unless they comply with 6-5.3.4.

6-5.3.4 Materials required to comply with this paragraph shall meet one of the following conditions, wherein the provisions of 6-5.8 shall not apply:

(a) Materials having a Class A rating (see 6-5.4) shall be permitted on the walls or ceilings of rooms or areas protected by an approved, automatic sprinkler system.

(b) Materials having a Class A rating (see 6-5.4) shall be permitted on partitions which are not more than 3/4 of the floor-to-ceiling height nor more than 8 ft in height, whichever is less.

(c) Materials having a Class A rating (see 6-5.4) shall be permitted on ceiling-height walls and ceiling-height partitions up to 4 ft above the finished floor.

(d) Previously approved, existing installations of materials having a Class A rating (see 6-5.4) shall be permitted to be continued in use.

(e) Materials shall be permitted on walls and partitions, without requiring classification in accordance with 6-5.4, where tested in accordance with NFPA 265, Standard Fire Test for Evaluating Room Fire Growth Contribution of Textile Wall Coverings.

6-5.3.5 Expanded Vinyl Wall Coverings.

6-5.3.5.1* Expanded vinyl wall covering shall comply with the requirements in 6-5.3.4.

6-5.3.5.2 Expanded vinyl wall coverings in existing installations complying with the appropriate wall finish classification for the occupancy involved shall be classified in accordance with the provisions in 6-5.4.1.

6-5.3.6 Light-transmitting plastics shall be permitted to be used as interior wall and ceiling finish, if approved by the authority having jurisdiction.

6-5.3.7 Cellular or foamed plastic materials shall not be used as interior wall and ceiling finish.

Exception No. 1: Cellular or foamed plastic materials shall be permitted on the basis of fire tests that substantiate on a reasonable basis their combustibility characteristics for the use intended under actual fire conditions.

Exception No. 2: Cellular or foamed plastic shall be permitted for trim in excess of 10 percent of the wall or ceiling area, provided it is not less than 20 hr ft (320 kg/m2) in density, is limited to 1/2 in (1.3 cm) in thickness and 4 in (10.2 cm) in width, and complies with the requirement of Class B interior wall and ceiling finish as described in 6-5.4; however, the smoke rating shall not be limited.

6-5.3.8 For requirements on decorations and furnishings not meeting the definition of interior finish, see Section 6-6.

6-5.4 Interior Wall and Ceiling Finish Testing.

6-5.4.1* Products required by 6-5.3 to be tested in accordance with NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, shall be grouped in the following classes in accordance with their flame spread and smoke development:

(a) Class A Interior Wall and Ceiling Finish. Flame spread 0-25, smoke developed 0-450. Includes any material classified at 25 or less on the flame spread test scale and 450 or less on the smoke test scale. Any element thereof when so tested shall not continue to propagate fire.

(b) Class B Interior Wall and Ceiling Finish. Flame spread 25-75, smoke developed 0-450. Includes any material classified at more than 25 but not more than 75 on the flame spread test scale and 450 or less on the smoke test scale.

(c) Class C Interior Wall and Ceiling Finish. Flame spread 76-200, smoke developed 0-450. Includes any material classified at more than 75 but not more than 200 on the flame spread test scale and 450 or less on the smoke test scale.

Exception: Existing interior finishes complying with the above flame spread ratings only shall be permitted to be continued in use.

6-5.4.2 Wherever the use of Class A interior wall and ceiling finish is required, Class A or B shall be permitted. Where Class B interior wall and ceiling finish is required, Class A shall be permitted.

6-5.4.3 The classification of interior finish specified in 6-5.4.1 shall be that of the basic material used by itself or in combination with other materials.

Exception: Exposed portions of structural members complying with the requirements for Type IV(2HH) construction per NFPA 220, Standard on Types of Building Construction.

6-5.4.4* Products required by 6-5.3 to be tested in accordance with NFPA 265, Standard Fire Test for Evaluating Room Fire Growth Contribution of Textile Wall Coverings, shall be tested using a product mounting system, including adhesive, representative of actual use, and shall comply with either 6-5.4.4.1 or 6-5.4.4.2.

6-5.4.4.1 When using the method A test protocol:

(a) flame shall not spread to the ceiling during the 40 kW exposure, and
(b) during the 150 kW exposure the following criteria shall be met:

1. flame shall not spread to the outer extremity of the sample on the 8 ft x 12 ft wall, and
2. the specimen shall not burn to the outer extremity of the 2 ft wide samples mounted vertically in the corner of the room, and
3. burning droplets shall not be formed and dropped to the floor that are capable of igniting the sample or that persist in burning for 30 s or more, and
4. flashover shall not occur, and
5. the maximum instantaneous net peak rate of heat release shall not exceed 300 kW.

When using the method B test protocol:

(a) flame shall not spread to the ceiling during the 40 kW exposure, and
(b) during the 150 kW exposure the following criteria shall be met:

1. flame shall not spread to the outer extremities of the sample on the 8 ft x 12 ft wall, and
2. flashover shall not occur.

6.5.4.5 Interior wall finish materials, which are tested in accordance with NFPA 265, Standard Fire Test for Evaluating Room Fire Growth Contribution of Textile Wall Coverings, and comply with 6-5.4.4 shall be permitted to be installed without requiring the wall finish to be classified in accordance with 6-5.4.1.

6.5.4.6 Products required by 6.5.3 to be tested in accordance with ISO 9705, Fire Tests - Full-scale Room Test for Surface Products, shall be tested in accordance with burning regime prescribed at the 40 kW and 160 kW levels, and with product covering the ceiling, using a mounting system, including adhesive, representative of actual use and shall comply with the following requirements:

(a) the flash shall not spread to the outer extremities of the sample on the ceiling, and
(b) flashover shall not occur.

6.5.4.7 Interior ceiling finish materials, which are tested in accordance with NFPA 265, Fire Tests - Full-scale Room Test for Surface Products, and comply with 6.5.4.6 shall be permitted to be installed without requiring the wall finish to be classified in accordance with 6-5.4.1.

(Number current 6-5.4 through 6-5.7 to become 6-5.5 through 6-5.8.)

This paragraph recognizes that traditional finish floors and floor coverings such as wood flooring and resilient floor coverings have not proved to present an unusual hazard.

6.5.5.1 Expanded vinyl wall covering consists of a woven textile backing, an expanded vinyl base coat layer, and a non-expanded vinyl skin coat. The expanded base coat layer is a homogeneous vinyl layer which contains a blowing agent. During processing the blowing agent is released which causes the vinyl skin forming closed cells. The total thickness of the wall covering is approximately 0.055 to 0.070 in.

6.5.5.2 Light-transmitting plastics are used for a variety of purposes, including diffusers, entrance signs, canopies, glazing, and the like. Previous editions of the Code have not addressed the use of light-transmitting plastics. Light-transmitting plastics will not normally be used in applications representative of interior finishes. Accordingly, NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, may be used. A reasonable sized ignition source to show that the material will not spread fire to involve objects remote from the area of origin, and that the test material will not produce sufficient energy to cause the room of origin to flashover. Acceptance of textile wall covering materials should be contingent upon qualification tests in which a specific textile/adhesive pair has been evaluated.

The 450 smoke development value limit is based solely on obscuration.

SUBSTANTIATION: The reformatted 6-5.2 and 6-5.3 into subsections 6-5.2 through 6-5.4 is mainly editorial for organization and ease of use. Note that 6-5.3.1 (via reference to 6-5.4.4 and 6-5.4.6) includes new requirements for testing wall finish materials in accordance with NFPA 265, and ceiling finish materials in accordance with ISO 9705, if the wall or ceiling material is not self-supporting or is not supported in a fashion representative of its intended use during NFPA 255 / ASTM E94 testing. This corrects a deficiency in the current requirements.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 17

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 17

(101-146 - (6-5.2.3): Accept in Principle)

SUBMITTER: James Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Add the following to 6-5.2.3:

"The provisions of 6-5.7 shall not be permitted."

SUBSTANTIATION: Everyone that has discussed this with the subcommittee notes that 6-5.7 was intended to cover the situation where sprinklers are installed. However, 6-5.7.1 clearly states that its use is permitted unless specifically prohibited. COMMITTEE ACTION: Accept in Principle.

Add the following to 6-5.2.3:

"The provisions of 6-5.7 shall not apply."

COMMITTEE STATEMENT: The Committee Action rewords the submitter's proposed language for clarity. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 17

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 17

(101-147 - (6-5.2.3.2 Exception (New)): Reject)

SUBMITTER: Tracey D. Bellamy, Aiken, SC

RECOMMENDATION: Add an exception to 6-5.2.3.2 as follows:

Exception: Previously approved, existing installations do not require a Class A rating.

SUBSTANTIATION: The installation of less than ceiling height prefabricated panel furniture systems, with a textile material covering all or part of the surface, was previously permitted to be installed without regard to their surface burning characteristics. This allowance for the installation of such panels was provided by a Formal Interpretation 88-12, for those panels whose height did not exceed the space that separate rooms were formed. The installation of these panels was recognized as furniture and consisitent with the continued use of a previously approved installation is inconsistent with that.
with the other allowances commonly found elsewhere within NFPA 101. Many existing installations of less than ceiling height prefabricated panel furniture systems with a textile material covering all or part of their surface, do not have an identified interior wall finish classification rating and would otherwise require replacement under the provisions of Section 6-5.2.8.2.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: Many of these existing partitions did not previously undergo any approval process; thus they were not "previously approved". Provision is made elsewhere for modifying the requirements applicable to existing installations (see 1-4.4 and A-1-4.4).

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 17
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 17

COMMITTEE ACTION: Accept in Principle.

Insert a new 6-5.2.4 to read as follows and renumber subsequent paragraphs as necessary:

A-6-5.2.4 Expanded Vinyl Wall Coverings. Expanded vinyl wall covering shall comply with requirements for textile wall and ceiling materials and its use shall be in accordance with 6-5.2.3.

Exception: Existing installations complying with the appropriate wall or ceiling finish classification for the occupancy involved.

Add an appendix note A-6-5.2.4 as follows:

A-6-5.2.4 Expanded vinyl wall covering consists of a woven textile backing, an expanded vinyl base coat layer, and a non-expanded vinyl skin coat. The expanded base coat layer is a homogeneous vinyl layer which contains a blowing agent. During processing the blowing agent decomposes which causes this layer to expand by forming closed cells. The total thickness of the wall covering is approximately 0.055 to 0.070 in.

COMMITTEE STATEMENT: The Committee Action adopts the submitter's language but renumerates it to become 6-5.2.4 for better placement and clarity. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 17
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 17

COMMITTEE ACTION: Accept.

SUBMITTER: Technical Committee on Furnishings and Contents, RECOMMENDATION: Insert a new 6-5.2.6 (and reorder existing paragraphs as necessary) to read:
6-5.2.6* Interior wall finish materials which are tested in accordance with NFPA 255, Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings, was developed for assessing the performance of textile wall coverings, the method can be, and has been, used to evaluate other types of wall finish. As long as a wall finish is tested using a product mounting system representative of actual use, NFPA 255 provides an evaluation of a product’s flammability behavior. Manufacturers, installers and specifiers should be encouraged to use NFPA 255 because it has the ability to characterize actual product behavior. This is in contrast to NFPA 265 data which only allows comparisons of one product’s performance with another. If a manufacturer or installer chooses to test a wall finish in accordance with NFPA 265, additional testing in accordance with NFPA 255 is not necessary.

SUBSTANTIATION: NFPA 255 is suitable for evaluating wall coverings other than textiles. The use of NFPA 265 should be encouraged as it provides information on product flammability behavior. When a product is tested in accordance with NFPA 265, there is no reason to require additional testing in accordance with NFPA 255.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 17
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 16
ABSTENTION: 1

EXPLANATION OF ABSTENTION:
BELLES: I abstained on this proposal because I serve as a special expert but have a client interest in this revision.

COMMITTEE ACTION: Accept in Principle.

Insert a new 6-5.2.4 to read as follows and renumber subsequent paragraphs as necessary:

A-6-5.2.5 Expanded Vinyl Wall Coverings. Expanded vinyl wall covering shall comply with requirements for textile wall and ceiling materials and its use shall be in accordance with 6-5.2.5.

Exception: Existing installations complying with the appropriate wall or ceiling finish classification for the occupancy involved.

Add an appendix note A-6-5.2.5 as follows:

A-6-5.2.5 Expanded vinyl wall covering consists of a woven textile covering all or part of their surface, do not have an identified interior wall finish classification rating and would otherwise require replacement under the provisions of Section 6-5.2.3.2.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: Many of these existing partitions did not previously undergo any approval process; thus they were not "previously approved". Provision is made elsewhere for modifying the requirements applicable to existing installations (see 1-4.4 and A-1-4.4).

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 17
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 17

COMMITTEE ACTION: Accept in Principle.

Add an associated appendix paragraph to read:

A-6-5.2.6 Although NFPA 255, Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings, was developed for assessing the performance of textile wall coverings, the method can be, and has been, used to evaluate other types of wall finish. As long as a wall finish is tested using a product mounting system representative of actual use, NFPA 255 provides an evaluation of a product’s flammability behavior. Manufacturers, installers and specifiers should be encouraged to use NFPA 255 because it has the ability to characterize actual product behavior. This is in contrast to NFPA 265 data which only allows comparisons of one product’s performance with another. If a manufacturer or installer chooses to test a wall finish in accordance with NFPA 265, additional testing in accordance with NFPA 255 is not necessary.

SUBSTANTIATION: NFPA 255 is suitable for evaluating wall coverings other than textiles. The use of NFPA 265 should be encouraged as it provides information on product flammability behavior. When a product is tested in accordance with NFPA 265, there is no reason to require additional testing in accordance with NFPA 255.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 17
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 16
ABSTENTION: 1

EXPLANATION OF ABSTENTION:
BELLES: I abstained on this proposal because I serve as a special expert but have a client interest in this revision.
SUBSTANTIATION: This recommendation is made to resolve the current conflict between NFPA 101 and Z223.1/NFPA 54 regarding the installation of unvented gas heaters in certain occupancies (i.e., Day Care Centers, Health Care Centers, Hotels and Dormitories, Apartments, Lodging and Rooming Houses and Schools). Note: Supporting material is available for review at NFPA Headquarters.

COMMITTEE ACTION: Accept in Principle.

See Proposal 101-355 (Log #40) on 10-5-2.2 et al., Proposal 101-352 (Log #41) on 17-5-2.2 et al. and Proposal 101-145 (Log #42) on 22-5-2.9 et al.

COMMITTEE STATEMENT: The three proposals referenced above were drafted by the Technical Committee on Building Service and Fire Protection Equipment in response to this proposal requesting that gas space heaters installed in compliance with NFPA 54, National Fuel Gas Code, be exempted from the numerous prohibitions scattered throughout the Life Safety Code that are worded similar to the following: "Unvented fuel-fired heating equipment shall be prohibited." Chapter 7 mandatorily references the use of NFPA 54 which permits gas space heaters to be installed in accordance with the provisions of that document in all but "institutions such as homes for the aged, sanitoriums, convalescent homes, orphanages, etc." Yet, authorities having jurisdiction are interpreting the Life Safety Code occupancy chapter prohibitions on unvented fuel-fired heaters to mean that gas fired space heaters in compliance with NFPA 54 are prohibited.

The exceptions proposed by the three referenced proposals will permit the affected occupancy chapter committees to clarify their intent on the subject of gas fired space heaters in compliance with NFPA 54.

This action should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 14

SUBMITTER: Mayer D. Zimmerman, US DHHS; HCFA

RECOMMENDATION: Add a new subsection 7-4.7 to read as follows:

7-4.7 Elevator Machine Rooms. Elevator machine rooms, which contain solid-state equipment, shall be provided with independent ventilation or air conditioning systems to maintain the temperature required to ensure safe operation. The operating temperature shall be established by the elevator equipment manufacturer's specifications. When standby power is connected to the elevator, the machine room ventilation or air conditioning shall be connected to standby power.

SUBSTANTIATION: Continued operation of solid-state elevator equipment is contingent on maintaining the ambient temperature in the range specified by the elevator manufacturer. If the machine room ventilation/air conditioning is connected to the general building system, and that system is shut down during a fire, the fire department may lose the use of elevators due to excessive heat in the elevator machine room.

COMMITTEE ACTION: Accept in Principle.

Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Building Service and Fire Protection Equipment (BSF) reconsider its action in relation to its committee scope. It appears that the specification of operating temperatures under normal (nonemergency) use might be outside the scope.

SUBMITTER: Edward A. Donoghue, National Elevator Industry, Inc.

RECOMMENDATION: Add a new subsection 7-2.5 to read:

7-2.5 Elevator Machine Rooms. Elevator machine rooms, which contain solid-state equipment, shall be provided with independent ventilation or air conditioning systems to maintain the temperature required to ensure safe operation. The operating temperature shall be established by the elevator equipment manufacturer's specifications. When standby power is connected to the elevator, the machine room ventilation or air conditioning shall be connected to standby power.

EXCEPTION: Existing elevators.

Add appendix text as follows:

A-7-4.7 Continued operation of solid-state elevator equipment is contingent on maintaining the ambient temperature in the range specified by the elevator manufacturer. If the machine room ventilation/air conditioning is connected to the general building system, and that system is shut down during a fire, the fire department may lose the use of elevators due to excessive heat in the elevator machine room.

COMMITTEE STATEMENT: The submitter's proposed language fits better in Section 7-4 which specifically addresses elevators. The additional "bright" criteria contained in the committee action text will make the requirement applicable in buildings with numerous floors for which the loss of elevators would make rescue via stairs too difficult. The appendix text explains the intent of the requirement. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 14

101-154. (7-2.5 (New)): Accept in Principle

Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Building Service and Fire Protection Equipment (BSF) reconsider its action in relation to its committee scope. It appears that the specification of operating temperatures under normal (nonemergency) use might be outside the scope.

SUBMITTER: Edward A. Donoghue, National Elevator Industry, Inc.

RECOMMENDATION: Add a new subsection 7-2.5 to read:

7-2.5 Elevator Machine Rooms. Elevator machine rooms, which contain solid-state equipment, shall be provided with independent ventilation or air conditioning systems to maintain the temperature required to ensure safe operation. The operating temperature shall be established by the elevator equipment manufacturer's specifications. When standby power is connected to the elevator, the machine room ventilation or air conditioning shall be connected to standby power.

EXCEPTION: Existing elevators.

Add appendix text as follows:

A-7-4.7 Continued operation of solid-state elevator equipment is contingent on maintaining the ambient temperature in the range specified by the elevator manufacturer. If the machine room ventilation/air conditioning is connected to the general building system, and that system is shut down during a fire, the fire department may lose the use of elevators due to excessive heat in the elevator machine room.

COMMITTEE STATEMENT: The submitter's proposed language fits better in Section 7-4 which specifically addresses elevators. The additional "bright" criteria contained in the committee action text will make the requirement applicable in buildings with numerous floors for which the loss of elevators would make rescue via stairs too difficult. The appendix text explains the intent of the requirement. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 14
SUBMITTER: Technical Committee on Building Service and Fire Protection Equipment.

RECOMMENDATION: Delete 7-4.1 and A-7-4.1 and renumber the 7-4.3 as necessary.

SUBSTANTIATION: The Committee Action on Proposal 101-90 (Log #155) establishes a new 5-2.15 which recognizes elevators as a component in a required means of egress. Subsection 5-2.4 currently recognizes elevators for use within an accessible means of egress. Current 7-4.1 and A-7-4.1 are not needed.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 14

COMMITTEE STATEMENT: The Committee Action accomplishes the committee's name requesting that the Life Safety Technical Committee on Building Service and Fire Protection Equipment (BSF) reconsider its action for terminology, intent and correlation with other changes made such as that in proposal 101-180. BSF is also asked to reconsider its action in view of the correspondence drafted by the Technical Committee on Residential Occupancies (RES) advising that the change proposed by this section would require a minimum of one manual pull station but seem to permit more than one pull station to be required. The proposed wording does not allow the occupancy chapters to exempt themselves from the requirement for one manual pull station. The proposed wording for Chapter 7 might permit manual pull stations to be omitted based on the presence of water flow indicators or detectors when it might be the occupancy chapters' intent to require manual pull stations.

SUBMITTER: Gregory J. Cahinin, Exit Seminars

RECOMMENDATION: Add a new sentence to 7-6.2.3 to read: "In fully sprinklered buildings, containing a fire alarm system, a manual fire alarm station shall be provided at the building's main entry/exit."

SUBSTANTIATION: Currently there is a conflict between the NFPA 72 and 101 on the requirement for manual fire alarm stations. NFPA 101 permits some fully sprinklered facilities to omit the manual activation of the required fire alarm systems. This revision will provide consistency between the two codes. The addition of one manual fire alarm station under NFPA 101 will not constitute an excessive requirement. It would also provide a means to alert occupants prior to the operation of the sprinkler system.

COMMITTEE ACTION: Accept in Principle.

Insert a new 7-6.2.5 (and renumber subsequent paragraphs as necessary) to read:

7-6.2.5 For fire alarm systems utilizing fire detectors or waterflow detection devices, at least one fire alarm station shall be provided to initiate a fire alarm signal. This fire alarm station shall be located where required by the authority having jurisdiction.

COMMITTEE STATEMENT: The Committee Action accomplishes what the submitter requested but does so via wording consistent with NFPA 72 paragraph 3-8.1.2 so as to apply to automatic fire detection initiation as well as automatic sprinkler water flow initiation of the required fire alarm system. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 13

NEGATIVE: 1

EXPLANATION OF NEGATIVE:

LAKE: The language of the proposed 7-6.2.5 excludes other extinguishing systems as referenced in Section 7-6.2.1 by limiting these provisions to only those systems utilizing fire detectors or waterflow detection devices. Furthermore, there is no indication as to whether this alarm station is manual or automatic. It should be noted that a waterflow detection device on a sprinkler system is not a fire alarm system, so the proposed wording of this section should be improved.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 14

COMMITTEE STATEMENT: The current language is not consistent with changes in 1994 edition of Code. "Path of escape" is defined for that travel portion from within a dwelling unit. Changing the verbiage to "exit access" clarifies that it includes all areas from within the facility to an exit.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 14
101-161 - (7-6.2.4): Accept in Part
Note: The Technical Correlating Committee on Safety to Life (TCC) directs that a public comment be submitted to the correlating committee’s name requesting that the Life Safety Technical Committee on Building Service and Fire Protection Equipment (BSF) reconsider the wording of the committee statement to include recognition that the deletion of 7-6.2.4 will not have the effect of deregulating the spacing of manual pull stations because the mandatory reference to NFPA 72 will require compliance with any spacing requirements contained in that document.
SUBMITTER: Martin H. Reiss, Rolf Jensen & Associates, Inc.
RECOMMENDATION: In 7-6.2.4 delete existing wording and replace it with the following:
7-6.2.4 A manual fire alarm station shall be located in each area of refuge.
SUBSTANTIATION: A manual fire alarm station should be required in each area of refuge for occupants not evacuating. There is no need for additional fire alarm stations within a travel distance of 200 ft if the occupant is evacuating and travels to an exit.
COMMITTEE ACTION: Accept in Part.

Delete 7-6.2.4.
COMMITTEE STATEMENT: A manual pull station is not needed in an area of refuge because such areas either have a communication system or are sprinkler protected. Additionally there will be manual pull stations at the exit doors from that floor. The deletion of 7-6.2.4 addresses the 200 ft distance requirement. This should meet part of the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 12
NEGATIVE: 2

EXPLANATION OF NEGATIVE:
JARDIN: The deletion of 7-6.2.4 will create, depending on the circumstances, a longer time period before alarm initiation occurs. This delay in alarm (compared to the current provision) is inconsistent with the building’s evacuation procedure. The delay in alarm will have unacceptable impact on some types of buildings where the time until the evacuation alarm is initiated is critical.

KIRBY: NFPA 101 7-6.2.4 is consistent with 1993 NFPA 72 5.9.1.2(b) in requiring a maximum travel distance of 200 feet. The further someone has to travel to initiate a manual alarm the higher the risk that the responding fire services will be misdirected to the location of the fire. The additional distance can potentially extend the time to initiate the alarm.

101-162 - (7-6.2.5): Accept
SUBMITTER: Martin H. Reiss, Rolf Jensen & Associates, Inc.
RECOMMENDATION: In 7-6.2.5 change the words “visible, and of the same general type” to “and visible”.
SUBSTANTIATION: This proposal would delete the requirement for manual stations being of the same general type. Some projects, such as psychiatric hospitals, need key operated stations in patient areas and conventional stations elsewhere.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 14

101-165 - (7-6.2.9): Accept
SUBMITTER: Technical Committee on Building Service and Fire Protection Equipment.
RECOMMENDATION: To 7-6.2.9 add the phrase “suite of rooms, or similar area,” in three places so as to read:
7-6.2.9 Where required by another section of this Code, single station smoke detectors shall be installed in accordance with the household fire alarm requirements of NFPA 72, the National Fire Alarm Code. Smoke detectors shall receive their operating power from the building electrical system. In new construction, where two or more smoke detectors are required within a living unit, suite of rooms, or similar area, they shall be arranged so that the activation of any detector causes the operation of an alarm that shall be clearly audible throughout the entire living unit, suite of rooms, or similar area, over background noise levels with all intervening doors closed. The detectors shall sound an alarm only within an individual living unit, suite of rooms, or similar area and shall not actuate the building protective signaling and control system. Remote annunciation shall be permitted. (retain exceptions)
SUBSTANTIATION: The proposed changes are for clarification, consistency and coordination with the various terms used within this paragraph and text in the residential occupancy chapters.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 14

101-164 - (7.6.3.2): Accept in Principle
SUBMITTER: Martin H. Reiss, Rolf Jensen & Associates, Inc.
RECOMMENDATION: Revise 7-6.3.2 text by adding the words “and visible” after the word “audible”.
SUBSTANTIATION: Notification of occupants also includes visible signals in following paragraphs that are referenced.
COMMITTEE ACTION: Accept in Principle.
REVISE the base paragraph of 7-6.3.2 to read:
7-6.3.2* Notification shall be provided by audible and visible signals in accordance with 7-6.3.3 through 7-6.3.10. (Current exceptions remain.)
COMMITTEE STATEMENT: The wording used in the Committee Action further clarifies meaning. This should meet submitter’s intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 14

101-166 - (7-6.3.2 Exception No. 5): Accept
SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs
RECOMMENDATION: In Exception No. 3 to 7-6.3.2 add the words “and visible” after the word “audible”.
SUBSTANTIATION: The signal at the location should be both audible and visible for proper identification.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 14

101-165 - (7-6.3.2 Exception No. 5): Accept
SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs
RECOMMENDATION: In Exception No. 5 to 7-6.3.2 as follows:
Exception No. 5*: Elevator lobby, and associated machine rooms, smoke detectors and heat detectors used for elevator recall and power shutdown shall not be required to sound the building evacuation alarm if the power supply and installation wiring of these detectors are monitored by the building fire alarm system, and the activation of these detectors results in an audible alarm signal at a constantly attended location.
SUBSTANTIATION: The only reason these heat detectors are installed are to shut down the power prior to sprinkler water discharge in accordance with NFPA 72. Since they are not there for early warning, sounding the building alarm should not be required. The sprinklers will activate the alarm system.
COMMITTEE ACTION: Accept in Principle.
REVISE Exception No. 3 to 7-6.3.2 as follows:
Exception No. 3*: Elevator lobby, hallway and associated machine rooms, smoke detectors used solely for elevator recall, and heat detectors used solely for elevator power shutdown shall not be required to sound the building evacuation alarm if the power supply and installation wiring of these detectors are monitored by the building fire alarm system, and the activation of these detectors results in an audible alarm signal at a constantly attended location.
COMMITTEE STATEMENT: The wording done in the Committee Action was necessary because the heat detectors are for power shutdown only, not for elevator recall. The Committee Action should meet the submitter’s intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 14
101-167 - (7-6.3.2 Exception No. 3, Exception No. 4, Exception No. 5, and Exception No. 6): Accept

SUBMITTER: Martin H. Reiss, Rolf Jensen & Associates, Inc.

RECOMMENDATION: In Exception No. 3, Exception No. 4, Exception No. 5, and Exception No. 6 to 7-6.3.2, change the word "sound" to the word "activate".

SUBSTANTIATION: The alarm signals can be both audible and visible.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 14

101-168 - (7-6.3.2 Exception No. 4): Accept in Principle

SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs

RECOMMENDATION: Reword Exception No. 4 to 7-6.3.2 as follows:
Exception No. 4*: Detectors used solely for closing dampers or heating/ventilating/air conditioning system shutdown shall not be required to sound the building alarm.

SUBSTANTIATION: Installations have spot type detectors used for shutting dampers which should fall under this exception provided they are not installed for early warning. (See NFPA 101 6.3.5.2).

COMMITTEE ACTION: Accept in Principle.

Reword Exception No. 4 to 7-6.3.2 as follows:
Exception No. 4*: Smoke detectors used solely for closing dampers or heating/ventilating/air conditioning system shutdown shall not be required to activate the building evacuation alarm.

COMMITTEE STATEMENT: The rewording done in the Committee Action was necessary for consistency. The Committee Action should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 14

101-169 - (7-6.3.2 Exception No. 5 and Exception No. 6): Accept

SUBMITTER: Technical Committee on Building Service and Fire Protection Equipment.

RECOMMENDATION: In Exception No. 5 and Exception No. 6 insert the word "evacuate" to read: "... building evacuation alarm to..."

SUBSTANTIATION: The proposed change is for consistency in wording with other changes being made to portions of Section 7-6.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 14

101-170 - (7-6.3.3): Reject

SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs

RECOMMENDATION: Reword 7-6.3.3 as follows: Permitting a general evacuation alarm to be installed effectively reduces the response of staff below what should be considered a minimum by this code. The definition of private operating mode as identified in NFPA 72 shall be permitted to be used. Only the attendants and other personnel required to evacuate occupants from a zone, area, floor, or building shall be required to be notified. This notification shall include means to readily identify the zone, area, floor, or building in need of evacuation.

COMMITTEE STATEMENT: The paragraph is addressing health care facilities. If a general evacuation signal is provided in a health care facility (nursing home), the staff does not know where to respond because of age, physical/mental disabilities, or physical restraint, the private operating mode as described in NFPA 72 shall be permitted to be used. Only the attendants and other personnel required to evacuate occupants from a zone, area, floor, or building shall be required to be notified. This notification shall include means to readily identify the zone, area, floor, or building in need of evacuation.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION: REJECT.

101-171 - (7-6.3.5 Exception No. 2): Accept in Principle

SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs

RECOMMENDATION: Reword Exception No. 2 to 7-6.3.5 as follows:
Exception No. 2: Where occupants are incapable of evacuating themselves because of age, physical/mental disabilities, or physical restraint, the private operating mode as described in NFPA 72 shall be permitted to be used. Only the attendants and other personnel required to evacuate occupants from a zone, area, floor, or building shall be required to be notified. This notification shall include means to readily identify the zone, area, floor, or building in need of evacuation.

COMMITTEE STATEMENT: The Committee Action accomplishes what the submitter requested but editorially uses the phrase "shall be permitted to be" to avoid permissive language. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 14

101-172 - (7-6.3.5 Exception No. 2): Reject

SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs

RECOMMENDATION: Delete Exception No. 2 to 7-6.3.5 and rewrite it as paragraph 7-6.3.6, modified as follows. Renumber the other paragraphs as necessary.

7-6.3.6 Where occupants are incapable of evacuating themselves because of age, physical/mental disabilities, or physical restraint, the private operating mode as identified in NFPA 72 shall be permitted to be used. Only the attendants and other personnel required to evacuate occupants from a zone, area, floor, or building shall be required to be notified. This notification shall include means to readily identify the zone, area, floor, or building in need of evacuation.

SUBSTANTIATION: The paragraph is addressing health care facilities. If a general evacuation signal is provided in a health care facility (nursing home), the staff does not know where to respond because of age, physical/mental disabilities, or physical restraint, the private operating mode as described in NFPA 72 shall be permitted to be used. Only the attendants and other personnel required to evacuate occupants from a zone, area, floor, or building shall be required to be notified. This notification shall include means to readily identify the zone, area, floor, or building in need of evacuation.

COMMITTEE STATEMENT: The paragraph is addressing health care facilities. If a general evacuation signal is provided in a health care facility (nursing home), the staff does not know where to respond because of age, physical/mental disabilities, or physical restraint, the private operating mode as described in NFPA 72 shall be permitted to be used. Only the attendants and other personnel required to evacuate occupants from a zone, area, floor, or building shall be required to be notified. This notification shall include means to readily identify the zone, area, floor, or building in need of evacuation.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION: REJECT.
EXPLANATION OF NEGATIVE:

KLEIN: The submitter argues that, for certain occupancies such as health care, it is critical that the staff be provided a means to readily identify the specific zone, area, floor, or building in need of evacuation. This is necessary so that the staff can rapidly respond to that location and carry out the facility fire safety plan. A general evacuation alarm signal does not provide the necessary information. By presenting the text as an exception rather than as a separate paragraph, the code does not mandate that specific zone information be provided to the staff. That is, if a fire alarm system meets the requirement of 7-6.3.5 that the "general evacuation alarm signal shall operate throughout the entire building" then the exception does not have to be considered, and the alarm system is not required to identify the zone, area, floor, or building in need of evacuation. Making Exception No. 2 to 7-6.3.5 a separate paragraph would require that the necessary information be provided by the fire alarm system to help ensure prompt staff response for evacuation of those who require assistance.

COMMITTEE STATEMENT: Reject.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The subject is more appropriately covered as an exception to 7-6.3.5. Also see Committee Action on Proposal 101-171 (Log #118) which makes the submitter's recommended change to Exception No. 2 to 7-6.3.5.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 14

NEGATIVE: 1

COMMITTEE ACTION:

Reject.
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 14

101-178 - (7-6.5.3): Accept
SUBMITTER: Technical Committee on Building Service and Fire Protection Equipment.
RECOMMENDATION: Insert "(a) hoistway" or read: "...from elevator lobby, hoistway or associated machine room detectors."
SUBSTANTIATION: The proposed change is for consistency in wording with other changes being made to portions of Section 7-6.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 14

101-179 - (7-7.2.1): Reject
SUBMITTER: Michael D. Cato, Delray Beach Fire Rescue, FL
RECOMMENDATION: Revise text of 7-7.2.1 to read: "Where supervised automatic sprinkler systems are required, supervisory attachments shall be installed and monitored for integrity in accordance with NFPA 72, National Fire Alarm Code, Chapter 4-3 Central Station, 4-4 Proprietary Station or 4-7 Auxiliary Systems, when available and acceptable to the authority having jurisdiction."
SUBSTANTIATION: Current wording no longer specifies appropriate standards for supervision of automatic sprinklers. NFPA 72, Section 4-5.2.2 does not require notification of the fire department nor the authority having jurisdiction, upon receipt of supervisory signals which may indicate sprinklers required by Code non-functional or out of service.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: Current text adequately addresses the subject. There is no substantiation to exclude remote station systems from the list of acceptable options.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 14

Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Building Service and Fire Protection Equipment (BSF) reconsider its action for terminology, intent and correlation with other changes made such as that in proposal 101-129. BSF is also asked to reconsider its action on this proposal in view of the explanation of negative vote from Mr. Reiss which, in part, states that the committee action and statement are incorrect.
SUBMITTER: Martin H. Reiss, Rolf Jensen & Associates, Inc.
RECOMMENDATION: To the end of existing paragraph 7-7.3, add the following: "If present, the building fire alarm system shall monitor the actuation of the extinguishing system."
SUBSTANTIATION: If an extinguishing system is activated, there should be notification given to the building fire alarm system, if one is present, such that appropriate action can occur.
COMMITTEE ACTION: Accept in Principle.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 14

OSMAN: I wish to change my vote on this log to negative in agreement with Mr. Reiss' comments.
REISS: The committee action and statement are incorrect. Monitoring the actuation of the extinguishing system by the building fire alarm system is not the same as notification of the operation of other suppression (extinguishing) systems. The current wording no longer specifies appropriate standards for supervision of automatic sprinklers. NFPA 72, Section 4-5.2.2 does not require notification of the fire department nor the authority having jurisdiction. The proposed change is for consistency in wording with other changes being made to portions of Section 7-6.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 14
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 12
NEGATIVE: 2
EXPLANATION OF NEGATIVE:
fewer than 50 persons in a building of other occupancy and incidental to such other occupancy shall be classified as part of the other occupancy and shall be subject to the provisions applicable thereto.

8-1.2.5 Assembly occupancies in buildings of other occupancy shall be permitted to use exits common to the assembly occupancy and the other occupancy provided the assembly area and the other occupancy considered separately each have exits sufficient to meet the requirements of this Code.

8-1.2.4 Exits shall be sufficient for simultaneous occupancy of both the assembly occupancy and other parts of the building.

Exception*: Where the authority having jurisdiction determines that the conditions are such that simultaneous occupancy will not occur.

8-1.2.5 Combined Assembly and Residential Occupancies.

8-1.2.5.1 No dwelling unit of a residential occupancy shall have its sole means of egress pass through any assembly occupancy in the same building.

8-1.2.5.2 No multiple-dwelling unit of a residential occupancy shall be located in an assembly occupancy.

Exception No. 1: Where the dwelling unit of the residential occupancy and exits therefrom are separated from the assembly occupancy by construction having a fire resistance rating of at least 1 hour.

Exception No. 2: Where the assembly occupancy is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 7-7.

8.1.3 Special Definitions.

Aisle Accessway.* That initial portion of an exit access that leads to an aisle.

Assembly Occupancy. Occupancies that include, but are not limited to, all buildings or portions of buildings used for gatherings of 50 or more persons for such purposes as deliberation, worship, entertainment, dining, amusement, or awaiting transportation.

Exhibit. An individual or entity engaged in the display of the products or services offered.

Exhibits. A space or portable structure used for the display of products or services.

Exposition. An event in which the display of products or services is organized to bring together the provider and user of the products or services.

Exposition Facility. A convention center, hotel, or other building at which exposition events are held.

Festival Seating.* That form of audience/spectator accommodation in which no seating, other than a floor or ground surface, is provided for the audience/spectators gathered to observe some performance.

Flow Time. The time during which there is crowd flow past a point in the means of egress system; flow time is a component of total evacuation time.

Fly Gallery. A raised floor area above a stage from which the movement of scenery and operation of other stage effects are controlled.

Gridiron. The structural framing over a stage supporting equipment for hanging or flying scenery and other stage effects.

Life Safety Evaluation.* A written review dealing with the adequacy of life safety features relative to fire, storm, collapse, crowd behavior, and other related safety considerations.

Multipurpose Assembly Occupancy. An assembly room designed to accommodate temporarily any of several possible assembly uses.

Pinrail. A rail on or above a stage through which belaying pins are inserted and to which lines are fastened.

Platform.* The area within a building used for the presentation of music, plays, or other entertainment; the head tables for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round; and for similar purposes wherein there are no overhead drops, pieces of scenery, or stage effects other than lighting and a screening valance.

Platform, Temporary. A platform erected within an area for not more than 30 days.

Proscenium Wall. The wall that separates the stage from the auditorium or house.

Smoke-Protected Assembly Seating. (See 8-4.2.) Special Amusement Building. Any building that is temporary, permanent, or mobile that contains a device or system that conveys passengers or provides a walkway along, around, or over a course in any direction as a form of amusement arranged so that the egress path is not readily apparent due to visual or audio distractions or an intentionally confounded egress path, or is not readily available due to the mode of conveyance through the building or structure.

Included are amusements such as a "haunted house," a "roller coaster" type ride within a building, a "merry-go-round" within a building, a "submarine" ride, and similar amusements where the occupants are not in the open air.

Stage. An area within a building used for the purpose of entertain-
The occupant load permitted in any assembly building, structure, or portion thereof shall be determined on the basis of the following occupant load factors:

(a) An assembly area of concentrated use without fixed seats, such as an auditorium, place of worship, dance floor, discotheque, or lodge hall: one person per 7 net sq ft (0.65 net sq m).

(b) An assembly area of less concentrated use, such as a conference room, dining room, drinking establishment, exhibit hall, gymnasium, or lounge: one person per 15 net sq ft (1.4 net sq m).

(c) Bleachers, pews, and similar bench-type seating: one person per 18 linear in. (45.7 linear cm).

(d) Fixed Seating: The occupant load of an area having fixed seats shall be determined by the number of fixed seats installed. Required aisle space serving the fixed seats shall not be used to increase the occupant load.

(e) Kitchens: One person per 100 gross sq ft (9.3 gross sq m).

(f) Libraries: In stack areas, one person per 100 gross sq ft (9.3 gross sq m); in reading rooms, one person per 50 net sq ft (4.6 net sq m).

(g) Swimming Pools: One person per 50 gross sq ft (4.7 sq m) of water surface. Pool decks, one person per 30 gross sq ft (2.8 sq m).

(h) Stages: One person per 15 net sq ft (1.4 net sq m).

(i) Lighting and Access Catwalks, Galleries, and Gridirons: One person per 100 net sq ft (0.3 net sq m).

Exception: Larger occupant loads shall be permitted by 8-1.7.2.

8-1.7.2* The occupant load permitted in a building or portion thereof shall be permitted to be increased above that specified in 8-1.7.1 if the necessary aisles and exits are provided. To increase the occupant load, a diagram indicating placement of equipment, aisles, exits, and seating shall be provided to and approved by the authority having jurisdiction prior to any increase in occupant load. In areas not greater than 10,000 sq ft (930 sq m), the occupant load shall not exceed one person in 5 sq ft (0.46 sq m); in areas greater than 10,000 sq ft (930 sq m), the occupant load shall not exceed one person in 7 sq ft (0.65 sq m).

8-1.7.3 Waiting Spaces: In theaters and other assembly occupancies where persons are admitted to the building at times when seats are not available to them, or where the permitted occupant load has been reached based on 8-1.7.1 or 8-1.7.2 and persons are allowed to wait in a lobby or similar space until seats or space is available, such use of lobby or similar space shall not encroach upon the required clear width of exits. Such waiting shall be restricted to areas other than the required means of egress. Exits shall be provided for such waiting spaces on the basis of one person for each 5 sq ft (0.28 sq m) of waiting space area. Such exits shall be in addition to the exits specified for the main auditorium area and shall conform in construction and arrangement to the general rules for exits given in this chapter.

8-1.7.4 Where the occupant load of an assembly occupancy is greater than 6,000, a life safety evaluation shall be performed in accordance with 8-4.5.

Exception: Where approved by the authority having jurisdiction, the number of usually seated occupants provided with a minimum of 15 sq ft (1.4 sq m) of lawn surface in outdoor facilities shall be permitted to be excluded in determining the need for a life safety evaluation.

SECTION 8-2 MEANS OF EGRESS REQUIREMENTS

8-2.1 General. All means of egress shall be in accordance with Chapter 5 and this section.

8-2.2 Means of Egress Components.

8-2.2.1 Components of means of egress shall be limited to the types described in 8-2.2.2 through 8-2.2.8.

8-2.2.2 Doors.

8-2.2.2.1 Doors complying with 5-2.1 shall be permitted.

8-2.2.2.2 Class I Assembly occupancies in covered malls (see 24-4-1.1 Exception) shall be permitted to have horizontal or vertical security grilles or doors complying with Exception No. 4 to 5-2.1.4.1 on the main entrance/exits.

8-2.2.2.3 Panic Hardware or Fire Exit Hardware. Any door in a required means of egress from an area having an occupant load of 100 or more persons shall be permitted to be provided with a latch or lock only if it is panic hardware or fire exit hardware complying with 5-2.1.7.

Exception No. 1: In assembly occupancies having an occupant load not greater than 500, where the main exit consists of a single door or single pair of doors, locking devices complying with Exception No. 2 to 5-2.1.5.1 shall be permitted on the main exit. Any latching device on this door(s) shall be released by panic hardware.

Exception No. 2: Delayed egress locks as permitted in 8-2.2.2.4.

Exception No. 3: Access-controlled egress doors as permitted in 8-2.2.2.5.

8-2.2.2.4 Delayed egress locks complying with 5-2.1.6.1 shall be permitted on doors other than main entrance/exit doors.

8-2.2.2.5 Doors in the means of egress shall be permitted to be equipped with an approved, access control system complying with 5-2.1.6.2. Doors shall not be locked from the egress side when the assembly occupancy is occupied. (See 5-2.1.1.3.)

8-2.2.2.6 Revolving doors complying with the requirements of 5-2.1.10 shall be permitted.

8-2.2.2.7 Turnstiles. No turnstiles or other devices that restrict the movement of persons shall be installed in any assembly occupancy in such a manner as to interfere in any way with required means of egress facilities.

8-2.2.3 Stairs.

8-2.2.3.1 Stairs complying with 5-2.2 shall be permitted.

Exception No. 1*: Stairs serving seating that is designed to be repositioned shall not be required to comply with 5-2.2.3.1.

Exception No. 2: Stairs and platforms as permitted by 8-4.5.

8-2.2.3.2 Catwalk, Gallery and Gridiron Stairs.

Exception No. 1: Stairs serving seating that is designed to be repositioned shall not be required to comply with 5-2.2.3.2.

Exception No. 2: Stairs and platforms as permitted by 8-4.5.

8-2.2.3.3 Spiral stairs complying with 5-2.2.2.7 shall be permitted in means of egress from lighting and access catwalks, galleries, and gridirons.

8-2.2.3.4 Areas of Refuge. Areas of refuge complying with 5-2.2.3 shall be permitted.

8-2.2.4 Smokeproof Enclosures. Smokeproof enclosures complying with 5-2.2.4 shall be permitted.

8-2.2.5 Horizontal Exits. Horizontal exits complying with 5-2.4 shall be permitted.

8-2.2.6 Ramps. Ramps complying with 5-2.5 shall be permitted. Exceptions: Ramps serving only stages or nonpublic areas and ramped aisles shall be permitted to have a slope not steeper than 1 in 9.

8-2.2.7 Exit Passageways. Exit passageways complying with 5-2.6 shall be permitted.

8-2.2.8 Areas of Refuge. Areas of refuge complying with 5-2.12 shall be permitted.

8-2.3 Capacity of Means of Egress.

8-2.3.1 The capacity of means of egress shall be in accordance with Section 5-3 or, for means of egress serving theater-type seating or similar seating arranged in rows, in accordance with 8-2.3.2.

8-2.3.2* Minimum clear widths of aisles and other means of egress serving theater-type seating or similar seating arranged in rows shall be in accordance with Table 8-2.3.2. The minimum clear widths shown shall be modified in accordance with all of the following:

(a) If risers exceed 7 in. (17.8 cm) in height, multiply the stair width in the table by factor A, where

\[
A = 1 + \left( \frac{\text{riser height} - 7 \text{ in.}}{5} \right)
\]

(b) Stairs not having a handrail within a 30-in. (76-cm) horizontal distance shall be 25 percent wider than otherwise calculated, i.e., multiply by factor B = 1.25.

(c) Ramps steeper than 1 in 10 slope where used in ascent shall have their width increased by 10 percent, i.e., multiply by factor C = 1.10.

Exception No. 1: Lighting and access catwalks as permitted by 8-4.5.

Exception No. 2: Grandstands, bleachers, and folding and telescopic seating as permitted by 8-4.8.

Table 8-2.3.2 Capacity Factors

<table>
<thead>
<tr>
<th>Nominal No. of Seats</th>
<th>Flow Time (sec)</th>
<th>Stairs</th>
<th>Passageways, Ramps, and Doorways</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlimited</td>
<td>200</td>
<td>0.300 AB</td>
<td>0.200 C</td>
</tr>
</tbody>
</table>

(1 in. = 2.54 cm)
permitted to provide the required capacity of the main entrance/exit regardless of whether all such exits serve as entrances to the building.

Exception No. 1: A bowling establishment shall have a main entrance/exit of sufficient capacity to accommodate 50 percent of the total occupant load without regard to the number of aisles that serve.

Exception No. 2*: In assembly occupancies where there is no well-defined main entrance/exit, exits shall be permitted to be distributed around the perimeter of the building provided the total exit width furnishes a minimum of 100 percent of the width needed to accommodate the permitted occupant load.

8-2.3.4 Other Exits. Each level of an assembly occupancy shall have access to the main entrance/exit and shall be provided with additional exits of sufficient width to accommodate a minimum of one half of the total occupant load served at that level. Such exits shall discharge in accordance with 8-2.7. Such exits shall be located as far apart as practicable and as far from the main entrance/exit as practicable. Such exits shall be accessible from a cross aisle or a side aisle. (See 8-2.3.3.)

Exception: In assembly occupancies where there is no well-defined main entrance/exit, exits shall be permitted to be distributed around the perimeter of the building, provided the total exit width furnishes a minimum of 100 percent of the width needed to accommodate the permitted occupant load.

8-2.4* Number of Exits. (See also Section 5-4.)

8-2.4.1 Every Class A assembly occupancy shall have at least four separate means of egress as remotely located from each other as practicable.

Exception: Fenced outdoor assembly occupancies in accordance with 8-2.4.4.

8-2.4.2 Every Class B assembly occupancy shall have at least two separate means of egress as remotely located from each other as practicable and, if of an occupant load greater than 500, at least three separate means of egress.

Exception: Fenced outdoor assembly occupancies in accordance with 8-2.4.4.

8-2.4.3 Every Class C assembly occupancy shall have at least two means of egress consisting of separate exits or doors leading to a corridor or other spaces that provide access to two separate and independent exits located in different directions.

Exception: Fenced outdoor assembly occupancies in accordance with 8-2.4.4.

8-2.4.4 A fenced outdoor assembly occupancy shall have at least two widely separated means of egress from the enclosure. If more than 6,000 persons are to be served by such means of egress, there shall be at least three means of egress; if more than 9,000 persons are to be served, there shall be at least four means of egress.

8-2.4.5 Balconies or mezzanines having an occupant load not greater than 50 shall be permitted to be served by a single means of egress and such means of egress shall be permitted to lead to the floor below.

8-2.4.6 Balconies or mezzanines having an occupant load greater than 50 but not greater than 100 shall have at least two remote means of egress, but both such means of egress shall be permitted to lead to the floor below.

8-2.4.7 Balconies or mezzanines having an occupant load greater than 100 shall have means of egress provided as for a floor.

8-2.5 Arrangement of Means of Egress. (See also Section 5-5.)

8-2.5.1 Exits shall be located remotely from each other and shall be arranged to minimize the possibility that they might be blocked by any emergency.

Exception: A common path of travel shall be permitted for the first 20 ft (6.1 m) from any point where serving any number of occupants and for the first 75 ft (23 m) from any point where serving not more than 50 occupants.

8-2.5.2 Means of egress shall not be permitted through kitchens, storerooms, restrooms, closets, or hazardous areas as described in 8-3.2.

8-2.5.3 Where the floor area of auditoriums and arenas is used for activities/events described by 8-1.7.1, at least 50 percent of the occupant load shall have means of egress provided without passing through adjacent fixed seating areas.

8-2.5.4 The minimum width of any exit access corridor serving 50 or more persons shall be 44 in. (112 cm).

8-2.5.5 General Requirements for Access and Egress Routes Within Assembly Areas.

8-2.5.5.1 Festival seating shall be prohibited within a building. (See Section 5-2.)

Exception No. 1: Festival seating shall be permitted in Class B and Class C assembly occupancies.

Exception No. 2: Festival seating shall be permitted in Class A assembly occupancies with an approved life safety evaluation. (See 8-4.1.)

8-2.5.5.2* Access and egress routes shall be maintained so that any individual is able to move without undue hindrance, on personal initiative and at any time, from an occupied position to exits.

8-2.5.5.3* Access and egress routes shall be maintained so that cross management, security, and emergency medical personnel shall be able to move without undue hindrance at any time to any individual.

8-2.5.5.4* The width of aisle accessways and aisles shall provide sufficient egress capacity for the number of persons accommodated by the catchment area served by the aisle accessway or aisle in accordance with 8-2.3.1. Where aisle accessways or aisles converge to form a single path of egress travel, the required egress capacity of that path shall not be less than the combined required capacity of the converging aisle accessways and aisles.

8-2.5.5.5 Those portions of aisle accessways and aisles where egress is possible in either of two directions shall be uniform in required width.

8-2.5.6 In the case of side boundaries, other than nonfixed seating at tables, for aisle accessways or aisles, the clear width shall be measured to boundary elements such as walls, guardrails, handrails, edges of seating, tables, and side edges of treads, with the measurement made horizontally to the vertical projection of the elements resulting in the smallest width measured perpendicularly to the line of travel.

8-2.5.6.1 Aisle Accessways.

8-2.5.6.1* To determine the required clear width of aisle accessways between rows of seating, horizontal measurements shall be made (between vertical planes) from the back of one seat to the front of the most forward projection of the seat immediately behind it, where the entire row consists of automatic or self-rising seats that comply with ASTM F851, Test Method for Self-Rising Seat Mechanisms, the measurement shall be permitted to be made with the seats in the up position.

8-2.5.6.2 The aisle accessway between rows of seating shall have a clear width of not less than 12 in. (30.5 cm), and this minimum shall be increased as a function of row length in accordance with 8-2.5.6.3 and 8-2.5.6.4.

Exception: If used by not more than four persons, there shall be no minimum clear width requirement for the portion of the aisle accessway having a length not exceeding 6 ft (1.8 m) measured from the center of the seat farthest from the aisle.

8-2.5.6.3* Rows of seating served by aisles or doorways at both ends shall have no more than 100 seats per row. The 12-in. (30.5-cm) minimum clear width of aisle accessway between such rows shall be increased by 0.5 in. (0.8 cm) for every seat over a total of 14, but need not exceed 22 in. (55.9 cm).

Exception: Smoke protected assembly seating as permitted by 8-2.5.

8-2.5.6.4 Rows of seating served by an aisle or doorway at one end only shall have a path of travel not exceeding 30 ft (9.1 m) in length from any seat to an aisle. The 12-in. (30.5-cm) minimum clear width of aisle accessway between such rows shall be increased by 0.6 in. (1.6 cm) for every seat over a total of seven.

Exception: Smoke protected assembly seating as permitted by 8-2.5.6.5.

8-2.5.6.5 Rows of seating utilizing tablet-arm chairs shall be permitted only if the clear width of aisle accessways complies with the requirements of 8-2.5.7 where the tablet is in the usable position.

Exception: Tablet arms shall be permitted to be measured in the stored position where the tablet arm automatically returns to the stored position when raised manually to a vertical position in one motion and falls to the stored position by force of gravity.

8-2.5.7 Aisles.

8-2.5.7.1 Dead-end aisles shall not exceed 20 ft (6.1 m) in length.

Exception No. 1: A longer dead-end aisle shall be permitted where seats served by the dead-end aisle are not more than 24 seats from another aisle, measured along a row of seats having a minimum clear width of 12 in. (30.5 cm) plus 0.6 in. (1.5 cm) for each additional seat over a total of seven in the row.

Exception No. 2: A 16-row dead-end aisle shall be permitted in folding and telescopic seating.

8-2.5.7.2 The minimum clear width of aisles shall be sufficient to provide egress capacity in accordance with 8-2.5.2 but shall be not less than:

(a) 48 in. (122 cm) for stairs having seating on each side.
(b) 36 in. (91 cm) for stairs having seating on only one side.
(c) 28 in. (71 cm) between a handrail and seating or a guardrail where the aisle is subdivided by a handrail.
(d) 42 in. (107 cm) for level or ramped aisles having seating on both sides.
(e) 36 in. (91 cm) for level or ramped aisles having seating on only one side.
(f) 23 in. (58 cm) between a handrail or guardrail and seating
where the aisle does not serve more than five rows on one side.

8-2.5.7.4 Aisle Stair Treads.

(a) There shall be no variation exceeding 3/16 in. (0.5 cm) in the depth of adjacent treads.

(b) Treads shall be a minimum of 11 in. (27.9 cm).

(c) All treads shall extend the full width of the aisle.

8-2.5.7.5 Aisle Stair Risers.

(a) Riser heights shall be a minimum of 4 in. (10.2 cm).

(b) Riser heights shall not exceed 8 in. (20.3 cm).

Exception No. 1: Where the width of an aisle is steeper than 8 in. (20.3 cm) in rise in 11 in. (27.9 cm) of run (to maintain necessary sight lines in the adjoining seating area), the riser height shall be permitted to exceed 8 in. (20.3 cm) but shall not exceed 9 in. (22.9 cm).

Exception No. 2 to (b): Folding and telescopic seating in accordance with 8-4.8.4.5.

(c) Riser heights shall be designed to be uniform in each aisle, and the construction-caused nonuniformities shall not exceed 3/16 in. (0.5 cm) between adjacent risers.

Exception to (c): Riser height shall be permitted to be nonuniform only for the purpose of accommodating necessary changes in gradient to maintain necessary sight lines within a seating area and shall be permitted to exceed 3/16 in. (0.5 cm) in any flight. Where nonuniformities exceed 3/16 in. (0.5 cm) between adjacent risers, the exact location of such nonuniformities shall be indicated by a distinctive marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform risers.

8-2.5.7.6 Aisle Handrails.

Ramped aisles having a gradient exceeding 1 in 12 and aisle stairs shall be provided with handrails on one side or along the centerline.

Where there is seating on both sides of the aisle, the handrails shall be discontinuous with gaps or breaks at intervals not exceeding five rows to facilitate access to seating and to permit crossing from one side of the aisle to the other. These gaps or breaks shall have a clear width of not less than 22 in. (55.9 cm) and shall be permitted to exceed 3/16 in. (0.5 cm) in any flight. Where nonuniformities exceed 3/16 in. (0.5 cm) between adjacent handrails, the exact location of such nonuniformities shall be indicated by a distinctive marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform risers.

8-2.5.8 Aisle Handrails. Ramped aisles having a gradient of not less than 22 in. (55.9 cm) and not greater than 36 in. (91 cm) measured horizontally, and the handrail shall have rounded terminations or ends. Where handrails are provided in the middle of aisle stairs, there shall be an additional intermediate rail located approximately 12 in. (30.5 cm) below the main handrail.

Exception No. 1: Handrails shall not be required for ramped aisles having a gradient not steeper than 1 in 8 and having seating on both sides.

Exception No. 2: The requirement for a handrail is satisfied by the use of a guard providing a rail that complies with the graspability requirements for handrails and is located at a consistent height in accordance with Section 5-9.

8-2.5.8.1 The minimum required clear width of an aisle accessway shall be 12 in. (30.5 cm) where measured in accordance with 8-2.5.8.2 and increased as a function of length in accordance with 8-2.5.8.3.

Exception*: If used by not more than four persons, there shall be no minimum clear width requirement for the portion of aisle accessway having a length not exceeding 6 ft (1.8 m) and located farther from an aisle stair.

8-2.5.8.2* Where nonfixed seating is located between a table and an aisle accessway or aisle, the measurement of required clear width of the aisle accessway or aisle shall be made to a line 19 in. (48.3 cm) away from the edge of the table. The 19 in. (48.3 cm) measure shall be measured perpendicular to the line of the table.

Exception*: Minimum required clear width of an aisle accessway measured in accordance with 8-2.5.8.2 and 8-2.5.8.5 shall be increased beyond the 12 in. (30.5 cm) requirement by 1/2 in. (1.3 cm) for each additional 12 in. (30.5 cm) or fraction thereof beyond 12 ft (3.7 m) of aisle accessway length measured from the center of the seat farthest from an aisle stair.

8-2.5.8.4 The path of travel along the aisle accessway shall not exceed 36 ft (10.9 m) from any seat to the closest aisle or egress doorway.

8-2.5.9 Aisles Serving Seating at Tables.

8-2.5.9.1* Aisles that contain steps or that are ramped, such as the aisles serving dinner theater style configurations, shall comply with the requirements of 8-2.5.7.

8-2.5.9.2* The minimum width of aisles serving seating at tables shall be 44 in. (112 cm) where serving an occupant load greater than 50, and 36 in. (91 cm) where serving an occupant load of 50 or fewer.

8-2.5.10 Approval of Layouts. Where required by the authority having jurisdiction, plans drawn to scale showing the arrangement of furnishings or equipment shall be submitted to the authority by the building owner, manager, or authorized agent to substantiate conformance with the provisions of this section and shall constitute the only acceptable arrangement until revised or additional plans are submitted and approved.

Exception No. 1: Unprotected vertical openings connecting not more than three floors in accordance with 6-2.4.5 shall be permitted.

Exception No. 2: Atmna in accordance with 6-2.4.6 shall be permitted.

Exception No. 3*: Stairs or ramps shall be permitted to be
unenclosed between balconies or mezzanines and main assembly areas located below provided the balcony or mezzanine is open to the main assembly area.

8-3.2 Protection from Hazards.

8-3.2.1 Service Equipment, Hazardous Operations or Processes, and Storage Facilities.

8-3.2.1.1 Rooms containing high pressure boilers, refrigerating machinery of other than domestic refrigerator type, large transformers, or other service equipment subject to possible explosion shall not be located directly under or abutting required exits. All such rooms shall be separated from other parts of the building by fire barriers in accordance with 6-2.3 having a fire resistance rating of not less than 1 hour or shall be protected by automatic extinguishing systems in accordance with Section 6-4.

8-3.2.1.2 Adequate vents to the outside air shall be provided in accordance with Section 6-4.

8-3.2.1.3 Rooms or spaces for the storage, processing, or use of materials specified below shall be protected in accordance with the following:

(a) Separation from the remainder of the building by fire barriers having a fire resistance rating of not less than 1 hour and protection of such rooms by automatic extinguishing systems as specified in Section 6-4 in the following areas:

(1) Boiler and furnace rooms.

Exception to (1): Rooms enclosing only air-handling or compressed air equipment.

(2) Rooms or spaces used for the storage of combustible supplies in quantities deemed hazardous by the authority having jurisdiction.

(3) Rooms or spaces used for the storage of hazardous materials or flammable or combustible liquids in quantities deemed hazardous by recognized standards.

(4) Rooms containing fuel.

(b) Separation from the remainder of the building by fire barriers having a fire resistance rating of not less than 1 hour and protection of such rooms by automatic extinguishing systems as specified in Section 6-4 in the following areas:

(1) Laundries.

(2) Maintenance shops, including woodworking and painting areas.

(3) Rooms or spaces used for processing or use of combustible supplies deemed hazardous by the authority having jurisdiction.

(4) Rooms or spaces used for processing or use of hazardous materials or flammable or combustible liquids in quantities deemed hazardous by recognized standards.

(c) Where automatic extinguishing is used to meet the requirements of this section, the protection shall be permitted to be in accordance with 7-7.1.2.

8-3.5 Interior Finish.

8-3.5.1 The interior finish requirements of this section shall be in accordance with Section 6-3.

8-3.5.2 Interior finish in all corridors and lobbies shall be Class A or Class B and, in enclosed stairways, Class A.

8-3.5.3 Interior finish in general assembly areas of Class A and Class B assembly occupancies shall be Class A or Class B. In Class C assembly occupancies, interior finish shall be Class A, Class B, or Class C.

Exception: In any assembly occupancy, exposed portions of structural members complying with the requirements for Type IV (2111) construction shall be permitted.

8-3.5.4 Screens on which pictures are projected shall comply with requirements of Class A or Class B interior finish.

8-3.4 Detection, Alarm, and Communications Systems.

8-3.4.1 General. Class A and Class B assembly occupancies and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system in accordance with 7-5.1 and this section.

Exception No. 1: Assembly occupancies that are a part of a mixed occupancy (see 4-1.11) shall be permitted to be served by a common fire alarm system provided the individual requirements of each occupancy are met.

Exception No. 2: Voice communications or public address systems complying with 8-3.4.3.5 shall not be required to comply with 7-6.1.

8-3.4.2 Initiation.

8-3.4.2.1 Initiation of the required fire alarm system shall be by manual means in accordance with 7-6.2.1(a), which shall be provided with an emergency power source. The initiating device shall be capable of transmitting an alarm to a receiving station, located within the building, that is constantly attended when the assembly occupancy is occupied.

Exception No. 1: Initiation by means of an approved, automatic fire detection system in accordance with 7-6.2.1(b) that provides fire detection throughout the building.

Exception No. 2: Initiation by means of an approved, automatic sprinkler system in accordance with 7-6.2.1(c) that provides fire detection and protection throughout the building.

8-3.4.3* In all Class A and in all Class B assembly occupancies, automatic detection shall be provided in all hazardous areas that are not normally occupied.

Exception: Areas that are protected throughout by an approved, automatic sprinkler system in accordance with 7-7.1.

8-3.4.3.1 Notification.

8-3.4.3.1.1 The required fire alarm system shall sound an audible alarm in a constantly attended receiving station within the building when occupied for purposes of initiating emergency action. A presignal system in accordance with Exception No. 1 to 7-6.3.2 shall be permitted. Positive alarm sequence in accordance with Exception No. 2 to 7-6.3.2 shall be permitted.

8-3.4.3.2 Occupant notification shall be by means of voice announcements, either live or prerecorded, initiated by the person in the constantly attended location.

8-3.4.3.3 The announcement shall be made via an approved voice communications or public address system, provided with an emergency power source, that is audible above the ambient noise level of the assembly occupancy.

8-3.4.4 Where the authority having jurisdiction determines that it is impractical to have a constantly attended location, a fire alarm system in accordance with Section 7-6 that is initiated by manual stations in accordance with 7-6.2.1(a) or other approved means of initiation and that automatically provides prerecorded evacuation instructions in accordance with 7-6.3.8 shall be used.

8-3.5 Extinguishment Requirements. (See also 8-1.6, 8-2.6, 8-3.2, and 8-3.6.)

8-3.5.1 Buildings containing Class A or Class B assembly occupancies shall be protected by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7 as follows:

(a) Throughout the story containing the assembly occupancy, and

(b) Throughout all stories below the story containing the assembly occupancy, and

(c) In the case of an assembly occupancy located below the level of exit discharge, throughout all stories intervening between that story and the level of exit discharge including the level of exit discharge.

Exception No. 1: Assembly occupancies used primarily for worship with fixed seating and not part of a mixed occupancy. (See 4-1.11.)

Exception No. 2: Assembly occupancies consisting of a single multipurpose room of less than 12,000 sq ft (1,100 sq m) and not used for exhibition or display.

Exception No. 3: Gymnasiums, skating rinks, and swimming pools used exclusively for participant sports with no audience facilities for more than 500 persons.

8-3.6 Corridors. Interior corridors and lobbies shall be constructed in accordance with 5-1.3.5 and 6-2.3.

Exception No. 1: Corridor and lobby protection shall not be required where assembly rooms served by the corridor or lobby have at least 50 percent of their exit capacity discharging directly to the outside, independent of corridors and lobbies.

Exception No. 2: Corridor and lobby protection shall not be required in buildings protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 7-7.

Exception No. 3: Lobbies serving only one assembly area that meet the requirements for intervening rooms (see 5-1.1.7) need not have a fire resistance rating.

Exception No. 4: Where the corridor ceiling is an assembly having a 2-hour fire resistance rating and where located as a wall, the corridor walls shall be permitted to terminate at the corridor ceiling.

SECTION 8-4 SPECIAL PROVISIONS

8-4.1 Life Safety Evaluation.

8-4.1.1 Where a life safety evaluation is required by other provisions of this Code, it shall be done by persons acceptable to the authority having jurisdiction. The life safety evaluation shall include a written assessment of safety measures for conditions listed in 8-4.1.2. The life safety evaluation shall be approved annually by the authority having jurisdiction and shall be updated for special or unusual conditions.

8-4.1.2 Life safety evaluations shall include an assessment of the following conditions and the related appropriate safety measures:

(a) Nature of the events and the participants and attendees,

(b) Access and egress movement including crowd density problems,

(c) Medical emergencies,

(d) Fire hazards,

(e) Permanent and temporary structural systems,

(f) Severe weather conditions,

(g) Earthquakes,

(h) Civil or other disturbances,

(i) Hazardous materials incidents within and near the facility, and

(j) Relationships among facility management, event participants, emergency response agencies, and others having a role in the events accommodated in the facility.

8-4.1.3 Life safety evaluations shall include assessments of both
building systems and management features upon which reliance is placed for the safety of facility occupants.

8.4.2 Smoke-Protected Assembly Seating.

8.4.2.1 For smoke-protected assembly seating conforming with the requirements of 8.4.2, the travel distance from each seat to the nearest entrance to an egress vomitory portal or egress concourse shall not exceed 200 ft (60 m). The travel distance from the entrance to vomitory portal or from egress concourse to an approved egress stair, ramp, or walk at the building exterior shall not exceed 200 ft (60 m).

Exception: In outdoor assembly seating facilities providing smoke-protected assembly seating conforming with the requirements of 8.4.2 and where all portions of the means of egress are essentially open to the outside, the distance of travel to an approved egress stair, ramp, or walk at the building exterior shall not exceed 400 ft (122 m). In outdoor assembly seating facilities of Type I or Type II construction, where all portions of the means of egress are essentially open to the outside, the distance shall not be limited.

8.4.2.2 Fire Protection Requirements. To be considered smoke-protected, an assembly seating facility shall comply with the following:

(a) All enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be protected with an approved, automatic sprinkler system in accordance with Section 8-7.

Exception to (a): The floor area used for the contest, performance, or entertainment, provided the roof construction is more than 50 ft (15 m) above the floor level and use is restricted to low fire hazard uses.

(b) All means of egress serving a smoke-protected assembly seating area shall be provided with smoke-actuated ventilation facilities or natural ventilation designed to maintain the level of smoke at least 6 ft (1.8 m) above the means of egress.

8.4.2.3 Life Safety Evaluation. For facilities to utilize the provisions of smoke-protected assembly seating, a life safety evaluation shall be done in accordance with 8.4.1.

8.4.2.4 For Table 8.4.2.4 the number of seats specified must be within a single assembly space, and interpolation shall be permitted between the specific values shown. The minimum clear widths shown shall be modified in accordance with all of the following:

(a) If risers exceed 7 in. (17.8 cm) in height, multiply the stair width in the tables by factor A, where

\[ A = 1 + \left( \frac{\text{riser height} - 7 \text{ in.}}{8} \right) \]

(b) Stairs not having a handrail within a 30-in. (76-cm) horizontal distance shall be 25 percent wider than otherwise calculated, i.e., multiply by factor B = 1.25.

(c) Ramps steeper than 1 in. 10 slope where used in ascent shall have their width increased by 10 percent, i.e., multiply by factor C = 1.10.

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### Table 8.4.2.4 Capacity Factors

<table>
<thead>
<tr>
<th>No. of Seats</th>
<th>Flow Time (sec)</th>
<th>Nominal Inch of Clear Width Per Seat Served</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stairs</td>
<td>Stairways, Ramps, and Doorways</td>
</tr>
<tr>
<td>2,000</td>
<td>200</td>
<td>0.200 AB 0.200 C</td>
</tr>
<tr>
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<td>260</td>
<td>0.200 AB 0.150 C</td>
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<td>10,000</td>
<td>360</td>
<td>0.150 AB 0.100 C</td>
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<tr>
<td>15,000</td>
<td>460</td>
<td>0.096 AB 0.070 C</td>
</tr>
<tr>
<td>20,000</td>
<td>560</td>
<td>0.076 AB 0.056 C</td>
</tr>
<tr>
<td>25,000 or more</td>
<td>600</td>
<td>0.060 AB 0.044 C</td>
</tr>
</tbody>
</table>

(1 in. = 2.54 cm)

8.4.2.5 With smoke-protected assembly seating conforming to the requirements of 8.4.2, for rows of seats served by aisles or doorways at both ends, there shall be no more than 100 seats per row and the minimum clear width of 12 in. (30.5 cm) for aisle accessways shall be increased by 0.3 in. (0.8 cm) for every additional seat beyond the number stipulated in Table 8.4.2.5, but the minimum clear width need not exceed 22 in. (55.9 cm).

8.4.2.6 With smoke-protected assembly seating conforming to the requirements of 8.4.2, for rows of seats served by an aisle or doorway at one end only, the aisle accessway minimum clear width of 12 in. (30.5 cm) shall be increased by 0.5 in. (1.6 cm) for every additional seat beyond the number stipulated in Table 8.4.2.5, but the minimum clear width need not exceed 22 in. (55.9 cm).

8.4.2.7 Smoke-protected assembly seating conforming with the requirements of 8.4.2 shall be permitted to have a common path of travel of 50 ft (15 m) from any seat to a point where a person has a choice of two directions of egress travel.

8.4.2.8 Aisle Termination. For smoke-protected assembly seating conforming to the requirements of 8.4.2, the dead ends in aisle stairs shall not exceed a distance of 21 rows.

Exception: A longer dead-end aisle shall be permitted for smoke-protected assembly seating where seats served by the dead-end aisle are no more than 40 seats from another aisle, measured along a row of seats having an aisle accessway with a minimum clear width of 12 in. (30.5 cm) plus 0.5 in. (0.8 cm) for each additional seat above seven in the row.

8.4.3 Windowless or Underground Buildings.

8.4.3.1 Windowless or underground buildings shall comply with this section and Section 30-7.

8.4.3.2 Underground buildings or portions of buildings having a floor level more than 30 ft (9.1 m) below the level of exit discharge shall comply with the requirements contained in 8.4.3.3 through 8.4.3.5.

Exception No. 1: Areas within buildings used only for service to the building, such as boiler/heater rooms, cable vaults, dead storage, and the like.

Exception No. 2: Auditoriums without intervening occupiable levels complying with the requirements of this chapter.

8.4.3.3 Each level more than 30 ft (9.1 m) below the level of exit discharge shall be divided into not less than two smoke compartments by a smoke barrier complying with Section 6-3 and having a 1-hour fire resistance rating.

(a) Each smoke compartment shall have access to at least one exit without passing through the other required compartment. Any doors connecting required compartments shall be tight-fitting, minimum 1-hour rated fire doors designed and installed to minimize smoke leakage and to close and latch automatically upon detection of smoke.

(b) Each smoke compartment shall be provided with a mechanical means of moving people vertically, such as an elevator or escalator.

(c) Each smoke compartment shall have an independent air supply and exhaust system capable of smoke control or smoke exhaust functions that provides a minimum smoke exhaust rate of six air changes per hour.

(d) Each smoke compartment shall be provided with an automatic smoke detection system throughout. The system shall be designed such that the activation of any two detectors shall cause the smoke control system to operate and the building voice alarm to sound.
8-4.3.5 The building shall be provided with an approved, supervised voice alarm system in accordance with Section 7-6. The voice alarm system shall comply with 7-6.3.8. A pre-recorded evacuation message shall be provided.

8-4.4 High Rise Buildings. High rise assembly occupancy buildings and high rise mixed occupancy buildings that house assembly occupancies in the high rise portions of the building shall comply with Section 30-8.

8-4.5 Stages and Platforms. (See 8-1.3.)

8-4.5.1 Materials and Design. Materials used in the construction of platforms and stages shall conform to the applicable requirements of the local building code.

8-4.5.2 Platform Construction. Temporary platforms shall be permitted to be constructed of any materials.

8-4.5.3 Stage Construction. Regular stages and thrust stages shall be constructed of materials as required for the type of construction of the building in which the permanent platform is located except that the finish floor shall be permitted to be of wood in all types of construction. Where the space between the floor and the platform above shall not be used for any purpose other than electrical wiring to platform equipment.

8-4.5.4 Permanent platforms shall be constructed of materials as required for the type of construction of the building in which the permanent platform is located except that the finish floor shall be permitted to be of wood in all types of construction. Where the space beneath the platform is located except that the finish floor shall be permitted to be of wood in all types of construction. Where the space between the floor and the platform above shall not be used for any purpose other than electrical wiring to platform equipment.

8-4.5.5 Ventilators. Regular stages greater than 1,000 sq ft (95 sq m) in area and legitimate stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. Ventilation shall be by one or a combination of the following methods:

(a) Smoke Control. A means complying with Section 7-3 shall be provided to maintain the smoke level not less than 6 ft (183 cm) above the highest level of seating to the back wall of the stage, and for a distance of 5 ft (183 cm) beyond the proscenium opening on each side, shall be permitted to be constructed of steel or heavy timber covered with a wood floor not less than 1 1/2 in. (3.8 cm) in actual thickness.

(b) Roof Vents. Two or more vents shall be located near the center of and above the highest part of the stage area. They shall be raised above the roof and shall provide a net free area equal to 5 percent of the stage area. Vents shall be constructed to open automatically by approved heat-activated devices. Supplemental manual operation shall be permitted for manual operation of the ventilator from the stage floor. Vents shall be labeled.

(c) Other Controls. Approved, alternate means of removing smoke and combustion gases shall be permitted.

8-4.5.6 Proscenium Walls. Legitimate stages shall be completely separated from the seating area by a proscenium wall of not less than 2-hour fire-resistive noncombustible construction. The proscenium wall shall extend at least 4 ft (122 cm) above the roof of the auditorium to combustible construction.

All openings in the proscenium wall of a legitimate stage shall be protected by a fire assembly having a 1 1/2-hour fire protection rating. Exception: The main proscenium opening used for viewing performances shall be protected with an automatic-closing fire-resistant curtain as described in 8-4.5.7.

8-4.5.7 Proscenium Opening. Where required by 8-4.5.6, the proscenium opening shall be protected by a fire curtain or an approved water curtain complying with NFPA 13, Standard for the Installation of Sprinkler Systems. The fire curtain shall be designed to close automatically upon automatic detection of a fire and upon manual activation and shall resist the passage of flame and smoke between the stage area and the audience area for 20 minutes.

A fire curtain shall be an assembly labeled by an approved agency or shall be constructed as follows:

(a) Asbestos Fabrics. Where not prohibited by applicable federal, state, or local law, a curtain shall be permitted to be made of one of more thicknesses of a minimum 2 5/8 4H sq yd (1.5 kg/sq m) A A A grade wire-inserted asbestos fabric or of another wire-inserted asbestos fabric of greater fire resistance than 2 3/4 4B sq yd (1.5 kg/sq m) A A A grade wire-inserted fabric. Nonasbestos portions of these fabrics, if any, shall be flame-resistant treated so as not to support combustion.

(b) Other Fabrics. Curtains not meeting the above criteria shall be made of one or more thicknesses of a noncombustible fabric or a fabric with a noncombustible material, which shall be permitted to be given a coating provided the modified fabric meets the criteria detailed in this section. Curtain fabrics shall have a minimum weight of 2 3/8 lb/sq yd (1.3 kg/sq m).

(c) Tensile Strength Requirements. Curtain fabric shall have minimum tensile strength requirements of 400 lb/in. (540 N/m) in both the warp and fill directions.

(d) Wire-Insertion Reinforcement Requirements. The fabric shall be reinforced with noncorrosive wire intertwined with the fiber base at a minimum rate of one wire per yard. Wire shall not be required and fabric weight shall be permitted to be less than 2 3/8 lb/sq yd (1.3 kg/sq m) if it can be substantiated by approved tests that it is equivalent in strength and durability.

(e) Fire Test. A sample curtain with a minimum of two vertical seams shall be subjected to the standard fire test specified in NFPA 251, Standard Methods of Fire Tests of Building Construction and Materials, as applicable to the building and materials of construction. The curtain shall extend for a period of 30 minutes. The curtain shall overlap the furnace edges by an amount that is appropriate to seal the top and sides. It shall have a bottom pocket containing a minimum 4 lb/linear ft (5 kg/m) of burlap. The unexposed surface of the curtain shall not glow, and neither flame nor smoke shall penetrate the curtain during the test period. Unexposed surface temperature and hose stream test requirements shall not be applicable to this proscenium fire safety curtain test.

(f) Smoke Test. Curtain fabrics shall have a smoke density of no greater than 25 when tested in accordance with NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials. The curtain fabric shall be tested in the condition in which it is to be used.

The complete installation of every proscenium curtain shall be subjected to operating tests, and any theater in which a proscenium curtain is placed shall not be open to public performance until after the proscenium curtain has been accepted and approved by the authority having jurisdiction. The curtain shall be kept in the normally closed position when each day's performances are completed.

The curtain shall be automatic-closing without the use of applied power. The curtain also shall be capable of manual operation.

(g) All proscenium curtains shall be in the closed position except during performances, testing, or retraction.

8-4.5.8 Gridiron, Fly Galleries, and Pinrails. Structural framing designed only for the attachment of portable or fixed theater equipment, gridirons, galleries, and catwalks shall be constructed of materials consistent with the building type of construction, and a fire resistance rating shall not be required.

Exception: Combustible materials shall be permitted for use as the floors of galleries and catwalks of all types of construction.

8-4.5.9 Catwalks. The minimum clear width of lighting and access catwalks and the means of egress from galleries and gridirons shall be 22 in. (56 cm).

8-4.5.10 Fire Protection. Every stage shall be protected by an approved automatic sprinkler system, supplemented by manual operation as required by 7-7. The protection shall be provided throughout the stage and in storerooms, workshops, permanent dressing rooms, and other accessory spaces contiguous to such stages.

Exception No. 1: Sprinklers shall not be required for stages 1,000 sq ft (95 sq m) or less in area and 50 ft (15 m) or less in height where curtains, scenery, or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs, and a single backdrop.

Exception No. 2: Sprinklers shall not be required under stage areas less than 4 ft (1.2 m) in height used exclusively for chair or table storage and lined on the inside with 5/8 in. (1.6 cm) Type X noncombustible wallboard or approved equivalent.

8-4.5.11 Flame-Resistant Materials. Combustible scenery of cloth, film, vegetation, and similar effects shall meet the requirements of NFPA 701, Standard Methods of Fire Tests for Flame-Resistant Textiles, Fabrics, Films, and Related Materials (See Section 5-2) shall be permitted to be used only by specific approval of the authority having jurisdiction. Scenery and stage properties on thrust
stages shall be of either noncombustible or limited-combustible materials. In theaters, motion picture theaters, and television stage settings, with or without horizontal projections, and simulated caves and caverns of foamed plastic, any single fuel package shall have a maximum heat release rate of 100 kW where tested in accordance with UL 1975, Standard for Foam Tests for Foamed Plastic Used for Decorative Purposes.

8.4.5.12 Standpipes. Regular stages over 1,000 sq ft (93 sq m) in area and all legitimate stages shall be equipped with a Class III standpipe located at each side of the stage and installed in accordance with 7.4.5.2. Where cellulose nitrate film is used, the projection room shall comply with NFPA 40, Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film.

8.4.6 Projection Booths.

8.4.6.1 Film or video projectors or spotlights utilizing light sources that produce particulate matter or toxic gases or light sources that produce hazardous radiation without protective shielding shall be located within a projection room complying with 8.3.2.2. Where cellulose nitrate film is used, the projection room shall comply with NFPA 40, Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film.

8.4.6.2 Projection Rooms for Safety Film. Projection rooms for safety film shall comply with the following:

(a) Every projection room shall be of permanent construction consistent with the construction requirements for the type of equipment to be housed in the projection room to provide room air circulation shall not be required to be protected. The room shall have a floor area of not less than 60 sq ft (7.4 sq m) for a single machine and not less than 40 sq ft (3.7 sq m) for each additional machine. Each motion picture projector, film or video projector, or spotlight, or similar piece of equipment shall have a clear working space of not less than 30 in. (76 cm) on each side and at its rear, but only one such space shall be required between adjacent projectors.

(b) The projection room and the rooms appurtenant to it shall have a ceiling height of not less than 7 ft 6 in. (2.3 m).

(c) Each projection room shall have at least one out-swinging, self-closing door not less than 30 in. (76 cm) wide and 6 ft 8 in. (2 m) high.

(d) The aggregate of ports and openings for projection equipment shall not exceed 25 percent of the area of the wall between the projection room and the auditorium. All openings shall be provided with glass or other approved material so as to completely close the opening.

(e) Projection room ventilation shall be not less than the following:

    (1) Supply Air. Each projection room shall be provided with adequate air supply inlets arranged to provide well-distributed air throughout the room. Air inlet ducts shall provide an amount of air equivalent to the amount of air being exhausted by projection equipment. Air shall be permitted to be taken from the outside, from an adjacent room, or from a mechanical ventilation system, provided it is arranged to supply sufficient air whether or not other systems are in operation.

    (2) Exhaust Air. Projection booths shall be permitted to be exhausted through the lamp exhaust system. The lamp exhaust system shall be positively interconnected with the lamp so that the lamp will not operate unless there is sufficient airflow required for the lamp. Exhaust air ducts shall terminate at the exterior of the building in such a location that the exhaust air cannot be readily recirculated into any air supply system. The projection room ventilation system shall be permitted to also serve appurtenant rooms, such as the generator room and the rewind room.

(f) Each projection machine shall be provided with an exhaust duct that will draw air from each lamp and exhaust it directly to the outside of the building. The lamp exhaust shall be permitted to exhaust air from the projection room air circulation. Such ducts shall be of rigid materials, except for a flexible connector approved for the purpose. The projection lamp and projection room exhaust systems shall be permitted to be combined but shall not be interconnected with any other exhaust or return air system within the buildings.

    (1) Electric Arc Projection Equipment. The exhaust capacity shall be 200 cfm (0.09 cu m/s) for each lamp connected to the lamp exhaust system, or as recommended by the equipment manufacturer. Auxiliary air shall be permitted to be introduced into the system through a screened opening to stabilize the arc.

    (2) Xenon Projection Equipment. The lamp exhaust system shall exhaust not less than 300 cfm (0.14 cu m/s) per lamp, or not less than that exhaust volume required or recommended by the equipment manufacturer, whichever is greater.

(f) Miscellaneous equipment and storage shall be protected as follows:

    (1) Each projection room shall be provided with rewind and film storage facilities.

(2) A maximum of four containers for flammable liquids of not greater than 16 oz (0.5 L) capacity and of a nonbreakable type shall be permitted in each projection booth.

(b) Apparatus such as rheostats, transformers, and generators, shall be permitted to be located within the booth or in a separate room of equivalent construction.

8.4.6.3 Projection Room Posting. Unless the projection room is constructed in accordance with NFPA 40, Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film, there shall be posted on the outside of each projection room door, and within the projection room proper, a conspicuous sign with 1-in. (2.5-cm) black letters stating, "SAFETY FILM ONLY PERMITTED IN THIS ROOM".

8.4.7 Special Amusement Buildings.

8.4.7.1 Special amusement buildings shall meet the requirements for assembly occupancies in addition to the requirements of this subsection. Special amusement buildings with an occupant load not greater than 500 persons shall be considered Class C assembly occupancies.

8.4.7.2 Every special amusement building shall be protected throughout by an approved, automatic sprinkler system installed and maintained in accordance with Section 7.7. Where the special amusement building is movable or portable, sprinkler water supply shall be permitted to be by an approved temporary means.

8.4.7.3 Where the nature of the special amusement building is such that it operates in reduced lighting levels, the building shall be protected throughout by an approved, automatic smoke detection system in accordance with Section 7.6. Actuation of any smoke detection system shall be provided with a conspicuous sign with 1-in. (2.5-cm) black letters in the projection room proper, a conspicuous sign with 1-in. (2.5-cm) black letters stating, "SAFETY FILM ONLY PERMITTED IN THIS ROOM".

8.4.7.4 Exit Marking.

8.4.7.4.1 Exit marking shall be in accordance with Section 5.10.

8.4.7.4.2 Exit marking in mobile special amusement buildings shall be of the luminescent, self-luminous, or electroluminescent type.

8.4.7.4.3 Floor proximity exit signs shall be provided in accordance with 5.10.1.5.

8.4.7.4.4* In special amusement buildings where mazes, mirrors, or other designs are used to confound the egress path, approved directional exit marking that will become apparent in an emergency shall be provided.

8.4.7.5 Interior Finish. Interior finish shall be Class A throughout in accordance with Section 6.5.

8.4.8 Grandstands, Bleachers, and Folding and Telescopic Seating.

8.4.8.1 Where bleacher or grandstand seating without backs is used in an assembly building, rows of seats shall be spaced not less than 24 in. (60.9 cm) back to back.

8.4.8.2 An opening between the seat board and footboard located more than 30 in. (76 cm) above grade shall be provided with intermediate construction so that a 4-in. (10.2-cm) diameter sphere cannot pass through the opening.

8.4.8.3 Aisles and Aisle Accessways.

8.4.8.3.1 Aisles shall be provided so that the number of seats between any seat and the nearest aisle shall not exceed the number shown in Table 8.4.8.3.1.

<table>
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(see 8.4.8.3.1)

*Exception No. 1*

Exception: No. 1 Aisles shall not be required in bleachers if all of the following are met:

(a) Egress from front row is not obstructed by rail, guard, or other obstruction.

(b) Row spacing is 28 in. (71.1 cm) or less.

(c) Rise per row, including first row, is 6 in. (15.2 cm) or less.

(d) Number of rows does not exceed 16.

(e) Seat spaces are not physically defined.

(f) Seat boards that are also used as stepping surfaces for descent shall have a minimum width of 12 in. (30.5 cm), and where there is a depressed footboard, the gap between seat boards of adjacent rows shall not exceed 12 in. (30.5 cm) measured horizontally. Leading
edges of such surfaces shall be provided with a contrasting marking stripe so that the location of such leading edge is readily apparent, particularly where viewed in descent. Such stripe shall be at least 1 in. (2.5 cm) wide and shall not exceed 2 in. (5.1 cm) in width. The marking stripe shall not be required where bleacher surfaces and environmental conditions under all conditions of use are such that the location of each leading edge is readily apparent, particularly when viewed in descent. Such stripe shall be at least 1 in. (2.5 cm) wide and shall not exceed 2 in. (5.1 cm) in width. The marking stripe shall not be required where bleacher surfaces and environmental conditions under all conditions of use are such that the location of each leading edge is readily apparent, particularly when viewed in descent. Exception No. 2: In seating composed entirely of bleachers, in which row-to-row dimension is 28 in. (71 cm) or less, and from which front egress is not limited, aisles shall not be required to be more than 60 in. (183 cm) in width. Such aisles shall not be considered as dead-end aisles.

8-4.8.3.3 In grandstand seating, dead ends in vertical aisles shall not exceed a depth of 16 rows.

8-4.8.3 A longer dead-end aisle shall be permitted where seats served by the dead-end aisle are not more than 24 seats from another aisle, measured along the row of seats having a minimum clear width of 12 in. (30.5 cm) plus 0.6 in. (1.5 cm) for each additional seat over a total of seven in the row.

8-4.8.4 Folding and Telescopic Seating.

8-4.8.4.1 The back-to-back horizontal distance of seats in folding and telescopic seating shall be not less than 22 in. (55.9 cm) for seats with fixed backs. There shall be a space of not less than 12 in. (30.5 cm) between the back of each seat and the front of each seat immediately behind it. If seats are of the chair type, the 12.5-in. (32.5-cm) dimension shall be measured to the front edge of the rear seat in its normal unoccupied position. All measurements shall be taken between plumb lines.

8-4.8.4.2 Aisles in folding and telescopic seating shall be permitted to be stepped aisles.

8-4.8.4.3 The rise of the stepped aisles in folding and telescopic seating shall be permitted to be a minimum of 3/4 in. (1.9 cm) and a maximum of 11 in. (27.9 cm).

8-4.8.4.4 The depth of footboards (footrests) and seat boards in grandstands and folding and telescopic seating shall not be less than 9 in. (22.9 cm). Where the same level is not used for both seat foundations and footrests, footrests independent of seats shall be provided.

8-4.8.5 Guards and Railings.

8-4.8.5.1 Railings or guards not less than 42 in. (107 cm) above the aisle surface or footrest or 36 in. (91 cm) vertically above the center of the seat or seat board surface, whichever is adjacent, shall be provided along those portions of the back and ends of all grandstands and folding and telescopic seating where the seats are more than 4 ft (1.2 m) above the floor or ground. Exception: Where an adjacent wall or fence affords equivalent safeguard.

8-4.8.5.2 Where the front footrest of any grandstand or folding or telescopic seating is more than 2 ft (0.6 m) above the floor, railings or guards not less than 33 in. (84 cm) above such footrests shall be provided.

8-4.8.5.3 Cross aisles located within the seating area shall be provided with rails not less than 25 in. (66 cm) high along the front edge of the cross aisle. Exception: Where the backs of the seats in front of the cross aisle project 24 in. (61 cm) or more above the surface of the cross aisle, the rail shall not be required.

8-4.8.5.4 Vertical openings between guardrails and footboards or seat boards shall be provided with guardrail or intermediate construction so that a 4 in. (10.2-cm) diameter sphere cannot pass through the opening.

SECTION 8-5 BUILDING SERVICES

8-5.1 Utilities. Utilities shall comply with the provisions of Section 7-1.

8-5.2 Heating, Ventilating, and Air Conditioning Equipment. Heating, ventilating, and air conditioning equipment shall comply with the provisions of Section 7-2.

8-5.3 Elevators, Escalators, and Conveyors. Elevators, escalators, and conveyors shall comply with the provisions of Section 7-4.

8-5.4 Rubbish Chutes, Incinerators, and Laundry Chutes. Rubbish chutes, incinerators, and laundry chutes shall comply with the provisions of Section 7-5.

SECTION 8-6 RESERVED

SECTION 8-7 OPERATING FEATURES

8-7.1 Special Provisions for Food Service Operations.

8-7.1.1 All devices in connection with the preparation of food shall be installed and operated to avoid hazard to the safety of occupants.
8-7.4.1 Fabrics and films used for decorative purposes, all draperies, and similar furnishings shall be in accordance with the provisions of 31-1.4.1.

8-7.4.2 The authority having jurisdiction shall impose controls on the amount and arrangement of combustible contents in assembly occupancies to provide an adequate level of safety to life from fire.

8-7.4.3 Exposed foamed plastic materials and unprotected materials containing foamed plastic used for decorative purposes or stage scenery shall have a maximum heat release rate of 100kW where tested in accordance with UL 1975, Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes.

Exception: Individual foamed plastic items or items containing foamed plastic where the foamed plastic does not exceed 1 lb (0.45 kg) in weight.

8-7.5 Special Provisions for Exposition Facilities.

8-7.5.1 No display or exhibit shall be installed or operated so as to interfere in any way with access to fire-fighting equipment, block access to fire-fighting equipment, or interfere in any way with access to any required exit or any required exit sign; nor shall any display or exhibit be installed or operated to interfere with any required exit or any required exit sign; nor shall any display or exhibit be installed or operated to interfere with visual visibility of any required exit or any required exit sign, nor shall any display block access to fire-fighting equipment.

8-7.5.2 A storage room having an enclosure consisting of a smoke barrier having a fire resistance rating of 1 hour and protected by an automatic extinguishing system shall be provided for combustible materials not on display, including combustible packing crates used to ship exhibitors' supplies and products.

8-7.5.3 Exhibits shall comply with 8-7.5.3.2 through 8-7.5.3.11.

8-7.5.3.2 The travel distance within the exhibit booth or exhibit enclosure to an exit access aisle shall not be greater than 50 ft (15 m).

8-7.5.3.3 The upper deck of multilevel exhibits greater than 500 sq ft (27.9 sq m) shall have at least two remote means of egress.

8-7.5.3.4 Exhibit booths shall be constructed of:

(a) Noncombustible or limited-combustible materials.

(b) Wood greater than 1/4 in. (0.6 cm) nominal thickness or wood not greater than 1/4 in. (0.6 cm) nominal thickness that is pressure treated fire-retardant wood meeting the requirements of NFPA 703, Standard for Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials.

(c) Flame-retardant materials complying with NFPA 701, Standard Methods of Fire Tests for Flame-Resistant Textiles and Films, both small and large scale tests.

(d) Textile wall covering such as carpeting having napped, tufted, looped, or similar surface used as wall or ceiling finish complying with 6-5.2.3.

(e) Plastic that is limited to a Class A or Class B interior wall and ceiling finish in accordance with 6-5.5.

(f) Foamed plastics and materials containing foamed plastics having a maximum heat release rate for any single fuel package of 100 kW where tested in accordance with UL 1975, Standard for Fire Tests for Foamed Plastic Used for Decorative Purposes.

(g) Cardboard, honeycombed paper, and other combustible materials having a maximum heat release rate for any single fuel package of 150 kW where tested in accordance with UL 1975, Standard for Fire Tests for Foamed Plastic Used for Decorative Purposes.

8-7.5.5.3 Curtains, drapes, and decorations shall comply with the applicable portions of 31-1.4.

8-7.5.6 Accurate and decorative material including, but not limited to, cotton, hay, paper, straw, moss, split bamboo, and wood chips shall be flame-retardant treated to the satisfaction of the authority having jurisdiction. Materials that cannot be treated for flame retardancy shall not be used. Foamed plastics and materials containing foamed plastics used as decorative objects such as, but not limited to, mannequins, murals, and signs shall have a maximum heat release rate for any single fuel package of 150 kW where tested in accordance with UL 1975, Standard for Fire Tests for Foamed Plastic Used for Decorative Purposes.

Exception: Where the aggregate area of such materials is less than 10 percent of the individual floor or wall area, such materials shall be permitted to be used subject to the approval of the authority having jurisdiction.

8-7.5.7 The following shall be protected by automatic extinguishing systems:

(a) Single-level exhibit booths greater than 500 sq ft (27.9 sq m) and equipped with a ceiling.

(b) Throughout each level of multilevel exhibit booths, including the uppermost level if the uppermost level is covered with a ceiling.

(c) A single exhibit or group of exhibits with ceilings that do not require sprinkler protection shall be separated by a minimum of 10 ft (3 m) where the aggregate ceiling exceeds 300 sq ft (27.9 sq m).

The water supply and piping for the sprinkler system shall be permitted to be of approved temporary means taken from an existing domestic water supply, an existing standpipe system, or an existing sprinkler system.

Exception No. 1: Ceilings that are constructed of open grate design or listed dropout ceilings in accordance with NFPA 15, Standard for the Installation of Sprinkler Systems, shall not be considered ceilings within the context of this section.

Exception No. 2: Vehicles, boats, and similar exhibited products having over 100 sq ft (9.2 sq m) of roofed area shall be provided with smoke detectors acceptable to the authority having jurisdiction.

Exception No. 3: Where fire protection of multilevel exhibit booths is consistent with the criteria developed through a life safety evaluation of the exhibition hall in accordance with 8-4.5, subject to approval of the authority having jurisdiction.

8-7.5.8 Open flame devices within exhibit booths shall comply with 8-7.2.

8-7.5.9 Cooking and food warming devices in exhibit booths shall comply with 8-7.1 and the following:

(a) Gas-fired devices.

(b) Natural gas-fired devices shall be installed in accordance with 7-1.1.

Exception to (a) (1): Compressed natural gas shall be permitted to be used where permitted by the authority having jurisdiction.

(2) The use of LP-Gas cylinders shall be prohibited.

Exception to (a) (3): Nonrefillable cylinders shall be permitted to be used where permitted by the authority having jurisdiction.

(b) Devices shall be isolated from the public by at least 4 ft (1.2 m) or be a barrier between the device and the public.

(c) Multi-well cooking equipment using combustible oils or solids shall comply with 7-2.5.

(d) Single-well cooking equipment using combustible oils or solids shall:

(1) Have lids available for immediate use.

(2) Be limited to 288 sq in. (0.19 sq m) of cooking surface.

(3) Be placed on noncombustible surface materials.

(4) Be separated from each other by a minimum horizontal distance of 2 ft (0.6 m).

Exception to (d) (4): Multiple single-well cooking equipment where the aggregate cooking surface area does not exceed 288 sq in. (0.19 sq m).

(5) Be kept a minimum horizontal distance of 2 ft (0.6 m) from any combustible material.

(e) A 20-lB fire extinguisher shall be provided within the booth for each device, or an approved automatic extinguishing system shall be provided. (See 7-4.1.)

8-7.5.10 Combustible materials within exhibit booths shall be limited to a one-day supply. Storage of combustible materials behind the booth shall be prohibited. (See 6-7.4.6 and 8-6.3.2.)

8-7.5.11 Plans for the exhibition, in an acceptable form, shall be submitted to the authority having jurisdiction for approval prior to the move-in of any exhibit. The plan shall show all details of the proposed exposition. No exhibit shall occupy any exhibition facility without approval by the authority having jurisdiction.

8-7.5.4 Vehicles. Vehicles on display within an exhibition facility shall comply with the following:

(a) All fuel tank openings shall be locked and sealed in an approved manner to prevent the escape of vapors. Fuel tanks shall not be more than one-half full or contain more than 10 gal (37.9 L) of fuel, whichever is less.

(b) At least one battery cable shall be removed from the batteries used to start the vehicle engine. The disconnected battery cable shall then be taped.

(c) Batteries used to power auxiliary equipment shall be permitted to be kept in service.

(d) Fueling or refueling of vehicles shall be prohibited.

(e) Vehicles shall not be moved during show hours.

8-7.5.5 Compressed flammable gases; flammable or combustible liquids; hazardous chemicals or materials; and Class H or greater laser, blasting agents, and explosives shall be prohibited from exhibit halls.

Exception: The authority having jurisdiction shall be permitted to allow the limited use of any of the above items under special circumstances.

8-7.5.6 Alternatives. (See Section 1-5.1.)

CHAPTER 9 EXISTING ASSEMBLY OCCUPANCIES

SECTION 9.1 GENERAL REQUIREMENTS

9.1.1 Application.

9.1.1.1 The requirements of this chapter apply to existing buildings or portions thereof currently occupied as assembly occupancies. (See 9.1.5 for definition of assembly occupancy.) (See also 8-1.1.)
shall be located, separated, or protected to avoid any undue danger to the occupants of the other occupancy from a fire originating in the assembly occupancy, or smoke therefrom.

9-1.2.2 Occupancy areas of less concentrated use, such as ballrooms in hotels, restaurants in other occupancies, and similar amusements where the occupancies are not in the open air, shall be permitted to use exits common to the assembly occupancy and other parts of the building. Exits thereto from the assembly occupancy and exits therefrom are separated from the assembly occupancy by construction having a fire resistance rating of at least 1 hour.

9-1.2.3 Assembly occupancies in buildings of other occupancy shall be permitted to use exits common to the assembly occupancy and the other occupancy provided the assembly area and the other occupancy contain separately each have exits sufficient to meet the requirements of this Code.

9-1.2.4 Exits shall be sufficient for simultaneous occupancy of both the assembly occupancy and other parts of the building. Where the authority having jurisdiction determines that the conditions are such that simultaneous occupancy will not occur.

9-1.2.5 Combined Assembly and Residential Occupancies.

9-1.2.5.1 No dwelling unit of a residential occupancy shall have its sole means of egress pass through any assembly occupancy in the same building.

9-1.2.5.2 No multiple-dwelling unit of a residential occupancy shall be located above an assembly occupancy.

9-1.2.5.3 A building with not more than two dwelling units of residential occupancy above an assembly occupancy shall be permitted provided the assembly occupancy is protected by an automatic fire detection system in accordance with Section 7-5.6. Exception No. 1: Where the authority having jurisdiction determines that the conditions are such that simultaneous occupancy will not occur.

9-1.2.5.4 Aisle Accessway. That initial portion of an exit access that leads to an aisle.

9-1.2.5.5 Assembly Occupancy. Occupancies that include, but are not limited to, all buildings or portions of buildings used for gatherings of 50 or more persons for such purpose as deliberation, worship, entertainment, dining, amusement, or awaiting transportation.

9-1.2.5.6 Exhibitor. An individual or entity engaged in the display of the products or services offered.

9-1.2.5.7 Exhibits. A space or portable structure used for the display of products or services.

9-1.2.5.8 Exposition. An event in which the display of products or services is organized to bring together the provider and user of the products or services.

9-1.2.5.9 Exposition Facility. A convention center, hotel, or other building at which exposition events are held.

9-1.2.5.10 Festive Seating. * That form of audience/spectator accommodation in which no seating, other than a floor or ground surface, is provided for the audience/spectators gathered to observe some performance;

9-1.2.5.11 Floor Time. The time during which there is crowd flow past a point in the means of egress system; flow time is a component of total evacuation time.

9-1.2.5.12 A raised floor area above a stage from which the movement of scenery and operation of other stage effects are controlled.

9-1.2.5.13 Gridiron. The structural framing over a stage supporting equipment for hanging or flying scenery and other stage effects.

9-1.2.5.14 Life Safety Evaluation. * A written review dealing with the adequacy of life safety features, such as fire exits, collapse, crowd behavior, and other related safety considerations.

9-1.2.5.15 Pinrail. A rail on or above a stage through which belaying pins are inserted and to which lines are fastened.

9-1.2.5.16 Platform. * The area within a building used for the presentation of music, plays, or other entertainment; the head tables for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round; and for similar purposes where there are no overhead drops, pieces of scenery, or stage effects other than lighting and a screening valance.

Platform, Temporary. A platform erected within an area for not more than 30 days.

Proscenium Wall. The wall that separates the stage from the auditorium or house.

Smoke-Protected Assembly Seating. (See 9-4.2.)

Special Amusement Building. Any building that is temporary, permanent, or mobile that contains a device or system that conveys passengers or provides a walkway along, around, or over a course in any direction as a form of amusement arranged so that the egress path is not readily apparent due to stairs, or audio distractions or an intentionally confined egress path, or is not readily available due to the mode of conveyance through the building or structure. Included are amusements such as a "haunted house," a "roller coaster" type ride within a building; a "merry-go-round" within a building, a "submarine" ride, and similar amusements where the occupants are not in the open air.

Stage. An area within a building used for the purpose of entertainment and utilizing drops or scenery or other stage effects, which shall be classified as one of the following:

(a) Stage, Legitimate. A stage wherein scenery is retractable mechanically, either horizontally or vertically, or suspended overhead.
(b) Stage, Regular. A stage wherein scenery is not retractable. A valance or light trough, the main curtain, and a single backdrop can be retractable without the stage being considered a legitimate stage.
(c) Stage, Thrust. A platform extending beyond the proscenium arch and into the audience.

9-1.4 Classification of Occupancy. (See 4-1.2.)

9-1.4.1 Subclassification of Assembly Occupancies. Each assembly occupancy shall be subclassified according to its occupant load, as follows: Class A, occupant load greater than 1,000 persons; Class B, occupant load greater than 500 but not greater than 1,000 persons; Class C, occupant load of 50 or more but not greater than 300 persons. The occupant load of a stage area that is part of an assembly occupancy shall be included in determining the subclassification.

9-1.5 Classification of Hazard of Contents. Contents of assembly occupancies shall be classified in accordance with the provisions of Section 4-2.

9-1.6 Minimum Construction Requirements. (See 6-2.1.) The location of an assembly occupancy shall be limited as shown in Table 9-1.6.1.

9-1.7 Occupant Load. Exception No. 1: Larger occupant loads as permitted by 9-1.7.2.

Exception No. 2: The authority having jurisdiction shall be permitted to establish the occupant load as the number of persons for which the existing means of egress is adequate, providing that measures are established to prevent occupancy by a greater number of persons.

9-1.7.2 The occupant load permitted in a building or portion thereof shall be permitted to be increased above that specified in 9-1.7.1 if the necessary exits are provided. To increase the occupant load, a diagram indicating placement of equipment, aisles, exits, and seating shall be provided to and approved by the authority having jurisdiction prior to any increase in occupant load. In areas not larger than 10,000 sq ft (900 sq m), the occupant load shall not exceed one person per 5 sq ft (0.46 sq m); in areas greater than 10,000 sq ft (900 sq m), the occupant load shall not exceed one person per 7 sq ft (0.65 sq m).
9-2.2.2.2 Class C assembly occupancies in covered malls (see 25-4.4.1 Exception) shall be permitted to have horizontal or vertical security grilles or doors complying with Exception No. 4 to 5-2.1.4.1 on the main entrance/exit.

9-2.2.2.3 Panic Hardware or Fire Exit Hardware. Any door in a required means of egress from an area having an occupant load of 100 or more persons shall be permitted to be provided with a latch or lock only if it is panic hardware or fire exit hardware complying with 5-2.1.7.

Exception No. 1: In assembly occupancies having an occupant load not greater than 600, where the main exit consists of a single door or single pair of doors, locking devices complying with Exception No. 2 to 5-2.1.5.1 shall be permitted to be used on the main exit. Any latching device on this door (s) shall be released by panic hardware. Exception No. 2: Delayed egress locks as permitted in 9-2.2.4. Exception No. 3: Access-controlled egress doors as permitted in 9-2.2.5.

9-2.2.2.4 Delayed egress locks complying with 5-2.1.6.1 shall be permitted on doors other than main entrance/exit doors. Doors shall not be locked from the egress side when the assembly occupancy is occupied. (See 5-2.1.13.)

9-2.2.2.5 Doors in the means of egress shall be permitted to be equipped with an approved access control system complying with 5-2.1.6.2. Doors shall not be locked from the egress side when the assembly occupancy is occupied. (See 5-2.1.13.)

9-2.2.2.6 Revolving doors complying with the requirements of 5-2.1.10 for new construction shall be permitted.

9-2.2.2.7 Turnstiles. No turnstiles or other devices that restrict the movement of persons shall be installed in any assembly occupancy in such a manner as to interfere in any way with required means of egress facilities.

9-2.2.3 Stairs.

9-2.2.3.1 Stairs complying with 5-2.2 shall be permitted.

Exception No. 1*: Stairs serving seating that is designed to be repositioned shall not be required to comply with 5-2.2.3.1.

Exception No. 2: Stages and platforms as permitted by 9-4.5.

9-2.2.3.2 Catwalk, Gallery and Gridiron Stairs.

9-2.2.3.2.1 Noncombustible grating stair treads and landing floors shall be permitted in means of egress from lighting and access catwalks, galleries, and gridirons.

9-2.2.3.2.2 Spiral stairs complying with 5-2.2.7 shall be permitted in means of egress from lighting and access catwalks, galleries, and gridirons.

9-2.2.3.2.3 A second means of egress shall not be required from lighting and access catwalks, galleries, and gridirons where a means of escape to a floor or a roof is provided. Ladders alternating tread devices, or spiral stairs shall be permitted in such means of escape.

9-2.2.3.2.4 Exit access stairs from lighting and access catwalks, galleries, and gridirons shall not be required to be enclosed.

9-2.2.3.2.5 A second means of egress shall not be required from lighting and access catwalks, galleries, and gridirons where a means of escape to a floor or a roof is provided. Ladders alternating tread devices, or spiral stairs shall be permitted in such means of escape.

9-2.2.3.2.6 Exit access stairs from lighting and access catwalks, galleries, and gridirons shall not be required to be enclosed.

9-2.2.4 Smokeproof Enclosures. Smokeproof enclosures complying with 5-2.3 shall be permitted.

9-2.2.5 Horizontal Exits. Horizontal exits complying with 5-2.4 shall be permitted.

9-2.2.6 Ramps. Ramps complying with 5-2.5 shall be permitted.

9-2.2.7 Exit Passageways. Exit passageways complying with 5-2.6 shall be permitted.

9-2.2.8 Escalators and Moving Walks. Escalators and moving walks complying with 5-2.7 shall be permitted.

9-2.2.9 Fire Escape Stairs. Fire escape stairs complying with 5-2.8 shall be permitted.

9-2.2.10 Areas of Refuge. Areas of refuge complying with 5-2.12 shall be permitted.

9-2.3 Capacity of Means of Egress.

9-2.3.1 The capacity of means of egress shall be in accordance with Section 5-3 or, for means of egress serving theater-type seating or similar seating arranged in rows, in accordance with Table 9-2.3.2(a) or, for buildings providing smoke-protected assembly seating and for which an approved life safety evaluation in accordance with 9-4.5 is conducted, in accordance with Table 9-2.3.2(b). For Table 9-2.3.2(b), the number of seats specified must be within a single assembly space and interpolation shall be permitted between the specific values shown. For both tables, the minimum clear widths shown shall be modified in accordance with all of the following:

(a) If risers exceed 7 in. (178 cm) in height, multiply the stair width in the tables by factor A, where

\[
A = 1 + \left(\frac{\text{riser height} - 7\text{ in.}}{5}\right)
\]

(b) Stairs not having a handrail within a 30-in. (76-cm) horizontal distance shall be 25 percent wider than otherwise calculated; i.e., multiply by factor B = 1.25.

(c) Ramps steeper than 1 in 10 slope where used in ascent shall have their width increased by 10 percent; i.e., multiply by factor C = 1.10.

9-1.7.3 Waiting Spaces. In theaters and other assembly occupancies where persons are admitted to the building at times when seats are not available to them, or when the permitted occupant load has been reached based on 9-1.7.1 or 9-1.7.2 and persons are allowed to wait in a lobby or similar space until seats or space is available, such waiting spaces on the basis of one person for each 3 sq ft (0.28 sq m) shall be permitted for such waiting spaces on the basis of one person for each 3 sq ft (0.28 sq m) of waiting space area. Such exits shall be in addition to the exits specified for the main auditorium area and shall conform in construction and arrangement to the general rules for exits given in this chapter.

9-1.7.4 Where the occupant load of an assembly occupancy is greater than 6,000, a life safety evaluation shall be performed in accordance with NFPA 101 and this section.

9-1.7.5 Where every part of the structural frame of roofs in Type I or Type II construction is 20 ft (6.1 m) or more above the floor immediately below, omission of all fire protection of the structural members shall be permitted, including protection of trusses, roof framing, and decking.

N.P.: Not permitted

LED: Level of Exit Discharge

NOTE: For the purpose of this table, a mezzanine is not counted as a level.
Table 9-2.3.2 Capacity Factors

<table>
<thead>
<tr>
<th>No. of Seats</th>
<th>Flow Time (sec)</th>
<th>Inch of Clear Width Per Seat Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlimited</td>
<td>200</td>
<td>0.300 AB 0.200 C</td>
</tr>
</tbody>
</table>

(1 in. = 2.54 cm)

9-2.3.3 Main Entrance/Exit. Every assembly occupancy shall be provided with a main entrance/exit. The main entrance/exit shall be of sufficient width to accommodate one half of the total occupant load, and shall be at the level of exit discharge or shall connect to a stairway or ramp leading to a street. Where the main entrance/exit from an assembly occupancy is through a lobby or foyer, the aggregate capacity of all exits from the lobby or foyer shall be permitted to provide the required capacity of the main entrance/exit regardless of whether all such exits serve as entrances to the building.

Exception No. 1: A bowling establishment shall have a main entrance/exit of sufficient capacity to accommodate 50 percent of the total occupant load without regard to the number of aisles that it serves.

Exception No. 2*: In assembly occupancies where there is no well-defined main entrance/exit, exits shall be permitted to be distributed around the perimeter of the building provided the total exit width furnishes a minimum of 100 percent of the width needed to accommodate the permitted occupant load.

9-2.3.4 Other Exits. Each level of an assembly occupancy shall have access to the main entrance/exit and shall be provided with additional exits of sufficient width to accommodate a minimum of one half of the total occupant load served by that level. Such exits shall discharge in accordance with 9-2.7. Such exits shall be located as far apart as practicable and as far from the main entrance/exit as practicable. Such exits shall be accessible from a cross aisle or a side aisle. (See 9-2.3.5.)

Exception: In assembly occupancies where there is no well-defined main entrance/exit, exits shall be permitted to be distributed around the perimeter of the building, provided the total exit width furnishes a minimum of 100 percent of the width needed to accommodate the permitted occupant load.

9-2.4.1 Every Class A assembly occupancy shall have at least four separate means of egress as remotely located from each other as practicable.

Exception: Fenced outdoor assembly occupancies in accordance with 9-2.4.4.

9-2.4.2 Every Class B assembly occupancy shall have at least two separate means of egress as remotely located from each other as practicable and, if of an occupant load greater than 600, at least three separate means of egress.

Exception: Fenced outdoor assembly occupancies in accordance with 9-2.4.4.

9-2.4.3 Every Class C assembly occupancy shall have at least two means of egress consisting of separate exits or doors leading to a corridor or other spaces that provide access to two separate and independent exits located in different directions.

Exception: Fenced outdoor assembly occupancies in accordance with 9-2.4.4.

9-2.4.4 A fenced outdoor assembly occupancy shall have at least two widely separated means of egress from the enclosure. If more than 6,000 persons are to be served by such means of egress, there shall be at least three means of egress; if more than 9,000 persons are to be served, there shall be at least four means of egress.

9-2.4.5 Balconies or mezzanines having an occupant load not greater than 50 shall be permitted to be served by a single means of egress and such means of egress shall be permitted to lead to the floor below.

9-2.4.6 Balconies or mezzanines having an occupant load greater than 50 but not greater than 100 shall have at least two remote means of egress, but both such means of egress shall be permitted to lead to the floor below.

9-2.4.7 Balconies or mezzanines having an occupant load greater than 100 shall have means of egress provided as for a floor.

9-2.5 Arrangement of Means of Egress. (See also Section 5-5.)

9-2.5.1 Each exit shall be located remotely from each other and shall be arranged to minimize the possibility that they might be blocked by any emergency.

9-2.5.2 Means of egress shall not be permitted through kitchens, storerooms, restrooms, closets, or hazardous areas as described in 9-3.2.

9-2.5.3 (Reserved.)

9-2.5.4 (Reserved.)

9-2.5.5 General Requirements for Access and Egress Routes within Assembly Areas.

9-2.5.5.1 Festival seating shall be prohibited within a building. (See Section 3-2.)

Exception No. 1: Festival seating shall be permitted in Class B and Class C assembly occupancies.

Exception No. 2: Festival seating shall be permitted in Class A assembly occupancies with an approved life safety evaluation. (See 9-4.1.)

9-2.5.5.2 Access and egress routes shall be maintained so that any individual is able to move without undue hindrance, on personal initiative and at any time, from an occupied position to exits.

9-2.5.5.3 Access and egress routes shall be maintained so that crow management, security, and emergency medical personnel shall be able to move without undue hindrance at any time to any individual in need.

9-2.5.5.4 The width of aisle accesses and aisles shall provide sufficient egress capacity for the number of persons accommodated by the catchment area served by the aisle accessway or aisle in accordance with 9-2.3.1. Where aisle accessways or aisles converge to form a single path of egress travel, the required egress capacity of that path shall not be less than the combined required capacity of the converging aisle accessways and aisles.

9-2.5.5.5 Those portions of aisle access and aisles where egress is possible in either of two directions shall be uniform in required width.

Exception: Those portions of aisle access where the required width, not including the seat space described by 9-2.5.8.2, does not exceed 12 in. (30.5 cm).

9-2.5.5.6 In the case of side boundaries other than nonfixed seating at tables, for aisle accesses or aisles, the clear width shall be measured to boundary elements such as walls, guardrails, handrails, edges of seating, tables, and side edges of treads, with the measurement made horizontally to the vertical projection of the elements resulting in the smallest width measured perpendicularly to the line of travel.

9-2.5.5.7 Aisle Accesses.

9-2.5.6.1 To determine the required clear width of aisle accesses between rows of seating, horizontal measurements shall be made (between vertical planes) from the back of one seat to the front of the most forward projection of the seat immediately behind it. Where the entire row consists of automatic or self-rising seats that comply with ASTM F851, Test Method for Self-Rising Seat Mechanisms, the measurement shall be permitted to be made with the seats in the retracted position.

9-2.5.6.2 The aisle accessway between rows of seating shall have a clear width of not less than 12 in. (30.5 cm), and this minimum shall be increased as a function of row length in accordance with 9-2.5.6.3 and 9-2.5.6.4.

Exception: If used by not more than four persons, there shall be no minimum clear width requirement for the portion of the aisle accessway having a length not exceeding 6 ft (1.8 m) measured from the center of the seat furthest from the aisle.

9-2.5.6.3 Rows of seating served by aisles or doorways at both ends shall have no more than 100 seats per row. The 12-in. (30.5-cm) minimum clear width of aisle accessway between such rows shall be increased by 0.3 in. (0.8 cm) for every seat over a total of 14, but need not exceed 22 in. (55.9 cm).

Exception: Smoke protected assembly seating as permitted by 9-4.2.9.

9-2.5.6.4 Rows of seating served by an aisle or doorway at one end only shall have a path of travel not exceeding 30 ft (9.1 m) in length from any seat to an aisle. The 12-in. (30.5-cm) minimum clear width of aisle accessway between such rows shall be increased by 0.5 in. (1.3 cm) for every seat over a total of seven.

Exception: Smoke protected assembly seating as permitted by 9-4.2.6 and 9-4.2.7.

9-2.5.6.5 Rows of seating utilizing tablet-arm chairs shall be permitted only if the clear width of side access complies with the requirements of 9-2.5.7 where the tablet is in the usable position.

Exception: Tablet arms shall be permitted to be measured in the stored position where the tablet arm automatically returns to the stored position when raised manually to a vertical position in one motion and falls to the stored position by force of gravity.

9-2.5.6.7 Aisles.

9-2.5.7.1 Dead-end aisles shall not exceed 20 ft (6.1 m) in length.
Exception No. 1: A longer dead-end aisle shall be permitted where seats served by the dead-end aisle are not more than 24 seats from another aisle, measured along a row of seats having a minimum clear width of 12 in. (30.5 cm) plus 0.6 in. (1.5 cm) for each additional seat over a total of seven in the row.

Exception No. 2: A 16-row dead-end aisle shall be permitted in folding and telescopic seating.

9-2.5.7.4 Aisle Stair Treads.
(a) There shall be no variation exceeding 3/16 in. (0.5 cm) in the depth of adjacent treads.
(b) Treads shall be a minimum of 11 in. (27.9 cm).
(c) All treads shall extend the full width of the aisle.

9-2.5.7.5 Aisle Stair Risers.
(a) Riser heights shall be a minimum of 4 in. (10.2 cm).
(b) Riser heights shall not exceed 8 in. (20.3 cm).

Exception No. 1 to (b): Where the gradient of an aisle is steeper than 8 in. (20.3 cm) in rise in 11 in. (27.9 cm) of run (to maintain necessary sight lines in the adjoining seating area), the riser height shall be permitted to exceed 8 in. (20.3 cm) but shall not exceed 11 in. (27.9 cm).

Exception No. 2 to (b): Folding and telescopic seating in accordance with 9-2.5.7.2 shall be permitted to exceed 3/16 in. (0.5 cm) between adjacent risers.

(c) Riser heights shall be designed to be uniform in each aisle, and the construction-caused nonuniformities shall not exceed 3/16 in. (0.5 cm) between adjacent risers.

Exception to (c): Riser height shall be permitted to be nonuniform only for the purpose of accommodating necessary changes in gradient to maintain necessary sight lines within a seating area and shall be permitted to exceed 3/16 in. (0.5 cm) in any flight. Where nonuniformities exceed 3/16 in. (0.5 cm) between adjacent risers, the exact location of such nonuniformities shall be indicated by a distinctive marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform risers.

9-2.5.7.6* Aisle Handrails. Ramped aisles having a gradient exceeding 1 in 12 and aisle stairs shall be provided with handrails at one side or along the centerline. Where there is seating on both sides of the aisle, the handrails shall be discontinuous with gaps or breaks at intervals not exceeding five rows to facilitate access to seating and to permit crossing from one side of the aisle to the other. These gaps or breaks shall have a clear width of not less than 12 in. (30.5 cm) and not greater than 36 in. (91 cm) measured horizontally, and the handrail shall have rounded terminations or bends. Where handrails are provided in the middle of a flight of stairs, there shall be an additional intermediate rail located approximately 12 in. (30 cm) below the main handrail.

Exception No. 1: Handrails shall not be required for ramped aisles having a gradient not steeper than 1 in 8 and having seating on both sides.

Exception No. 2: The requirement for a handrail is satisfied by the use of a guard providing a rail that complies with the graspability requirements for handrails and is located at a consistent height between 34 in. (86 cm) and 42 in. (107 cm) measured vertically from the top of the rail to the leading edge (nosing) of stair treads or to the adjacent walking surface in the case of a ramp.

Exception No. 3: Handrails shall not be required where risers do not exceed 7 in. (17.8 cm) in height.

9-2.5.7.7* Aisle Marking. A contrasting marking stripe shall be provided on each tread at the nosing or leading edge such that the location of such tread is readily apparent, particularly when viewed in descent. Such stripes shall be at least 1 in. (2.5 cm) wide and shall not exceed 2 in. (5 cm) in width.

Exception: The marking stripe shall not be required where tread surfaces and environmental conditions under all conditions of use are such that the location of each tread is readily apparent, particularly when viewed in descent.
special lighting or for access mad use of other special equipment.

the aisle.

in the performance area of stages.

cross aisles shall be provided with railings not less than 26 in. (66 cm) high for the full width of the aisle and shall be not less than 42 cm) above the adjacent floor.

immediately in front of a row of seats shall be not less than 26 in. (66 cm) above the adjacent floor or shall have substantial

motions of this section, the protection shall be permitted to b6 in accordance with 7-7.1.2.

9-3.3.3 Interior Finish.

9-3.3.5.1 The interior finish requirements of this section shall be in accordance with Section 9-3.3.5.2. Interior finish in all corridors and lobbies shall be Class A or Class B and, in enclosed stairways, Class A.

9-3.3.5.3 Interior finish in general assembly areas of Class A or Class B assembly occupancies shall be Class A or Class B. In Class C assembly occupancies, interior finish shall be Class A, Class B, or Class C.

Exception: In any assembly occupancy, exposed portions of structural members containing sprinklers shall be in accordance with requirements for Tier IV(2HH) construction shall be permitted.

9-3.3.5.4 Screens on which pictures are projected shall comply with requirements of Class A or Class B interior finish.

9-3.4 Detection, Alarm, and Communications Systems.

9-3.4.1 General. Class A and Class B assembly occupancies and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system in accordance with this section.

Exception No. 1: Assembly occupancies that are a part of a mixed occupancy (see 4-1.11) shall be permitted to be served by a common fire alarm system provided the individual requirements of each occupancy are met.

Exception No. 2: Assembly occupancies where, in the judgment of the authority having jurisdiction, adequate alternative provisions exist or are provided for the discovery of a fire condition and for alerting the occupants promptly.

4.2 Initiation.

9-3.4.2.1 Initiation of the required fire alarm system shall be by manual means in accordance with 7-6.2.1(a), which shall be provided with an emergency power source. The initiating device shall be capable of transmitting an alarm to a receiving station, located within the building, that is constantly attended when the assembly occupancy is occupied.

Exception No. 1: Initiation by means of an approved, automatic fire detection system in accordance with 7-6.2.1(b) that provides fire detection throughout the building.

Exception No. 2: Initiation by means of an approved, automatic sprinkler system in accordance with 7-6.2.1(c) that provides fire detection and protection throughout the building.

9-3.4.2.2 In all Class A and in all Class B assembly occupancies, automatic detection shall be provided in all hazardous areas that are not normally occupied.

Exception: Areas that are protected throughout by an approved, automatic sprinkler system in accordance with 7-7.1.

9-3.4.3 Notification.

9-3.4.3.1 The required fire alarm system shall sound an audible alarm in a constantly attended receiving station within the building when occupied for purposes of initiating emergency action. A presignal system in accordance with Exception No. 1 to 7-6.3.2 shall be permitted. Positive alarm sequence in accordance with Exception No. 2 to 7-6.3.2 shall be permitted.

9-3.4.3.2 Occupant notification shall be by means of voice announcements, either live or prerecorded, initiated by the person in the constantly attended location.

9-3.4.3.3 The announcement shall be made via an approved voice communications or public address system that is audible above the ambient noise level of the assembly occupancy.

9-3.4.3.4 Where the authority having jurisdiction determines that it is impractical to have a constantly attended location, a fire alarm system in accordance with Section 7-6 that is initiated by manual stations in accordance with 7-6.2.1(a) or other approved means of initiation and that automatically provides prerecorded evacuation instructions in accordance with 7-6.3.8 shall be used.

9-3.5 Extinguishment Requirements. (See also 9-1.6, 9-2.6, and 9-3.2.)

9-3.5.1 Fire Suppression Systems. Any assembly occupancy used or capable of being used for exhibition or display purposes shall be protected throughout by an approved, automatic sprinkler system in accordance with Section 7-7 where the exhibition or display area exceeds 15,000 sq ft (1,400 sq m).

9-3.6 Corridors. (No requirement.)

SECTION 9-4 SPECIAL PROVISIONS

9-4.1 Life Safety Evaluation.

9-4.1.1 Where a life safety evaluation is required by other provisions of the Code, it shall be done by persons acceptable to the authority having jurisdiction. The life safety evaluation shall include a written assessment of safety measures for conditions listed in 9-4.1.2. The life safety evaluation shall be approved annually by the authority having jurisdiction and shall be updated for special or unusual conditions.

9-4.1.2 Life safety evaluations shall include an assessment of the following conditions and the related appropriate safety measures:

(a) Nature of the events and the participants and attendees,

(b) Access and egress movement including crowd density, problems,
accommodated in the facility.

9-4.1.2 Life safety evaluations shall include assessments of both building systems and management features upon which reliance is placed for the safety of facility occupants.

9-4.2 Smokey Protected Assembly Seating.

9-4.2.1 For smoke-protected assembly seating conforming with the requirements of 9-4.2.2, the travel distance from each seat to the nearest entrance to an egress vomitory portal or egress concourse shall not exceed 200 ft (60 m). The travel distance from the entrance to vomitory portal or from egress concourse to an approved egress stair, ramp, or walk at the building exterior shall not exceed 400 ft (122 m). In outdoor assembly seating facilities of Type I or Type II construction, where all portions of the means of egress are essentially open to the outside, the distance of travel to an approved egress stair, ramp, or walk at the building exterior shall not exceed 400 ft (122 m).

Exception: In outdoor assembly seating facilities providing smoke-protected assembly seating conforming with the requirements of 9-4.2 and where all portions of the means of egress are essentially open to the outside, the distance of travel shall not exceed 200 ft (60 m).

9-4.2.2 Fire Protection Requirements. To be considered smoke-protected, an assembly seating facility shall comply with the following:

(a) All enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be provided with approved, automatic sprinkler system in accordance with Section 3-7.7.

Exception to (a): The floor area used for the contest, performance, or entertainment, provided the roof construction is more than 50 ft (15 m) above the floor level and use is restricted to low fire hazard uses.

(b) All means of egress serving a smoke-protected assembly seating area shall be provided with smoke-actuated ventilation facilities or manual ventilation designed to maintain in the level of smoke at least 6 ft (1.8 m) above the floor of means of egress.

9-4.2.3 Life Safety Evaluation. For facilities to utilize the provisions of smoke-protected assembly seating, a life safety evaluation shall be done in accordance with 9-4.1.

9-4.2.4 For Table 9-4.2.4 the number of seats specified must be within a single assembly space, and interpolation shall be permitted between the specific values shown. The minimum clear widths shown shall be modified in accordance with all of the following:

(a) If risers exceed 7 in. (17.8 cm) in height, multiply the stair width in the tables by factor A, where

\[ A = 1 + \left[ \frac{\text{riser height} - 7}{5} \right] \]

(b) Stairs not having a handrail within a 30-in. (76-cm) horizontal distance shall be 25 percent wider than otherwise calculated; i.e., multiply by factor B = 1.25.

(c) Ramps steeper than 1 in 10 slope where used in ascent shall have their width increased by 10 percent; i.e., multiply by factor C = 1.10.

9-4.2.5 With smoke-protected assembly seating conforming to the requirements of 9-4.2, for rows of seats served by aisles or doorways at both ends, there shall be no more than 100 seats per row and the minimum clear width of 12 in. (30.5 cm) for aisle accessways shall be increased by 0.3 in. (0.8 cm) for every additional seat beyond the number stipulated in Table 9-4.2.5, but the minimum clear width need not exceed 22 in. (55.9 cm).

9-4.2.6 With smoke-protected assembly seating conforming with the requirements of 9-4.2, for rows of seats served by an aisle or doorway at one end only, the aisle accessway minimum clear width of 12 in. (30.5 cm) shall be increased by 0.6 in. (1.5 cm) for every additional seat beyond the number stipulated in Table 9-4.2.5, but the minimum clear width need not exceed 22 in. (55.9 cm).

9-4.2.7 Smoke-protected assembly seating conforming with the requirements of 9-4.2 shall be permitted to have a common path of travel of 50 ft (15 m) from any seat to a point where a person has a choice of two directions of egress travel.

9-4.2.8 Aisle Termination. For smoke-protected assembly seating conforming to the requirements of 9-4.2, the dead ends in aisle stairs shall not exceed a distance of 21 rows.

Exception: A longer dead-end aisle shall be permitted for smoke-protected assembly seating where seats served by the dead-end aisle are no more than 40 seats from another aisle, measured along a row of seats having an aisle accessway with a minimum clear width of 12 in. (30.5 cm) plus 0.3 in. (0.8 cm) for each additional seat above seven in the row.

9-4.3 Windowless or Underground Buildings. Windowless or underground buildings shall comply with this chapter and Section 30-7.

9-4.4 High Rise Buildings. Existing high rise buildings that house assembly occupancies in high rise portions of the building shall have the highest level of the assembly occupancy and all levels below protected by an approved, supervised automatic sprinkler system in accordance with Section 3-7.7. (See also 9-1.6.)

9-4.5 Stages and Platforms. (See 9-1.3.)

9-4.5.1 Materials and Design. (Reserved.)

9-4.5.2 Platform Construction. (Reserved.)

9-4.5.3 Stage Construction. (Reserved.)

9-4.5.4 Accessory Rooms. (Reserved.)

9-4.5.5 Ventilators. Regular stages greater than 1,000 sq ft (93 sq m) in area and legitimate stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire. Ventilation shall be by one or a combination of the following methods:

(a) Smoke Control. A means complying with Section 3-7.3 shall be provided to maintain the smoke level not less than 6 ft (183 cm) above the highest level of assembly seating or above the top of the proscenium opening where a proscenium wall and opening protection is provided. The system shall be activated independently by each of the following: (1) activation of the sprinkler system in the stage area, (2) activation of smoke detectors over the stage area, and (3) by manually operated switch at an approved location. The emergency ventilation system shall be supplied by both normal and standby power. The fan(s) power wiring and ducts shall be located and properly protected to ensure a minimum 20 minutes of operation in the event of activation.

(b) Roof Vents. Two or more vents shall be located near the center of and above the highest part of the stage area. They shall be raised above the roof and shall provide a net-free vent area equal to 5 percent of the stage area. Vents shall be constructed to open automatically by approved heat-activated devices. Supplemental means shall be provided for manual operation and periodic testing of the ventilator from the stage floor. Vents shall be labeled.

9-4.2.4 Capacity Factors

<table>
<thead>
<tr>
<th>No. of Seats</th>
<th>Nominal Flow Time (sec)</th>
<th>Inch of Clear Width Per Seat Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,000</td>
<td>200</td>
<td>0.300 AB 0.200 C</td>
</tr>
<tr>
<td>5,000</td>
<td>200</td>
<td>0.200 AB 0.150 C</td>
</tr>
<tr>
<td>10,000</td>
<td>200</td>
<td>0.150 AB 0.100 C</td>
</tr>
<tr>
<td>15,000</td>
<td>200</td>
<td>0.106 AB 0.070 C</td>
</tr>
<tr>
<td>20,000</td>
<td>200</td>
<td>0.076 AB 0.056 C</td>
</tr>
<tr>
<td>&gt;=25,000</td>
<td>200</td>
<td>0.060 AB 0.044 C</td>
</tr>
</tbody>
</table>

(1 in. = 2.54 cm)
Except to (b): Existing vents not labeled shall be permitted to conform to the following requirements.

(1) Vents shall open by spring action or force of gravity sufficient to overcome the effects of neglect, rust, dirt, frost, snow, or expansion by heating of the frame. When employed to facilitate operation of manually controlled vents, the fusible links and operating cable shall hold each door closed against the minimum 30-psi (207 kPa) counter force shall be exerted on each door through its entire arc of travel and for a minimum of 115 degrees. A manual control shall be provided.

(2) Springs, when employed to actuate vent doors, shall be capable of maintaining full required tension. Springs shall not be stressed more than 50 percent of their rated capacity and shall not be located directly in the air stream nor exposed to the outside.

A fusible link shall be placed in each vent control system on the underside of the vent at or above the roofline or as approved by the building official and shall be located so as not to be affected by the operation of an automatic sprinkler system. Remote, manual, or electric controls shall provide for both opening and closing of the vent doors for periodic testing and shall be located at a point on stage designated by the authority having jurisdiction. Where remote control vents are electrical, power failure shall not affect its instant operation in the event of fire. Hand winches shall be permitted to be employed to facilitate operation of manually controlled vents.

(c) Other Means. Alternating cycles of removing smoke and combustion gases shall be permitted.

9-4.5.6 Proscenium Walls. (Reserved.)

9-4.5.7 Proscenium Curtain. The proscenium opening of every legitimate stage shall be provided with a curtain constructed and mounted so as to intercept hot gases, flames, and smoke and to prevent flame from a fire on the stage from becoming visible from the auditorium side for a 5-minute period when the curtain is of asbestos. Other materials shall be permitted if they have passed a 30-minute fire test in a small scale 3 ft x 3 ft (0.9 m x 0.9 m) furnace with the sample mounted in the horizontal plane at the top of the furnace and subjected to the standard temperature curve. The curtain shall be automatic-closing without the use of applied power.

All proscenium curtains shall be in the closed position except during performances, rehearsals, or similar activities.

Exception No. 1: In lieu of the protection required herein, all the following shall be provided:

(a) A noncombustible opaque fabric curtain shall be arranged so that it will close automatically, and

(b) An automatic, fixed waterspray deluge system shall be located on the auditorium side of the proscenium opening and shall be arranged so that the entire face of the curtain will be wetted. The system shall be activated by combination of rate-of-rise and fixed-temperature detectors located on the ceiling of the stage. Detectors shall be spaced in accordance with their listing. The water supply system shall be controlled by a deluge valve and shall be sufficient to keep the curtain completely wet for 30 minutes or until the valve is closed by fire department personnel, and

(c) The curtain shall be automatically operated in case of fire by a combination of rate-of-rise and fixed-temperature detectors that also activates the deluge spray system. Stage sprinklers and vents shall be automatically operated by fusible elements in case of fire, and

(d) Operation of the stage sprinkler system or spray deluge valve shall automatically activate the emergency ventilating system and close the curtain, and

(e) The curtain vents, and spray deluge system valve shall also be capable of manual operation.

Exception No. 2: Proscenium fire curtains or water curtains complying with 6-3.2.1.7.

9-4.5.8 Gridiron Galleries, and Pinrails. (Reserved.)

9-4.5.9 Catwalks. The minimum clear width of lighting and access catwalks and the means of egress from gridirons and catwalks shall be 22 in. (56 cm).

9-4.5.10 Fire Protection. Every stage shall be protected by an approved, automatic sprinkler system complying with Section 7.7. The protection shall be provided throughout the stage and in storerooms, workshops, permanent dressing rooms, and other areas of assembly or waiting of the audience. Close to and for

Exception No. 1: Sprinklers shall not be required for stages less than 1,000 sq ft (93 sq m) or less in area where curtains, scenery, or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs, and a single backdrop.

Exception No. 2: Sprinklers shall not be required under stage areas less than 4 ft (1.2 m) in clear height used exclusively for chair or table storage and lined on the inside with 5/8 in. (1.6 cm) Type X gypsum wallboard or the approved equivalent.

9-4.5.11 Flame- Retardant Requirements. Combustible scenery of cloth, film, vegetation (dry), and similar effects shall meet the requirements of NFPA 701, Standard Methods of Fire Tests for Flame-Resistant Textiles and Films. Foamned plastics (see Section 8-9.2) shall be permitted to be used only by specific approval of the authority having jurisdiction. Scenery and stage properties on thrust stages shall be of either noncombustible or limited-combustible materials.

9-4.5.12 Standpipes. Each legitimate or regular stage over 1,000 sq ft (93 sq m) shall be equipped with a Class 3 standpipe located on each side of the stage, installed in accordance with 7-7.4.2.

9-4.6 Projection Booths.

9-4.6.1 Film or video projectors or spotlights utilizing light sources that produce particulate matter or toxic gases or light sources that produce hazardous radiation without protective shielding shall be located within a projection room complying with 9-3.2.2. Where cellulose nitrate film is used, the projection room shall comply with NFPA 40, Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film.

9-4.6.2 Projection Rooms for Safety Film. Projection rooms for safety film shall comply with the following:

(a) Every projection room shall be of permanent construction consistent with the construction requirements for the type of building in which the projection room is located. Openings shall not be required to be protected. The room shall have a floor area of not less than 80 sq ft (7.4 sq m) for a single machine and not less than 40 sq ft (3.7 sq m) for each additional machine. Each motion picture projector or similar piece of equipment shall have a clear working space not less than 30 in. (76 cm) on each side and at the rear thereof, but only one such space shall be required between adjacent projectors.

(b) The projection room and the rooms appurtenant to it shall have a ceiling height of not less than 7 ft 6 in. (2.3 m).

(c) Each projection room shall have at least one outswinging, self-closing door not less than 30 in. (76 cm) wide and 6 ft 8 in. (2 m) high.

(d) The aggregate of ports and openings for projection equipment shall not exceed 25 percent of the area of the wall between the projection room and the auditorium. All openings shall be provided with glass or other approved material, so as to completely close the opening.

(e) Projection room ventilation shall be not less than the following:

(1) Supply Air. Each projection room shall be provided with adequate air supply inlets arranged to provide well-distributed air throughout the room. Air inlet ducts shall provide an amount of air equivalent to the amount of air being exhausted by projection equipment. Air shall be permitted to be taken from the outside; from adjacent spaces within the building, provided the volume and infiltration rate is sufficient; or from the building air conditioning system, provided it is arranged to supply sufficient air whether or not other systems are in operation.

(2) Exhaust Air. Exhaust booths shall be permitted to be exhausted through the lamp exhaust system. The lamp exhaust system shall be positively interconnected with the lamp so that the lamp will not operate unless the exhaust is sufficient. The exhaust air ducts shall terminate at the exterior of the building in such a location that the exhaust air cannot be readily recirculated into any air supply system. The projection room ventilation system shall be permitted to also serve appurtenant rooms, such as the generator room and the rewind room.

(3) Each projection machine shall be provided with an exhaust duct that will draw air from each lamp and exhaust it directly to the outside of the building. The lamp exhaust shall be permitted to exhaust air from the projection room to provide room air circulation. Such ducts shall be of rigid materials, except for a flexible connector approved for the purpose. The projection lamp and projection room exhaust systems shall be permitted to be combined but shall not be interconnected with any other exhaust or return air system within the buildings.

(4) Electric Arc Projection Equipment. The exhaust capacity shall be 200 cfm (0.09 cu m/s) for each lamp connected to the lamp exhaust system, or as recommended by the equipment manufacturer. Auxiliary air shall be permitted to be introduced into the system through a screened opening to stabilize the arc.

(5) Xenon Projection Equipment. The lamp exhaust system shall exhaust not less than 300 cfm (0.14 cu m/s) per lamp, or not less than that exhaust volume required or recommended by the equipment manufacturer, whichever is greater.

(6) Miscellaneous equipment and storage shall be protected as follows:

(1) Each projection room shall be provided with rewind and film storage facilities.
(2) A maximum of four containers for flammable liquids not greater than 16 oz (0.5 L) capacity and of a nonbreakable type shall be permitted in the projection booth.

(3) Appurtenant electrical equipment, such as rheostats, transformers, and generators, shall be permitted to be located within the booth or in a separate room of equivalent construction.

9-4.3.1 Projection Room Posting. If the projection room is constructed in accordance with NFPA 40, Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film, there shall be posted on the outside of each projection room door, and within the projection room proper, a conspicuous sign with 1-in. (2.5-cm) block letters stating, "SAFETY FILM ONLY PERMITTED IN THIS ROOM".

9-4.7* Special Amusement Buildings.

9-4.7.1 Special amusement buildings shall meet the requirements for assembly occupancies in addition to the requirements of this subsection. Special amusement buildings with an occupant load not greater than 500 persons shall be considered Class C assembly occupancy.

9-4.7.2* Every special amusement building shall be protected throughout by an approved, automatic sprinkler system installed and maintained in accordance with Section 7-7. Where the special amusement building is movable or portable, a sprinkler water supply shall be permitted to be by an approved temporary means.

9-4.7.3 Where the nature of the special amusement building is such that it operates in reduced lighting levels, the building shall be provided throughout with an approved automatic smoke detection system in accordance with Section 7-6. Actuation of any smoke detection system device shall sound an alarm at a constantly attended location on the premises. Actuation of the automatic sprinkler system or actuation of a smoke detection system having an approved vertical fire separation shall be permitted to provide protection throughout the building.

9-4.7.4 (a) Cause illumination in the means of egress to increase to that required by Section 5-8, and

(2) Stop any conflicting or confusing sounds and visuals.

9-4.7.5 Exit Marking.

9-4.7.5.1 Exit marking shall be in accordance with Section 5-10.

9-4.8 Grandstands, Bleachers, and Folding and Telescopic Seating.

9-4.8.1.1 (Reserved.)

9-4.8.2.3 Existing Aisle Stairs. Steps shall not be placed in aisles to overcome differences in level greater than 12 in. (30.5 cm) between the back of each seat and the front of each seat. Aisles having a gradient of 1 in 12 (8.3%) shall be permitted.

9-4.8.3 Aisles and Aisle Accessways.

9-4.8.3.3 Existing Aisle Stairs. Steps shall not be placed in aisles to overcome differences in level greater than 12 in. (30.5 cm) between the back of each seat and the front of each seat. Aisles having a gradient of 1 in 12 (8.3%) shall be permitted.

9-4.8.4.1 The back-to-back horizontal distance of seats in folding and telescopic seating shall be not less than 22 in. (55.9 cm) for seats without backs. There shall be a space of not less than 12 in. (30.5 cm) between the back of each seat and the front of each seat.

9-4.8.4.2 Aisles in folding and telescopic seating shall be permitted to be by stepped aisles.

9-4.8.5 Guards and Railings.

9-4.8.5.1 Railings or guardrails not less than 42 in. (107 cm) above the floor surface or footrest of 36 in. (91 cm) vertically above the center of the seat or seat board, whichever is adjacent, shall be provided along those portions of the backs and ends of all grandstands and folding and telescopic seating where the seats are more than 4 ft (1.2 m) above such footrests.

Exception to (a): Where an adjacent wall or fence affords equivalent safeguard.

9-4.8.5.2 Where the front footrest of any grandstand or folding or telescopic seating is more than 2 ft (0.6 m) above the floor, railings or guards not less than 33 in. (84 cm) above such footrest shall be provided.

Exception to (b): In grandstands, or where the front row of seats includes backrests, the rails shall be not less than 28 in. (71 cm) high.

9-4.8.5.3 Cross aisles located within the seating area shall be provided with rails not less than 26 in. (66 cm) high along the front edge of the cross aisle.

Exception to (c): Where the backs of the seats in front of the cross aisle project 24 in. (61 cm) or more above the surface of the cross aisle, the rail shall not be required.

SECTION 9-5 BUILDING SERVICES

9-5.1 Utilities. Utilities shall comply with the provisions of Section 7-1.

9-5.2 Heating, Ventilating, and Air Conditioning Equipment.

9-5.3 Elevators, Escalators, and Conveyors. Elevators, escalators, and conveyors shall comply with the provisions of Section 7-4.

9-5.4 Rubbish Chutes, Incinerators, and Laundry Chutes. Rubbish chutes, incinerators, and laundry chutes shall comply with the provisions of Section 7-5.

SECTION 9-6 RESERVED

SECTION 9-7 OPERATING FEATURES

9-7.1 Special Provisions for Food Service Operations.

9-7.1.1 All devices in connection with the preparation of food shall be installed and operated to avoid hazard to the safety of occupants.

9-7.1.2 All devices in connection with the preparation of food shall be of an approved type and shall be installed in an approved manner.

9-7.3 Food preparation facilities shall be protected in accordance with Section 7-2.5 and shall not be required to have openings protected between food preparation areas and dining areas.

9-7.4 Portable Concession Equipment.

9-7.4.1 Portable Concession Equipment is equipment that is not in the facility's heat network, and shall not be required to be fire-rated, except...
and only if approved by the authority having jurisdiction. Candle flames shall be protected.

(c) "Flaming sword" or other equipment involving open flames and flamed dishes, such as cherries jubilee or crepe suzette, shall be permitted provided necessary precautions are taken and subject to the approval of the authority having jurisdiction.

(d) Listed and approved LP-Gas commercial food service appliances shall not be required to have a manual extinguishing system protecting the LP-Gas cylinder. The storage room for such appliances shall be approved by NFPA 58, Standard for the Storage and Handling of Liquefied Petroleum Gases.

9-7.5 Open Flame Devices. No open flame devices or pyrotechnic devices shall be permitted to be assembled or used on any premises.

Exception No. 1: Pyrotechnic special effect devices shall be permitted to be used on stages before proximate audiences for ceremonial or religious purposes, as part of a demonstration in exhibits, or as part of a performance, provided adequate precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible material or injury to occupants.

(a) Where necessary for ceremonial or religious purposes.

(b) On stages and platforms as a necessary part of a performance.

(c) Where candles on tables are securely supported on substantial noncombustible bases and candle flame is protected.

Exception No. 2: Open flame devices shall be permitted to be used in the following situations, provided adequate precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible material or injury to occupants:

(a) Where necessary for ceremonial or religious purposes.

(b) On stages and platforms as a necessary part of a performance.

(c) Where candles on tables are securely supported on substantial noncombustible bases and candle flame is protected.

Exception No. 3: Heat-producing equipment complying with 7-2.2.

Exception No. 4: Food service operations in accordance with 9-7.1.

Exception No. 5: Gas lights shall be permitted to be used provided adequate precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible material or injury to occupants.

Exception No. 6: Pyrotechnic Devices. Pyrotechnic devices shall be permitted to be used on stages and before proximate audiences in accordance with the recommendations of the manufacturer of the pyrotechnic device complies with 9-3.2.6.

9-7.5.1 No display or exhibit shall be installed or operated to

9-7.5.2 A storage room for the storage and enclosure of a smoke barrier having a fire resistance rating of 1 hour and protected by an automatic extinguishing system shall be provided for combustible materials not on display or exhibit assemblies. Packaged cranes used to ship exhibitors' supplies and products.

9-7.5.3 Exhibits.

9-7.5.3.1 Exhibits shall comply with 9-7.5.3.2 through 9-7.5.3.11.

9-7.5.3.2 The travel distance within the exhibit booth or exhibit enclosure to an exit access aisle shall not be greater than 50 ft (15 m) measured through the building.

9-7.5.3.3 The upper deck of multilevel exhibits greater than 300 sq ft (27.9 sq m) shall have at least two remote means of egress.

9-7.5.3.4 Exhibit booths shall comply with 9-7.5.3.5.

9-7.5.3.5 Curtains, drapes, and decorations shall comply with the applicable portions of 8-1.4.3.6 Acoustical and decorative material including, but not limited to, cotton, hay, paper, straw, moss, split bamboo, and wood chips shall be flame-retardant treated to the satisfaction of the authority having jurisdiction. Materials that cannot be treated for flame retardancy shall not be used. Foamed plastics and materials containing foamed plastics shall be approved for use as decorative objects such as, but not limited to, mannequins, mannequin pillows, and air-filled floats. Foamed plastics and materials containing foamed plastics shall have a maximum heat release rate for any single fuel package of 150 kW where tested in accordance with UL 792, Standard for Fire Tests for Foam Plastic Used for Decorative Purposes.

Cardboard, honeycombed paper, and other combustible materials having a maximum heat release rate of 150 kW where tested in accordance with UL 792, Standard for Fire Tests for Foam Plastic Used for Decorative Purposes.

Exception: Where the aggregate area of such materials is less than 10 percent of the individual floor or wall area, such materials shall be permitted to be used subject to the approval of the authority having jurisdiction.

9-7.5.7 The following shall be protected by automatic extinguishing systems:

(a) Single-level exhibit booths greater than 300 sq ft (27.9 sq m) and equipped with a ceiling.

(b) Throughout each level of multilevel exhibit booths, including the uppermost level if the uppermost level is covered with a ceiling.

(c) Each single exhibit or group of exhibits with ceilings that do not require sprinklers shall be separated by a minimum of 10 ft (3 m) where the aggregate ceiling exceeds 300 sq ft (27.9 sq m).

9-7.5.7.8 Open flame device and exhibit booths shall comply with 9-3.2.5.

9-7.5.9.7 Cooking and food warming devices in exhibit booths shall comply with 9-3.2.5 and the following:

(a) Gas-fired devices.

(b) Wood greater than 1/4 in. (0.6 cm) nominal thickness or wood chips greater than 1/4 in. (0.6 cm) nominal thickness that is pressure treated fire retardant wood meeting the requirements of NFPA 214, Standard for Fire Retardant Pressure Treated Wood and Fire Retardant Coatings for Building Materials.

(c) Flame-retardant materials complying with NFPA 701, Standard Methods of Fire Tests for Flame-Resistant Fabrics and Films, both small and large scale tests.

(d) Textile wall covering such as carpeting having napped, tufted, looped, or similar surface used as wall or ceiling finish complying with 9-2.3.

9-7.5.9.8 Open flame device and exhibit booths shall comply with 9-3.2.5.

9-7.5.11 No display or exhibit shall be installed in accordance with 7-2.2 and 9-7.5.3.11.

9-7.5.3.11 The authority having jurisdiction shall incorporate controls on the amount and arrangement of combustible or flammable content in multilevel exhibits or group of exhibits to provide an adequate level of safety to life from fire.

9-7.5.3.5.1 Exposed foamed plastic materials and unprotected materials containing foamed plastic used for decorative purposes or stage scenery shall have a maximum heat release rate of 100 kW where such materials are listed in accordance with UL 792, Standard for Fire Tests for Foam Plastic Used for Decorative Purposes.

Exception: Individual foamed plastic items or items containing foamed plastic where the foam plastic does not exceed 1 lb (0.45 kg) in weight.

9-7.5.5 Special Provisions for Exposition Facilities.
shall: where the aggregate cooking surface area does not exceed 288 sq in.

(1) Have lids available for immediate use.
(2) Be limited to 288 sq in. (0.19 sq m) of cooking surface.
(3) Be placed on noncombustible surface materials.
(4) Be separated from each other by a minimum horizontal distance of 2 ft (0.6 m).

Exception to (d): (4): Multiple single-well cooking equipment where the aggregate cooking surface area does not exceed 288 sq in. (0.19 sq m).

(5) Be kept a minimum horizontal distance of 2 ft (0.6 m) from any combustible material.

(e) A 20-1B:10 fire extinguisher shall be provided within the booth for each device, or an approved automatic extinguishing system shall be provided. (See 7.7.4.1.)

9-7.5.3.10 Combustible materials within exhibit booths shall be limited to a one-day supply. Storage of combustible materials behind the booth shall be prohibited. (See 9-5.2.7.2 and 9-4.4.2.)

9-7.5.3.11 Plans for the exposition, in an acceptable form, shall be submitted to the authority having jurisdiction for approval prior to the move-in of any exhibit. The plan shall show all details of the proposed exposition. No exposition shall occupy any exposition facility without approved plans.

9-7.5.4 Vehicles. Vehicles on display within an exposition facility shall comply with the following:

(a) All fuel tank openings shall be locked and sealed in an approved manner to prevent the escape of vapors. Fuel tanks shall not be more than one-half full or contain more than 10 gal (37.9 L) of fuel, whichever is less.

(b) At least one battery cable shall be removed from the batteries used to start the vehicle engine. The disconnected battery cable shall then be taped.

(c) Batteries used to power auxiliary equipment shall be permitted to be kept in service.

(d) Fueling or defueling of vehicles shall be prohibited.

(e) Vehicles shall not be moved during show hours.

9-7.5.5 Compressed flammable gases; flammable or combustible liquids; hazardous chemicals or materials; and Class II or greater laser beams, blasting agents, and explosives shall be prohibited within exhibit halls.

Exception: The authority having jurisdiction shall be permitted to allow the limited use of any of the above items under special circumstances.

9-7.5.6 Alternatives. (See Section 1-5.)

SUBSTANTIATION: Over the years Chapters 8 and 9 have been amended to address special conditions that arise in Assembly Occupancies. These changes have created a document that has become difficult and confusing to use. The following changes should eliminate some or most of the confusion. No technical changes have been made. Changes are only reorganization. The proposed exposition, in an acceptable form, shall be submitted to the authority having jurisdiction for approval prior to the move-in of any exhibit. The plan shall show all details of the proposed exposition. No exposition shall occupy any exposition facility without approved plans.

9-7.5.4 Vehicles. Vehicles on display within an exposition facility shall comply with the following:

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9-7.5.6 Alternatives. (See Section 1-5.)

SUBSTANTIATION: Over the years Chapters 8 and 9 have been amended to address special conditions that arise in Assembly Occupancies. These changes have created a document that has become difficult and confusing to use. The following changes should eliminate some or most of the confusion. No technical changes have been made. Changes are only reorganization. The major reorganization of sections is outlined below for Chapter 8. Nearly identical changes were made to Chapter 9:

8-2.2.3 Revised Exceptions No. 1, 2, 3 and 4 to use positive language.
8-4. Revised and expanded the Special Provisions section. Related paragraphs from Chapter 8 were relocated to the following categories:
8-4.1. Life Safety Evaluations
8-4.2. Smoke Protected Assembly Seating
8-4.3. Windowless or Underground Buildings
8-4.4. High Rise Buildings
8-4.5. Stages and Platforms
8-4.6. Projection Booths
8-4.7. Special Amusement Buildings
8-4.8. Grandstands, Bleachers, and Folding and Telescopic Seating
8-7 Revised and expanded Operating Features section. Related paragraphs from Chapter 8 and Chapter 31 were relocated into the following categories:
8-7.1. Special Provisions for Food Service Operations
8-7.2. Open Flame Devices
8-7.3. Plateutronic Devices
8-7.4. Furnishings, Decorations, and Scenery
8-7.5. Special Provisions for Exposition Facilities

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24

NOT RETURNED: 3 Landry, Lattey and Wertheimer

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24

NOT RETURNED: 3 Landry, Lattey and Wertheimer
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

(End of Log CP604)

COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE:

DEGENKOLB: This modification of the definitions would exempt a great number of smaller theaters from providing the fire protection which would be provided if it were a "legitimate theater". For example, a local theater accommodating a traveling New York stage production, has a proscenium height of 20-22 ft. Scenery could be readily flown on the stage even though it has a stage height of less than 50 ft. Smaller theaters, less than 750 seats, are quite likely to have a proscenium height of less than 25 ft and so would be exempt from legitimate theater safety requirements. The substantiation says that when the stage height is less than 50 ft "less scenery will be flown". That is not so. The same amount of scenery will probably be present and the fire load will be the same. So an equivalent fire load in a smaller volume of stage would be provided.

(End of Log CP601)

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### Table 8-1.6 Construction Type Limitations

<table>
<thead>
<tr>
<th>Type of Construction</th>
<th>Below LED</th>
<th>LED</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I(445)††</td>
<td>Any assembly†</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Any assembly If OL&gt;300 see Note†</td>
</tr>
<tr>
<td>I(332)††</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
</tr>
<tr>
<td>II(211)††</td>
<td>Any assembly†</td>
<td>Limited to 1 level below LED</td>
<td>Any assembly</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
</tr>
<tr>
<td>IV(2HH)</td>
<td>Any assembly</td>
<td>Limited to 1 level below LED</td>
<td>Any assembly</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
</tr>
<tr>
<td>V(111)</td>
<td>Any assembly†</td>
<td>Limited to 1 level below LED</td>
<td>Any assembly</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
</tr>
<tr>
<td>V(000)</td>
<td>Assembly with OL≤1000†</td>
<td>Limited to 1 level below LED</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
<td>Assembly with OL≤1000†</td>
</tr>
</tbody>
</table>

†Permitted if all the following are protected throughout by an approved supervised automatic sprinkler system in accordance with Section 7-7:
(a) The level of the assembly occupancy, and
(b) Any level below the level of the assembly occupancy, and
(c) In the case of an assembly occupancy located below the level of exit discharge, any level intervening between that level and the level of exit discharge, including the level of exit discharge.
†† Where every part of the structural framework of roofs in Type I or Type II construction is 20 ft (6.1 m) or more above the floor immediately below, omission of all fire protection of the structural members shall be permitted, including protection of trusses, roof framing, and decking.
NP: Not Permitted
LED: Level of Exit Discharge
OL: Occupant Load
NOTE: For the purpose of this table, a mezzanine is not counted as a level.
The appendix note attached to the existing 8-1.7.2 stays with the paragraph in its new renumbered position as 8-1.7.3.
Change 8-2.2.2 as follows:
8-2.2.2 Assembly occupancies with occupant loads of 300 or less in covered malls (see 24-4.4.1 Exception) shall be permitted to have horizontal or vertical security grilles or doors complying with Exception No. 4 to 5-2.1.4.1 on the main entrance/exits.
Delete 8-2.2.6.2 thus leaving paragraph 8-2.2.6.1 which refers to 5-2.5, the Section on Ramps. Relocate the existing exception to 8-2.2.6.2 to become exception to 8-2.2.6.1.
Change 8-2.4 and its associated Appendix Note as follows:
A-8-2.4 It is not the intent to require four means of egress from each level of a Class A assembly occupancy building having a total occupant load of more than 1000 where, individually, the floors have occupant loads of less than 1000, there fail to meet the requirements assigned to Class B and Class C assembly occupancies.
8-2.4.1 The number of exits shall be in accordance with Section 5-4.
Exception No. 1: Fenced outdoor assembly occupancies in accordance with 8-2.4.4.
Delete 8-2.2.2 and 8-2.4.3.
Renumber 8-2.4.4 through 8-2.4.7 as 8-2.4.2 through 8-2.4.5.
8-2.5.2 Change as follows:
Exception No. 1: Festival seating shall be permitted in assembly occupancies having occupant loads of 1000 or less.
Exception No. 2: Festival seating shall be permitted in assembly occupancies having occupant loads greater than 1000 and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system in accordance with 7-6.1 and this section.

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### Table 9-1.6 Construction Type Limitations

<table>
<thead>
<tr>
<th>Type of Construction</th>
<th>Below LED</th>
<th>LED</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
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<td>I(443)††</td>
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<td>Any assembly</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Any assembly</td>
</tr>
<tr>
<td>I(222)††</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Assembly with OL≥1000††</td>
<td>No Permitted</td>
</tr>
<tr>
<td>II(111)††</td>
<td>Any assembly</td>
<td>Limited to 1 level below LED</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Assembly with OL≥1000††</td>
<td>No Permitted</td>
</tr>
<tr>
<td>III(211)</td>
<td>Any assembly</td>
<td>Limited to 1 level below LED</td>
<td>Any assembly</td>
<td>Any assembly</td>
<td>Assembly with OL≥1000††</td>
<td>No Permitted</td>
</tr>
<tr>
<td>IV(21H)</td>
<td>Any assembly</td>
<td>Limited to 1 level below LED</td>
<td>Any assembly</td>
<td>Assembly with OL≥1000††</td>
<td>Assembly with OL≥2000††</td>
<td>No Permitted</td>
</tr>
<tr>
<td>V(111)</td>
<td>Assembly with OL≤1000††</td>
<td>Assembly with OL≤1000††</td>
<td>Assembly with OL≥1000††</td>
<td>Assembly with OL≥2000††</td>
<td>Assembly with OL≥2000††</td>
<td>No Permitted</td>
</tr>
<tr>
<td>III(200)</td>
<td>Assembly with OL≤1000††</td>
<td>Assembly with OL≤1000††</td>
<td>Assembly with OL≥1000††</td>
<td>Assembly with OL≥2000††</td>
<td>Assembly with OL≥2000††</td>
<td>No Permitted</td>
</tr>
<tr>
<td>V(098)</td>
<td>Assembly with OL≤1000††</td>
<td>Assembly with OL≤1000††</td>
<td>Assembly with OL≥1000††</td>
<td>Assembly with OL≥2000††</td>
<td>Assembly with OL≥2000††</td>
<td>No Permitted</td>
</tr>
</tbody>
</table>

†Permitted if all the following are protected throughout by an approved automatic sprinkler system in accordance with Section 7-7:
1. The level of the assembly occupancy, and
2. Any level intervening between the level of the assembly occupancy and the level of exit discharge, and
3. The level of the exit discharge if there are any openings between the level of exit discharge and the exits serving the assembly occupancy.

†† Where every part of the structural framework of roofs in Type I or Type II construction is 20 ft (6.1 m) or more above the floor immediately below, omission of all fire protection of the structural members shall be permitted, including protection of trusses, roof framing, and decking.

NP: Not Permitted
LED: Level of Exit Discharge
OL: Occupant Load

NOTE: For the purpose of this table, a mezzanine is not counted as a level.
9-1.7.2 The occupant load of a stage area that is part of an assembly area shall be included in determining the occupant load for the assembly area.

The appendix note attached to the existing 9-1.7.2 stays with the paragraph in its new renumbered position as 9-1.7.3.

Change 9-2.2.2 as follows:

9-2.2.2.2 Assembly occupancies with occupant loads of 500 or less

in covered malls (see 25-4.4.1 Exception) shall be permitted to have horizontal or vertical security grilles or doors complying with Exception No. 4 to 5-2.1.4.1 on the main entrance/exits.

Change 8-2.4 and its associated Appendix Note as follows:

A-9-2.4 It is not the intent to require four means of egress from each level of a theater as an assembly occupancy building having a total occupant load of more than 1000 where, individually, the floors have base occupant loads of less than 1000, that fall in the range assigned to Class B and Class C assembly occupancies.

9-2.4.1 The number of exits shall be in accordance with Section 5-4.

Exception No. 1: Assembly occupancies with occupant loads of 600 or fewer shall have 2 separate means of egress. Assembly occupancies with occupant loads greater than 600 shall have 3 separate means of egress.

Exception No. 2: Fenced outdoor assembly occupancies in accordance with 9-2.4.4.

Delete 9-2.4.2 and 9-2.4.3

Renumber 9-2.4.4 through 9-4.4.7 as 9-2.4.4 through 9-2.4.5

9-2.5.2 Exceptions No. 1 and No. 2, change to read as follows:

Exception No. 1: Festival seating shall be permitted in assembly occupancies having occupant loads of 1000 or less. Exception No. 1: Festival seating shall be permitted in assembly occupancies with occupant loads greater than 1000 with an approved life safety evaluation. (See 9-4.5)

9-3.3.3 Change as follows:

9-3.3.3 Interior finish in all general assembly areas having occupant loads greater than 300 shall be Class A or Class B. In assembly areas having occupant loads of 500 or less, interior finish shall be Class A, Class B, or Class C.

9-3.4.1 Change as follows:

9-3.4.1 Assembly occupancies with occupant loads greater than 300 and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system in accordance with 7-6.1 and this section.

9-3.4.2* Change as follows:

9-3.4.2* In assembly occupancies with occupant loads greater than 300 automatic detection shall be provided in all hazardous areas that are not normally occupied.

Exception remains unchanged.

9-4.6.1 Change as follows:

9-4.6.1 Special amusement buildings, regardless of occupant load, shall meet the requirements for assembly occupancies in addition to the requirements of this subsection.

SUBSTANTIATION: It is proposed to delete the references to sub classification of assembly occupancies. The existing sub classification system has been simplified over the years so that it no longer makes sense to use the system. Simply referencing the requirements to certain occupant load levels is a more straightforward approach that is also less confusing.

COMMITTEE ACTION: Accept

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 22

NEGATIVE: 2

NOT RETURNED: 3 Landry, Lattey and Wertheimer

Note: Supporting material is available for review at NFPA Headquarters.

COMMITTEE ACTION: Accept in Principle.

Add a footnote to Table 8-1.6 and tie the footnote to Types I (443), I (852), II (222), II (111), and III (211):

Where seating treads and risers serve as floors, such seating treads and risers shall be permitted to be of one hour fire resistance rated construction. Structural members supporting seating treads and risers shall conform to the requirements of Table 8-1.6. Joints between seating tread and riser units shall be permitted to be unrated provided such joints do not involve separation from areas containing high hazard contents and the building is protected by automatic sprinklers in accordance with Section 7-7.

COMMITTEE STATEMENT: The above Committee Action accomplishes that which the submitter requested but does so using commonly accepted code text. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 22

NEGATIVE: 2

NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE:

CONNOR: Please change my NOP letter ballot vote on this log to negative. Phil Sherman is correct. It was never my intent to permit essentially unrated floor construction in all assembly occupancies.

SHERMAN: The proposer appears to have submitted this proposal with regard to large stadium type occupancies. The language as written applies to all places of assembly. The result is to allow floors which consist of treads and risers in places of assembly to be one hour rated with unprotected joints, even when the use on the lower floor is not rated to the assembly. For instance, this would allow the house of a theater to be essentially open to the basement, as long as the basement was not high hazard. Based on the required sprinklers, we should at least require a smoke tight separation.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: It is not clear from what the exterior structural steel is intended to be separated. The submitter's intent is not evident. The subject appears to be a building Code issue.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 3 Landry, Lattey and Wertheimer

COMMITTEE ACTION: Accept.

COMMITTEE STATEMENT: Add an exception to 8-1.6 to read as follows:

Exception: In outdoor assembly seating facilities of Type I or Type II construction for which an approved life safety evaluation in accordance with 8-4.5 is conducted, exterior structural steel members shall be permitted to be unrated when separated as follows: 0.5 ft with 2 hour rated exterior construction, 5-10 ft with 3/4 hour rated exterior construction, and 10 ft and over with noncombustible exterior wall construction.

SUBSTANTIATION: Within an outdoor assembly seating facility, intermittent sources of fuel for fire exists. Efforts to protect the structural steel from reaching critical temperatures can be effectively handled by separating the steel from the source. Fire protective coatings for exterior applications inhibit the ability to inspect and maintain the structural integrity of the members. When the structural steel is separated from the heat source it could be painted allowing visual inspection of members and connections for deterioration. Sections 771.5(D) and 770.2(B) of the State of New York codes, rules and regulations incorporating supplement number 4 dated April 30, 1994 allows for unrated steel by distance separation.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: It is not clear from what the exterior structural steel is intended to be separated. The submitter's intent is not evident. The subject appears to be a building Code issue.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 3 Landry, Lattey and Wertheimer

COMMITTEE ACTION: Accept.

COMMITTEE STATEMENT: Ed Roether, HOKSport

RECOMMENDATION: Add an exception to 8-1.6 to read as follows:

SUBMITTER: Ed Roether, HOK Sport

RECOMMENDATION: Add an exception to 8-1.6 to read as follows:

Exception: In outdoor assembly seating facilities of Type I or Type II construction for which an approved life safety evaluation in accordance with 8-4.5 is conducted, exterior structural steel members shall be permitted to be unrated when separated as follows: 0.5 ft with 2 hour rated exterior construction, 5-10 ft with 3/4 hour rated exterior construction, and 10 ft and over with noncombustible exterior wall construction.

SUBSTANTIATION: Within an outdoor assembly seating facility, intermittent sources of fuel for fire exists. Efforts to protect the structural steel from reaching critical temperatures can be effectively handled by separating the steel from the source. Fire protective coatings for exterior applications inhibit the ability to inspect and maintain the structural integrity of the members. When the structural steel is separated from the heat source it could be painted allowing visual inspection of members and connections for deterioration. Sections 771.5(D) and 770.2(B) of the State of New York codes, rules and regulations incorporating supplement number 4 dated April 30, 1994 allows for unrated steel by distance separation.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: It is not clear from what the exterior structural steel is intended to be separated. The submitter's intent is not evident. The subject appears to be a building Code issue.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 3 Landry, Lattey and Wertheimer

COMMITTEE ACTION: Accept.

COMMITTEE STATEMENT: Greg Cahanin, Exit Seminars

RECOMMENDATION: Add a new 8-1.7.1(j) to read:

(j) Exposition Facilities. One person per 7 sq. ft. for 40 percent of the gross area of the exhibition hall or room provided:

1. the building is full sprinklered;
2. exhibit area has clear aisles of 10 ft for all looped aisles or aisles leading directly to exits
3. has dead end aisles of not less than 8 ft in width and 20 ft in length, and
4. an approved fire alarm system with visual and audible alarms is provided for the exhibit space.

SUBSTANTIATION: Current calculations for the occupant loads for exhibit halls result in rigorous measurement of exhibit space and aisle width and length. This proposal is an effort to develop a less rigid method of determining the exhibit hall population which can be used by hall operators and inspectors alike. The 40 percent of gross figure is a conservative determination of non-rented space in an exhibit area. My experience is that parties on both sides of compliance tend to "swag" the occupant load calculations or limit the occupant load to egress doors sizing. Halls not meeting the qualifying criteria would be calculated in the traditional way.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The proposed change to one person per 17.3 square feet gross area is not significantly different than one person per 15 square feet net floor area. Also, contrary to the submitter's statement, there might be occupants within the non-rented space.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer

---

SUBMITTER: Ed Roether, HOK Sport

RECOMMENDATION: Add a fourth exception to 8-2.2.2.3 to read as follows:

Exception No. 4: In outdoor assembly occupancies where exit existing is served by gates, a panic device shall not be required if the gate remains unlocked during the event and is provided with a sign stating: "This gate shall remain unlocked during events." The means of egress for the facility during times other than events shall comply with the previous requirements of 8-2.2.2.3 while considering the seating areas with no occupant load.

SUBSTANTIATION: Providing panic devices on gates is problematic for maintaining security since there is no effective barrier between the two sides of the gate. Often times we see that security is satisfied by locks and chains which are removed prior to events. In order to maintain security and life safety it is important to separate the conditions of occupancy so that each provide an effective means of egress.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The proposer's intent can be met by current Code language. As long as the door/gate is neither latched nor locked, panic hardware is not required by current Code text.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE:

TEAGUE: I disagree with the Committee's statement. The current Code language says "the door...may be provided with a latch or lock only if it is a panic hardware or..."

This is not the same as the Committee language of "as long as the door/gate is neither latched or locked."

The physical construction of gates for outdoor assembly occupancies will be greatly restricted to require panic devices. The proposal to resolve this requirement by exception, for outdoor assembly only, seems reasonable considering the accompanying sign proposal. There are a multitude of outdoor assembly occupancies currently in operation today without panic devices, especially high school, little league and similar locations.

---

COMMITTEE ACTION: Accept

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

---

SUBMITTER: Technical Committee on Assembly and Educational Occupancies

RECOMMENDATION: Add a new 8-2.2.2.9 and 9-2.2.11 to read:

8-2.2.2.9 Alternating Tread Devices. Alternating tread devices complying with 5-2.11 shall be permitted.

9-2.2.11 Fire Escape Ladders. Fire escape ladders complying with 5-2.11 shall be permitted.

COMMITTEE STATEMENT: The action taken on the referenced proposal should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

---

SUBMITTER: James K. Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Add a new 8-2.2.8/9-2.2.10 to read:

8-2.2.8/9-2.2.10 Fire Escape Ladders. Fire escape ladders complying with 5-2.11 shall be permitted.

COMMITTEE STATEMENT: The proposed change to one person per 17.3 square feet gross area is not significantly different than one person per 15 square feet net floor area. Also, contrary to the submitter's statement, there might be occupants within the non-rented space.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 27
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE:

TEAGUE: I disagree with the Committee's statement. The current Code language says "the door...may be provided with a latch or lock only if it is a panic hardware or..."

This is not the same as the Committee language of "as long as the door/gate is neither latched or locked."

The physical construction of gates for outdoor assembly occupancies will be greatly restricted to require panic devices. The proposal to resolve this requirement by exception, for outdoor assembly only, seems reasonable considering the accompanying sign proposal. There are a multitude of outdoor assembly occupancies currently in operation today without panic devices, especially high school, little league and similar locations.

---

COMMITTEE ACTION: Accept

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

---

SUBMITTER: Technical Committee on Assembly and Educational Occupancies

RECOMMENDATION: Add a new 8-2.2.9 and 9-2.2.11 to read:

8-2.2.9 Alternating Tread Devices. Alternating tread devices complying with 5-2.11 shall be permitted.

9-2.2.11 Fire Escape Ladders. Fire escape ladders complying with 5-2.11 shall be permitted.

COMMITTEE STATEMENT: The proposed change to one person per 17.3 square feet gross area is not significantly different than one person per 15 square feet net floor area. Also, contrary to the submitter's statement, there might be occupants within the non-rented space.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

---

SUBMITTER: Technical Committee on Assembly and Educational Occupancies

RECOMMENDATION: Add a new 8-2.2.9 and 9-2.2.11 to read:

8-2.2.9 Alternating Tread Devices. Alternating tread devices complying with 5-2.11 shall be permitted.

9-2.2.11 Fire Escape Ladders. Fire escape ladders complying with 5-2.11 shall be permitted.

COMMITTEE STATEMENT: The proposed change to one person per 17.3 square feet gross area is not significantly different than one person per 15 square feet net floor area. Also, contrary to the submitter's statement, there might be occupants within the non-rented space.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

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SUBMITTER: Technical Committee on Assembly and Educational Occupancies

RECOMMENDATION: Add a new 8-2.2.9 and 9-2.2.11 to read:

8-2.2.9 Alternating Tread Devices. Alternating tread devices complying with 5-2.11 shall be permitted.

9-2.2.11 Fire Escape Ladders. Fire escape ladders complying with 5-2.11 shall be permitted.

COMMITTEE STATEMENT: The proposed change to one person per 17.3 square feet gross area is not significantly different than one person per 15 square feet net floor area. Also, contrary to the submitter's statement, there might be occupants within the non-rented space.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

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COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-196. (8-2.3.2 Exception No. 3 (New)): Reject
SUBMITTER: Ed Roether, HOK Sport
RECOMMENDATION: Add a third exception to 8-2.3.2 to read as follows:
Exception No. 3: In assembly occupancies where the seating and the entire means of egress is exterior, conforming with the requirements of 8-4.5, then the minimum clear width of aisles and other means of egress need not exceed the requirements of Table 8-2.3.2(B) for 15,000 seats or more.
SUBSTANTIATION: 8-2.3.2 states Table 8-2.3.2(B) can be used when approved life safety evaluation occurs but does not allow variation to Table 8-2.3.2(B) when life safety evaluation supports variation. Small outdoor assembly facilities under the current requirements have more restrictive aisle width requirements than larger facilities though they often contain less risk of fire.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The submitter has not substantiated the choice of the 15,000 seat criterion as the appropriate factor for use in smaller, outdoor, smoke protected facilities.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE:
MILLER: I have voted negatively on this proposal against the Committee’s Action to reject this proposed change due to the fact that the reasoning for its rejection, in my opinion, is inadequate and does not address a very legitimate question that the proponent has raised for assembly occupancies where the seating and entire means of egress is exterior and conforms with the requirements of 8-4.5. Minor league baseball parks are a perfect example of exactly what the proponent is describing and yet these would have to meet more stringent requirements to larger domed arena which is not justifiable. It seems the proponent was merely trying to propose some seat number that could be applied in the Code. What the proponent brings forth in his substantiating statement is correct and flies in the face of common sense when applied to facilities of this nature. I believe it is the duty of the Committee to properly address this particular issue and set up parameters that make sense for these particular projects. Perhaps the Committee would feel more comfortable in using a seating number of 5,000 which relates to the sprinklered capacity referenced in the BOCA Code at 21 in. per occupant for stairs and .15 in. per occupant for doors.

101-197. (8-2.4.1, 9-2.4.1, 8-2.4.2, 9-2.4.2): Accept in Principle
SUBMITTER: Joseph H. Versteeg, Torrington, CT
RECOMMENDATION: Reword current text as follows:
Change "... separate means of egress as remotely located from each other as practical and..." to:
"... separate and remotely located means of egress and..."
SUBSTANTIATION: Current text requires Class A and B assembly occupancies to be provided with separate means of egress. During a prior Code change, the term “exit” was replaced with the more appropriate phrase “separate means of egress.” This change was necessary to reflect the fact that many assembly areas do not have exits directly from the space but utilize doors and corridors appropriately classified as exit access.
Unfortunately, many designers and enforcers have interpreted the phrase “separate means of egress” as a defined term within Chapter 3 - Definitions and therefore require each means of egress from the assembly be provided with an atmospheric separation that precludes contamination of the means of egress by the same fire.
COMMITTEE ACTION: Accept in Principle.
See Proposal 101-188 (Log #CP6901) that deletes the Class A, Class B, and Class C criteria from Chapters 8 and 9.
COMMITTEE STATEMENT: The action on the referenced proposal should meet the submitter’s intent.

101-198. (8-2.5.5, 9-2.5.5): Accept
SUBMITTER: James Ladhrop, Koffel Associates, Inc.
RECOMMENDATION: Move 8-2.5.5 to 8-2.5.5.1.
Delete 9-2.5.5.
Reumber subsequent paragraphs.
SUBSTANTIATION: The width of corridors is a capacity issue, not an arrangement issue. See 10-2.3.2, 11-2.3.2, 12-2.3.3, 15-2.3.3, etc.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-199. (8-2.5.9.3(g) (New)): Accept in Principle
SUBMITTER: Ed Roether, HOK Sport
RECOMMENDATION: Add new paragraph (g) to read as follows:
Add new paragraph (g) to read as follows:
(g) 36 in. (91 cm) for stairs having seating on each side when serving not more than 50 seats.
SUBSTANTIATION: In suites it is desirable to maintain a proximity between the furthest seat and the aisle for comfort. Often times this requires an aisle between two rows of seats on each side. A 36 in. wide aisle would be consistent with 5-2.2.2.1 and a 48 in. wide aisle restricts the width of seats served by the aisle. A 23 in. wide aisle would be acceptable when the aisle is located to one side of the suite instead of centered in the suite.
COMMITTEE ACTION: Accept in Principle.
Do not add a new paragraph (g) but add an Exception to (a) and an Exception to (d) reading:
Exception to (a): 36 in. where aisle does not serve more than 50 seats.
Exception to (d): 36 in. where aisle does not serve more than 50 seats.
Similarly, add an Exception to (a) and an Exception to (d) to 9-2.5.9.3 to read:
Exception to (a): 36 in. where aisle does not serve more than 50 seats.
Exception to (d): 36 in. where aisle does not serve more than 50 seats.
COMMITTEE STATEMENT: The above Committee Action accomplishes which the submitter requested but does so by positioning the additional exceptions in a more appropriate location. This should meet the submitter’s intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-200. (8-2.5.9.9 (New)): Reject
SUBMITTER: Ed Roether, HOK Sport
RECOMMENDATION: Add new 8-2.5.9.9 to read as follows:
8-2.5.9.9 Aisle Landings. Provide a level landing where an aisle meets a concourse, vomitory or cross aisle with a minimum width and length that matches the required width of the aisle.
Exception: When the landing occurs within the middle of a seating section.
SUBSTANTIATION: In sports stadia the common seating tread size used is 33 in. Using a larger tread size is impractical due to the inefficiencies of satisfying the required number of seats and accommodating sightlines. Providing a level landing within the middle of a run of seating treads is problematic when the aisle width is wider than the tread width. Raising the landing to the height required to achieve a level landing in the aisle requires steps to occur within the vomitory where it can pose a trip hazard for the aisle continuing down from the vomitory. Guardrails at the end of raised landings obstruct sightlines for adjacent seating.
Note: Supporting material is available for review at NFPA Headquarters.
E X P L A N A T I O N  O F  N E G A T I V E:
TECHNICAL: The Code requires addressing stepped aisles are primarily a resultant of a set of minimum dimensions based on the relationship of the seats to the aisles not the number of seats served. For this reason, aisle landing widths, particularly at portals located in the middle of aisles, have a rule set on somewhat arbitrary dimensions, not directly related to the seats served. Where an aisle splits around a portal the resultant width of 36 in., minimum is set by 9-2.5.8.2(b). This width in combination results in a combined 72 in. aisle width, usually far exceeding capacity limits. While the proposal does not adequately address this issue with a blanket exception, aisle landing width should be studied for future clarification.

A F F I R M I V E:

RELATING TO: 9-2.5.11.4

STATEMENT: The proposal does not improve Code requirements addressing stepped aisles.

RECOMMENDATION:
Delete everything but the exception in 8-2.5.11.1 (9-2.5.11.1), 8-2.5.11.4 (9-2.5.11.4), and 8-2.5.11.7 (9-2.5.11.7).

Exception to (read as a requirement — which it already does), revise "stepped aisles" to "aisle stairs" in 8-2.5.11.4 (9-2.5.11.4), and remnumber sections.

SUBSTANTIATION:
For the 1994 edition this section was simply inserted (apparently hastily) in NFPA 101 from NFPA 102 without considering requirements already present in NFPA 101 addressing aisles and aisle access ways for grandstands. All that is necessary here is a few requirements for bleachers plus folding and telescopic seating; these have been retained without duplicating the other requirements already in the Code.

COMMITTEE ACTION:
Accept in Principle.

REVISE 8-2.5.11 through 8-2.5.11.7 and 9-2.5.11 through 9-2.5.11.7 as follows:
Move the information in Table 8-2.5.11.1 to become an exception to 8-2.5.7.2 Exception.

(a) Egress from front row is not obstructed by rail, guard, or other obstruction.
(b) Row spacing is 28 in. (71.1 cm) or less.
(c) Rise per row, including first row, is 6 in. (15.2 cm) or less.
(d) Number of rows does not exceed 16.
(e) Seat spaces are not physically defined.
(f) Seat boards that are also used as stepping surfaces for descent shall have a minimum width of 12 in. (30.5 cm), and, where there is a depressed footboard, the gap between seat boards of adjacent rows shall not exceed 12 in. (30.5 cm) measured horizontally. Leading edges of such surfaces shall be provided with a contrasting marking strip so that the location of such leading edge is readily apparent, particularly where viewed in descent. Such stripe shall be at least 1 in. (2.5 cm) wide and shall not exceed 2 in. (5.1 cm) in width. The marking stripe shall not be required where bleacher surfaces and environmental conditions under all conditions of use are such that the location of each leading edge is readily apparent, particularly when viewed in descent.

Exception: The maximum number of seats permitted between the furthest seat in an aisle in grandstands, bleachers, and folding and telescopic seating shall not exceed that shown in Table 8-2.5.7.2 Exception.

Exception to (a): The riser height of aisle stairs in folding and telescopic seating shall be permitted to be a minimum of 3 1/2 in. (8.9 cm) and a maximum of 11 in. (27.9 cm).

Exception to (b): The riser height of aisle stairs in folding and telescopic seating shall be permitted to be a minimum of 3 1/2 in. (8.9 cm) and a maximum of 11 in. (27.9 cm).

Exception No. 2 to (a): In grandstands, bleachers, and folding and telescopic seating, steps shall not be placed in aisles to overcome differences.

COMMITTEE STATEMENT:
The Committee Action accomplishes that which the submitter requested and provides sufficient detail instructing how each change needs to be made. This should meet the submitter's intent.

V O T E  O N  C O M M I T T E E  A C T I O N : AFFIRMATIVE: 24
NEGATIVE: 3
NOT RETURNED: 3 Landry, Lattey and Wertheimer

( Log #CP614)

A X E

101- 201 - (8-2.5.11.1 Exception and 9-2.5.11.1 Exception): Accept Note: The Technical Correlating Committee on Safety to Life (AAC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Assembly and Educational Occupancies (AXE) reconsider the recommended change in view of the weak substantiation that provides no technical basis for the relaxation in the geometry requirements applicable to bleachers where aisles are not provided. AXE is asked to reconsider the subject in view of the explanation of negative votes, especially that received from Mr. Pauls.

SUBMITTER: Technical Committee on Assembly and Educational Occupancies

RECOMMENDATION:
Revise the exception to 8-2.5.11.1 and the exception to 9-2.5.11.1 as follows:
Replace sub-item (c) with the following:
(c) Rise per row is 1 1/2 in. or less.
Insert a new (d) and renumber current (d) through (e) through (g).
(d) First seating row height is not more than 18 in. above grade.
Relevel (f) to read:
(f) Seat boards that are also used as stepping surfaces for descent shall provide a walking surface with a minimum width of 9 in., and, where there is a depressed footboard...

SUBSTANTIATION:
The changes are being made to recognize bleacher geometry that is currently provided in the marketplace.

COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 20
NEGATIVE: 4
NOT RETURNED: 3 Landry, Latney and Wertheimer

EXPLANATION OF NEGATIVE:
CONNOIS: There is no justification for changing the long established criteria for the exception to aisles in assembly seating. This exception would permit a stair with 10 1/2 in. risers and 28 in. treads.

GORELLE: After reviewing the proposal and the comments by Mr. Connor and Mr. Pauls I find that I agree with the position of Mr. Pauls. Therefore my reason for a negative vote is: At this point there is no justification for changing an established criteria for the exception to aisles in assembly seating.

PAULS: Log #CP614 came late in the ROP meeting and only four members voted on the issue. There were indications that neither the Committee member proposing this Committee proposal nor many of the other Committee members understood the change. They seemed to forget that the change was to an exception which simply permitted aisles to be omitted if certain conditions were met. The exception did not rule out having bleachers with the higher riser heights and reduced seat widths noted in the change—as long as aisles were provided. If this proposal is not overturned we will have the dangerous situation where children, for example, will have no option—in the absence of aisles—to scramble down bleachers by stepping on steps created by narrow seats (only nine inches wide) and separated by as much as 19 in. of space horizontally and 10 1/2 in. vertically. This is extremely dangerous to ask of adults, let alone children and could well be a factor in the many thousands of emergency—department treated injuries related to bleachers each year in the U.S.]. The proposal is completely out of character with the rest of the Code and, unless this proposal is rejected, will be an embarrassment to the NFPA.

STASHAK: This proposal creates a dangerous egress scenario in bleachers if it is passed. The committee is removing criteria that provides for a safer descent down the bleachers (seat to seat) in the event aisles are not provided. As Jack Pauls states in his explanation of negative, the exception does not rule out the use of current bleachers geometry, but aisles have to be provided. The exception to 8.2.6.2 allows for the elimination of aisles if certain criteria are met, these criteria providing for a safer and easier descent down the bleachers knowing that the physical egress path will be the bleachers seats.

RECOMMENDATION: Accept in Principle

ADDENDUM:

101-203 - (8-2.6.2 Exception No. 2 (New)): Accept in Principle

SUBMITTER: Ed Roether, HOKSport

RECOMMENDATION: Add a second exception to 8-2.6.2 to read as follows:

Exception No. 2: In smoke protected assembly seating facilities of Type I or Type II construction, the travel distance from the center point of the field of play shall not exceed 400 ft to an approved exit stair, ramp or walk at the building exterior. The field of play shall be permitted to contain temporary seating when that seating conforms with the requirements of 8-4.3.

Note: Supporting material is available for review at NFPA Headquarters.

COMMITTEE ACTION: Accept in Principle.

REVISE: The first sentence of 8-2.6.2 to change “200 ft” to “400 ft.”

Revise the current Exception to 8-2.6.2 by deleting its first sentence.

COMMITTEE STATEMENT: For smoke protected assembly seating, a change to 400 ft of travel to reach the vomitory portal is justified. This should meet the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 3 Landry, Latney and Wertheimer

EXPLANATION OF NEGATIVE:
CONNOIS: This change radically alters the current Code without substantiation. The current Code allows lower railings where the likelihood of a fall or crowd crush against the drop off is much less than the normal and where the reduced height railing is necessary for sightlines. This includes the “fascias of boxes, balconies and galleries” which are not the same as “in front of seating” per the change. In general, this radical change will create an interpretation nightmare for “in front of seating” and “at a front row of seating”, etc. Consider the traditional opera box which is circular in plan with 4 to 6 non-fixed chairs; what part of that fascia is “at front row of seating” and what part is “to the side”?

SUBMITTER: Ed Roether, HOKSport

RECOMMENDATION: Add a second exception to 8-2.11.1.2(a) to read as follows:

Exception No. 2 to (a): When an aisle occurs along a vomitory or opening into a seating area and the highest aisle surface is less than 20 ft above the surface within the vomitory or opening, then the height of the guard shall be at least 34 in. (86 cm). When seating occurs to the side of a vomitory or opening into a seating area and the highest seat or seat board surface is less than 20 ft above the surface within the vomitory or opening then the height of the guard shall be at least 42 in. (107 cm) above the floor or grade below. The fasciae or railing shall be a minimum of 36 in. high and shall provide a minimum 42 in. measured diagonally between the top of the rail and the nosing of the nearest tread.

CONNOIS: This change radically alters the current Code without substantiation. The current Code allows lower railings where the likelihood of a fall or crowd crush against the drop off is much less than the normal and where the reduced height railing is necessary for sightlines. This includes the “fascias of boxes, balconies and galleries” which are not the same as “in front of seating” per the change. In general, this radical change will create an interpretation nightmare for “in front of seating” and “at a front row of seating”, etc. Consider the traditional opera box which is circular in plan with 4 to 6 non-fixed chairs; what part of that fascia is “at front row of seating” and what part is “to the side”?
SUBSTANTIATION: Guardrails complying with 8-2.11.1.2 within a seating section obstruct sightlines. In sports facilities seating riser heights typically are between 6 in. and 24 in. The most significant impact to sightlines occurs when the riser heights are low. In this condition, the minimum height requirements of the guardrail above the seat exceeds the height of the guardrail above the aisle accessway higher than the minimum. When the riser heights are high the minimum height of the guardrail above the aisle accessway tends to force the height of the guardrail above the aisle accessway higher than the minimum. While we concur with the need for the requirements listed in 8-2.11.1.2 at the end of a seating deck, we are also keenly aware of their impact to sightlines when occurring within a seating deck. Exception 1 of 1021.2 of the 1993 BOCA National Building Code requires a 34 in. minimum height guard along stairs when not more than 20 ft in height.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The current requirement for guards applies at a 30 in. vertical drop, and the proposer has not substantiated why the requirements should be reduced for 20 ft vertical drops.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 22
NEGATIVE: 2
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE: MILLER: I am voting negatively against the Committee’s Action for rejection. The proponent has brought to light some very real world conditions for vomitories where sightlines are blocked for a stepped aisle along a vomitory. The proponent is still in favor of a 42 inch high guardrail where steps intersect the top of the vomitory. However, I believe where people are descending along a vomitory that a 34 inch minimum height is more than enough to safeguard occupants from going up the vomitory especially in light of the fact that accidents where people fall laterally over handrails are extremely limited. If this were the case, then we would see the statistics showing up on typical switchback stairs where we are not concerned with occupants falling over the railings as they descend stairs. I believe that the Committee has an obligation to address this very real world problem which is having a very negative impact in stadiums and arenas throughout the country.

TEAGLE: The proposal’s reference to BOCA 1993 Sections 1021.2 Exception #1 does in fact indicate some substantiation for the proposed change. The guard requirement is excessive at 42 in. when considering that the direction of traffic flow is perpendicular to the hazard. Perhaps 20 ft is an excessive height and an eight to ten feet maximum would be more appropriate.

RECOMMENDATION: Add a new Exception No. 2 to 8.3.2.1.6 to read:

Exception No. 2. Proscenium walls shall not be required in smoke protected draught assembly seating facilities constructed and operated in accordance with 8-4.3.

SUBSTANTIATION: Proscenium walls will not be required for stages less than 50 ft in height if Proposal 101-187 (Log #CP604) is accepted. In large facilities such as sports facilities, legitimate stages are frequently used without proscenium walls based on 1-4.4 and the equivalency concept of Section 1-5. This exception would allow moderate sized stages to take advantage of modern protection techniques to protect legitimate stages.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 24
NEGATIVE: 0
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-208 - (8.3.2.1.7): Reject

SUBMITTER: John G. Degenkolb, Carson City, NV

RECOMMENDATION: Revise text to read as follows:

"8-3.2.1.7 Proscenium Opening Protection. Where required by 8-3.2.1.6, the proscenium opening shall be protected by a fire curtain. See NFPA 55, "Theatre Equipment Code", for the installation of Sprinkler Systems. The fire curtain shall be designed..."

SUBSTANTIATION: NFPA 15, Section 5-3.5 Water Curtains references 4-5.3.4 and further requires a discharge of 3 gpm per lineal foot and other details. Section 4-5.3.4 refers to moving stairways, staircases, or similar floor openings and requires that "openings involved shall be protected by closely spaced sprinklers in combination with draft stops." There is an exception "Closely spaced sprinklers and draft stops are not required around large openings such as those found in shopping malls, atrium buildings, and similar structures where all adjoining levels and spaces are protected by automatic sprinklers."

This hardly describes a theater stage. Most auditoriums are not sprinklered. But, most important, the water curtain does nothing to stop the spread of smoke into the auditorium and, in particular, the balcony which will fill with smoke with extreme rapidity.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The proposer’s substantiation is incorrect. NFPA 13 paragraph 4-5.14.1 provides appropriate criteria for the protection of proscenium openings using a deluge-type sprinkler system.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION: AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE: Degenkolb: The committee members who attended the Salt Lake City meeting visited a theater with a legitimate stage having a fire curtain. I believe it was quite evident that, with a fire on the stage and sprinkler protection more than 50 ft above the stage floor, smoke would readily go from the stage out into the auditorium and, in particular, into the balcony. This has happened in the Pantages Theater in Los Angeles. The sprinkler system neither inhibits passage of smoke nor does it hide from the audience the fire on the stage. This could result in panic and in a manner similar to someone shouting FIRE in a crowded theater or room.

RECOMMENDATION: Create a new 8-3.2.1.12 to read as follows:

8-3.2.1.12 Special Provisions for Assembly Occupancies Used for Production of Television, Film, or Video Presentation Before a Proximate Audience. Assembly occupancies used for production of television, film, or video presentation before a proximate audience shall meet the requirements of 8-3.2.1.12.1 through 8-3.2.1.12.4 and other applicable requirements of this chapter.

101-209 - (8.3.2.1.12 (New)): Accept

SUBMITTER: Technical Committee on Assembly and Educational Occupancies.

RECOMMENDATION: Create a new 8-3.2.1.12 to read as follows:

8-3.2.1.12 Special Provisions for Assembly Occupancies Used for Production of Television, Film, or Video Presentation Before a Proximate Audience. Assembly occupancies used for production of television, film, or video presentation before a proximate audience shall meet the requirements of 8-3.2.1.12.1 through 8-3.2.1.12.4 and other applicable requirements of this chapter.

101-209 - (8.3.2.1.12): Accept

NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE: Degenkolb: The committee members who attended the Salt Lake City meeting visited a theater with a legitimate stage having a fire curtain. I believe it was quite evident that, with a fire on the stage and sprinkler protection more than 50 ft above the stage floor, smoke would readily go from the stage out into the auditorium and, in particular, into the balcony. This has happened in the Pantages Theater in Los Angeles. The sprinkler system neither inhibits passage of smoke nor does it hide from the audience the fire on the stage. This could result in panic and in a manner similar to someone shouting FIRE in a crowded theater or room.
8-3.2.1.12.1 Curtains, Scenery and Sets. Stage curtains, scenery and films used to dress sets shall be of noncombustible materials or shall be flame resistant in accordance with NFPA 701, Standard Methods of Fire Tests for Flame-Resistant Textiles and Films. Foam plastics shall be tested in accordance with UL 1975, Standard for Fire Tests for Foamed Plastic Used for Decorative Purposes, and shall have a maximum heat release rate of 100 kW.

8-3.2.1.12.2 Open Flame and Pyrotechnic Devices. Open flame and pyrotechnic devices shall meet the requirements of 8-3.2.5 and 8-3.2.1.

8-3.2.1.12.3 Egress Path. The audience area shall be provided with means of egress arranged so as not to require traversing the production area.

8-3.2.1.12.4 Storage. There shall be no storage, permanent or temporary, in the audience area.

SUBSTANTIATION: Television and film production companies, for example, may go into occupancies not normally used as a place of assembly or not normally used for television and film production activities. The Authority Having Jurisdiction needs a place to look for the special requirements for such usage.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 23
NEGATIVE: 4
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE:
CONNOR: This new section only repeats what is already in the Code.
1. The proposed requirements 8.3.2.1.12.1 and .2 are already in this chapter and are applicable to assembly occupancies with or without TV or motion picture cameras.
2. There is no substantiation for making the production area mutually exclusive of the means of egress. (Does this mean when a talk-show host walks up an aisle to talk to a member of the audience that the aisle can no longer be a part of the means of egress?) Chapters 1 through 6 make clear that a means of egress must be kept clear, etc.
3. I believe that storage is already addressed and that any hazard created by storage is the same with or without cameras present.

101-210 - (8-3.2.3.5(a)(4) and 9-3.2.3.5(a)(4)): Accept
SUBMITTER: Technical Committee on Assembly and Educational Occupancies.
RECOMMENDATION: In 8-3.2.3.3 and 9-3.2.3.3 delete item (a)(4) which reads "rooms containing fuel".
SUBSTANTIATION: The term "rooms containing fuel" is confusing. The subject is adequately addressed by the other subparts of the requirement.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-211 - (8-3.2.6, 9-3.2.6): Accept
SUBMITTER: John G. Degenkolb, Carson City, NV
RECOMMENDATION: Delete all wording after "NFPA 1126, Standard for the Use of Pyrotechnics before a Proximate Audience".
SUBSTANTIATION: The details presently listed under (a), (b), (c), (d), (e), and (f) are to be revised in the NFPA 1126 and need not be repeated in the Life Safety Code.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-212 - (8-3.2.12) Accept
SUBMITTER: John G. Degenkolb, Carson City, NV
RECOMMENDATION: Add new text as follows: 8-3.2.12 Sound Stages Used as Place of Assembly.
8-3.2.12.1 Requirements.
(a) The entire story occupied by the sound stage shall be protected by an approved automatic sprinkler system complying with Section 7-7.
(b) The interior finish of the sound stage, including the sound proofing shall be Class A or B in accordance with Section 6-5.
(c) Fabrics and films used to dress sets; stage curtains and combustible set construction, shall be of noncombustible materials or shall be flame retardant treated to meet the requirements of NFPA 701 (fabrics and films treated with a flame retardant treatment of wood). Foam plastics shall be tested in accordance with UL 1975, Standard for Fire Tests for Foamed Plastic Used for Decorative Purposes and shall have a maximum heat release rate of 100 kW.
(d) The use of open flame shall be prohibited except as authorized by the authority having jurisdiction in accordance with Section 8-3.2.5.
(e) Pyrotechnic special effects complying with the provisions of Section 8-3.2.5 shall be permitted when authorized by a written permit issued by the authority having jurisdiction.
(f) The maximum number of persons permitted as an audience shall be 300. Sound stages in buildings of Type I or II construction may exceed 300 persons when so authorized by the authority having jurisdiction as the result of added safety precautions established by the authority having jurisdiction.
(g) The use of Liquified Petroleum Gas (LP-G) shall be prohibited.
(h) The authority having jurisdiction shall have the authority to permit a limited use but shall limit the size of the containers to those having a water capacity of not more than 12 lbs and not to exceed two cylinders when the personnel employed in the handling of the LP-G are trained in the proper handling and operating procedures.
(i) Portable microphone type used to talk to audience members shall be of the cordless type.
(j) Electrical wiring of the entire sound stage shall comply with NFPA 70, National Electrical Code, Article 520.
(k) Except as noted heretofore, other provisions of Chapter 8 and 9 of NFPA 101 shall be applicable.

SUBSTANTIATION: NFPA 140 does not provide guidance for sound stages used for audience type programs being filmed or taped and is leaving requirements for such usage to NFPA 101. While many of the requirements of Section 5-2.1.2 are applicable to sound stages with an audience, some are not, for example accessory rooms (8-3.2.1.4); Ventilators (8-3.2.1.5); proscenium walls (8-3.2.1.6); proscenium opening protection (8-3.2.1.7); gridiron, fly galleries, and pinrails (8-3.2.1.10).

COMMITTEE ACTION: Accept in Principle.

See Proposal 101-209 (Log #CP605).

COMMITTEE STATEMENT: Although the submitter has not substantiated the need for special requirements for audience sound stages, special provisions are being added for assembly occupancies used for production of television, film or video presentations before a proximate audience by the referenced proposal. The majority of the subjects addressed by the submitter are covered by the proposed changes. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-213 - (8.3.2.12) (New): Accept in Principle
SUBMITTER: Paul A. Westerfield, Alliance of Motion Picture and Television Producers
RECOMMENDATION: John G. Degenkolb has proposed the addition of new text to be numbered 8-3.2.12 Sound Stages Used as a Place of Assembly. I recommend that the proposal be rejected.

SUBSTANTIATION: While some of the requirements proposed by Mr. Degenkolb may have merit and may warrant study, such study has not been done and no statement of Problem or Substantiation for Comment has been submitted.

There is no definition of Sound Stages in NFPA 101. Many of the proposed requirements pertain to subject matter already covered elsewhere in the NFPA 101 Life Safety Code, especially in Chapters 8 and 9.

Here are additional comments which I would like considered if Mr. Degenkolb's specific requirements are discussed.

a. Chapter 8 requires that every stage and contiguous accessory space be protected by an approved automatic sprinkler system, with certain exceptions. Mr. Degenkolb wants to extend this to "the entire story occupied by the sound stage" and does not mention
exceptions. The language of proposal is vague. Section 8.3.2.1.9 Fire Protection adequately covers the subject. Most audience sound stages in studios are sprinklered.

b. I do not find any specific reference to sound proofing, but Chapter 6, Section 65, of the Code covers the subject of Interior Finish.

c. Section 8.3.2.1.10 Flame-Retardant Requirements already covers the subject matter of item c.

d. Section 8.3.2.5 Open Flame Devices already covers the subject matter of item d.

e. Section 8.3.2.5 does not require "a written permit issued by the authority having jurisdiction." The authority having jurisdiction may be reluctant to issue a written permit on the basis of potential liability. The proposal does not state the form or language of the permit.

f. Chapter 8, in various sections, establishes the requirements for places of assembly based on occupant load. There is no need to establish special requirements for sound stages. There is no justification whatsoever for limiting audiences on a sound stage to 300 persons.

Most sound stage audience areas are limited to 300 persons, since that is the dividing line between a Class C and a Class B occupancy. There are some sound stages which accommodate and have audiences of more than 300 persons.

g. I don't know why Mr. Degenkolb proposes to prohibit, with some exceptions, the use of Liquefied Petroleum Gas (LPG) specifically. If flammable liquids and flammable gases are to be addressed, they should be addressed.

The new Special Effects committee under Mr. Renfrew is to develop a standard for the use of such liquids and gases before a proximate audience.

The Committee should Reject the present proposal on the basis that it addresses only one element of the issue of flammable liquids and flammable gases.

b. This proposal has four parts: First, Mr. Degenkolb proposes that "in the absence of a proscenium wall or curtain, there is to be assumed an invisible barrier at the front of the seating area." He does not state what he intends to follow from this assumption.

Section 8.3.2.1.6 Proscenium Walls begins with the words, "Legitimate stages shall be..." By definition our sound stages are not legitimate stages.

Second, Mr. Degenkolb proposes the seating area is to have an "independent" means of egress. The Committee should Reject this proposal on the basis that MEANS OF EGRESS REQUIREMENTS are dealt with extensively under Section 8.2.

Third, Mr. Degenkolb proposes that there be no storage in the audience area. The Committee should Reject this proposal on the basis that Storage Facilities are dealt with under Section 8.3.3.3, Section 8.3.2.4 and related language under Section 8.2.

Fourth, Mr. Degenkolb proposes that the only lighting above the audience area be "of the permanent house lighting type." There is a problem of definition with this what is permanent? Even in legitimate theaters very few lights can be considered "permanent." The platform or rail to which the light is affixed may be permanent, but the lights themselves are configured as required by the production. I cannot find anywhere in NFPA 101 addresses lighting except for emergency lighting and emergency lighting. Studios do not usually place lights above the audience area for a variety of reasons.

i. Mr. Degenkolb proposes that portable microphones used to talk to audience members be of the cordless type. I checked this out with members of the AMPTF Frequency Coordinating Committee. Almost all portable microphones now are cordless. There is no Substantiation of a reason for this proposal. The Committee should Reject this proposal on the basis that there is no demonstrated need and no practice of using corded portable microphones.

j. NFPA 70, National Electrical Code, Article 520, at 520.1 describes the Scope of the Article with regard to Theaters, Audience Areas of Motion Pictures and Television Studios, and Similar Locations. Chapter 8 of NFPA 101 does not quote Article 520 or incorporate it by reference. While incorporating Article 520 by reference, without changing the Scope, would not create a problem, why do so only for sound stages?

k. Mr. Degenkolb ends by saying except as noted heretofore (sic) other provisions of Chapters 8 and 9 are applicable. Gus's proposals are for Chapter 8 New Assembly Occupancies, not Chapter 9 Existing Assembly Occupancies.

COMMITTEE ACTION: Accept in Principle.

See the Committee Action on Proposal 101-212 (Log #144).

COMMITTEE STATEMENT: The Committee Action on the referenced proposal should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 3 Landry, Lattey and Wertheimer

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with the Committee that in large assembly occupancies such as exhibition halls, and stadiums, (greater than 1,000) the notification is not as critical because these occupancies generally employ competent and trained personnel that are in constant attendance during activities. If an alarm were to activate, appropriate action by building staff would probably be taken. In smaller assembly occupancies, however, such as juice bars, dance clubs, night clubs, smaller theaters (movie or live), indoor play areas staff often consists of inexperienced, younger (frequently high school age) employees. Most often than not, when an alarm is activated in the smaller assembly occupancies, the employees will investigate the cause of the alarm instead of initiating evacuation procedures. Owners or employees frequently do not want to interrupt the entertainment, and will investigate the cause. In the event the cause is in fact a fire, injury or death could occur as a result of this delay in initiating evacuation. At the MGM Grand Hotel, heavy smoke forced switchboard operators from their posts and they were only able to make one announcement over the public address system to evacuate the casino area...and this was done ten minutes after the fire was first discovered. Due to this rapid early evacuation of the telephone staff, (hotel) guests were not alerted by the hotel public address system or the local fire alarm system. With the addition of visible signals, we regain the purpose of an alarm system, which is to provide occupant notification at a point which allows ideal evacuation times. As the Code reads, now we are depending on human behavior to initiate evacuation in lieu of an automatic mechanical system. And as seen with the MGM Grand, the human factor failed. Throughout the codes for sprinklers, water supply, special extinguishing systems, automatic is a required criteria for appropriate response. At maximum, allow the choice to require visible signals if he/she deems it necessary, fusing his/her decision on training and mastery levels of staff.

COMMITTEE STATEMENT: The proposer has not defined what constitutes exterior spaces. The subject is better handled by not changing the Code text and rejecting on a case by case judgment by the Authority Having Jurisdiction.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF VIOLATION:
TEAGUE: To reject the proposal based on the lack of a definition of an exterior space seems arbitrary. The code referencing enclosed spaces is just as unclear. It would seem logical that if an enclosed space could be identified then an exterior space would be defined as a vacant occupied area. Too, opening open concourses and ramps/stairs in outdoor assembly occupancies (smoke protected) seems excessive. The logic of letting the authority having jurisdiction make a judgment would not be compromised with the addition of the exception proposed.

(101-219 - (8.4.3.1(a) Exception): Accept in Principle
SUBMITTER: Gregory R. Miller, Code Consultants Incorporated
RECOMMENDATION: In the Exception to (a), retain present wording and add new text as follows:
"With submission of an engineering analysis employing fire modeling to substantiate and demonstrate the ineffectiveness of the sprinkler protection due to building height and combustible loading, sprinklers shall be permitted to be omitted over the floor area used for contest, performance, or entertainment and over the seating area.

SUBSTANTIATION: Sufficient fire modeling analysis tools are now available that indicate that even with ordinary hazard classification, that sprinklers due to their excessive height over a fire condition will not activate.

COMMITTEE ACTION: Accept in Principle.
Add a second Exception to 8.4.5.1.(a) to read:
Exception No. 2: Sprinklers shall be permitted to be omitted over the floor area used for contest, performance, or entertainment and over the seating area where an approved engineering analysis substantiates the ineffectiveness of the sprinkler protection due to building height and combustible loading.
Add an associated appendix item to read:
A-8.4.3.1 Exception No. 2 to (a) The engineering analysis should be part of the life safety evaluation required by 8.4.5.

COMMITTEE STATEMENT: The above Committee Action accommodates that which the submitter requested but does so using different language. This should meet the submitter's intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 3 Landry, Lattey and Wertheimer

COMMITTEE STATEMENT: See Proposal 101-188 (Log #CP601) that deletes the Class A, Class B, and Class C assembly sub-classifications. Also see Proposals 101-24 (Log #CP618) and 101-186 (Log #CP619) which revise the 4.2 definition of assembly occupancies and the 8.1.3.9-1.3 definitions of special amusement buildings.
COMMITTEE STATEMENT: The actions on the referenced proposals should accomplish the submitter's intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer
Exception: Exit marking shall not be required on the seating side of vomitories or openings into seating areas when exit marking is provided in the concourse readily apparent from the vomitories and sufficient exit lighting is provided to identify each vomitory or opening within the seating area in an emergency. Illumination of the vomitory or opening during an emergency, proximity of the seating to the vomitory or opening, familiarity with the vomitory or opening during the entrance and subsequent trips into the seating bowl along with exit marking from the vomitory or opening would reduce the tendency to tamper with exit marking and maintain the intent of exit marking.

COMMITTEE ACTION: Accept in Principle.

COMMITTEE STATEMENT: It appears that the submitter intended to address 8-2.10 rather than 8-4.6.4.1. The wording shown in the Committee Action should accomplish the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE:
BARTLETT: The Committee's Action does not provide sufficient protection occupants of special amusement multi-level play structures. The need for early warning detection and notification is present for occupants of these types of structures regardless of the levels of lighting present in the structure. Miller: I am voting negatively on Log #344 against the Committee's Action to accept in principle for the following reasons:
1. I do not believe that there has even been demonstrated any type of need or cause for concern for life safety in multi-level play structures.
2. I believe that the exceptions to 8-4.6.2 and 9-4.6.2 for sprinkler protection based on the criteria of 9 feet and 160 square feet are without substantiation or basis.

EXPLANATION OFaffe:
BARTLETT: The Committee's Action does not provide sufficient protection occupants of special amusement multi-level play structures. The need for early warning detection and notification is present for occupants of these types of structures regardless of the levels of lighting present in the structure. Miller: I am voting negatively on Log #344 against the Committee's Action to accept in principle for the following reasons:
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EXPLANATION OF квартир:
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EXPLANATION OF Democrat:
BARTLETT: The Committee's Action does not provide sufficient protection occupants of special amusement multi-level play structures. The need for early warning detection and notification is present for occupants of these types of structures regardless of the levels of lighting present in the structure. Miller: I am voting negatively on Log #344 against the Committee's Action to accept in principle for the following reasons:
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EXPLANATION OF Republican:
BARTLETT: The Committee's Action does not provide sufficient protection occupants of special amusement multi-level play structures. The need for early warning detection and notification is present for occupants of these types of structures regardless of the levels of lighting present in the structure. Miller: I am voting negatively on Log #344 against the Committee's Action to accept in principle for the following reasons:
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1. I do not believe that there has even been demonstrated any type of need or cause for concern for life safety in multi-level play structures.
2. I believe that the exceptions to 8-4.6.2 and 9-4.6.2 for sprinkler protection based on the criteria of 9 feet and 160 square feet are without substantiation or basis.
COMMITTEE ACTION: Accept.
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-224 - (9-3.3.5) (New): Reject
SUBMITTER: Jack Poole, Poole Fire Protection Engineering, Inc.
RECOMMENDATION: Add a 9-3.3.5 as follows:

COMMITTEE STATEMENT: The proposer has provided no substantiation for regulating interior floor finish throughout Class A and Class B assembly occupancies. Traditionally, interior floor finish has been regulated only within corridors and exits which are defined as Class I or Class II.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The proposer has provided no substantiation for regulating interior floor finish throughout Class A and Class B assembly occupancies. Traditionally, interior floor finish has been regulated only within corridors and exits which are defined as Class I or Class II.

COMMITTEE ACTION: Reject.

SUBSTANTIATION: The floor finish in assembly occupancies should provide a higher level of protection, due to the occupant load.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The proposer has provided no substantiation for regulating interior floor finish throughout Class A and Class B assembly occupancies. Traditionally, interior floor finish has been regulated only within corridors and exits which are defined as Class I or Class II.

COMMITTEE ACTION: Reject.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-225 - (9-4.3.3): Accept in Principle
SUBMITTER: Gregory J. Cahanin, Exit Seminars
RECOMMENDATION: Add a new sentence to 9-4.3.3 to read:

"Existing and previous approved grandstands shall be permitted to continue in use."

COMMITTEE STATEMENT: The current Section 9-4.3.3 references NFPA 102 for the requirements for grandstands. The 1994 edition of NFPA 102 does not address existing or portable installed grandstands. Provisions in the recent edition of NFPA 102 would make existing or portable grandstands non compliant such as the minimum clearances for openings (4 inches) make this change necessary. Existing facilities could have stepping configurations that could be different from current NFPA 102 requirements.

COMMITTEE ACTION: Accept in Principle.

Add a new sentence to 9-4.3.3 to read: "Existing grandstands shall be permitted to continue in use subject to approval of the Authority Having Jurisdiction."

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-226 - (10-1.3 Separate Means of Egress, 11-1.3 Separate Means of Egress): Accept
SUBMITTER: James Lathrop, Koffel Associates, Inc.
RECOMMENDATION: In 10-1.3, and 11-1.3 delete the definition of "Separate Means of Egress" and substitute with the following:

"Separate Means of Egress" means the means of egress that are designed and commissioned to meet the requirements of Chapter 5. A separate means of egress shall be provided for each of the means of egress in accordance with the limitations and conditions of Chapter 5.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-227 - (10-2.2.8, 11-2.2.8, 10-2.2.9, 11-2.2.9): Accept
SUBMITTER: James Lathrop, Koffel Associates, Inc.
RECOMMENDATION: Add a new 10-2.2.8/11-2.2.8 to read:

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-228 - (10-2.2.9 and 11-2.2.9): Accept
SUBMITTER: Technical Committee on Assembly and Educational Occupancies,
RECOMMENDATION: Add a new 10-2.2.9 and 11-2.2.9 to read:

"Elevators. Elevators complying with 5-2.15 shall be permitted."

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-229 - (10-3.2.3 and 11-3.2.3): Delete
COMMITTEE ACTION: Delete Sections 10-3.2.3 and 11-3.2.3.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-230 - (10-3.2.1 (a) (5), 11-3.2.1(a) (5) (New)): Accept
SUBMITTER: Technical Committee on Assembly and Educational Occupancies,
RECOMMENDATION: In 10-3.2.1 and 11-3.2.1 delete item (a) (4) which reads "rooms containing fuel." Add an alternative (a) (5) as follows:

"The term "rooms containing fuel" is confusing. The subject is adequately addressed by the other subparts of the requirement."

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-231 - (10-3.2.1 (a) (4) and 11-3.2.1 (a) (4)): Accept
SUBMITTER: Technical Committee on Assembly and Educational Occupancies,
RECOMMENDATION: In 10-3.2.1 and 11-3.2.1 delete item (a) (4) which reads "rooms containing fuel." Add an alternative (a) (5) as follows:

"The term "rooms containing fuel" is confusing. The subject is adequately addressed by the other subparts of the requirement."

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-232 - (10-3.2.1 (a) (5), 11-3.2.1 (a) (5) (New)): Accept
SUBMITTER: Richard Drzownikowski, Connecticut Office of State Fire Marshal
RECOMMENDATION: Add:

(5) Janitor closets.

Exception to (5): Janitor closets protected by automatic sprinklers shall be permitted to have doors with ventilating louvers.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-233 - (10-3.2.1 (a) (5), 11-3.2.1 (a) (5) (New)): Accept
SUBMITTER: Richard Drzownikowski, Connecticut Office of State Fire Marshal
RECOMMENDATION: Add:

(5) Janitor closets.

Exception to (5): Janitor closets protected by automatic sprinklers shall be permitted to have doors with ventilating louvers.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NEGATIVE: 1
NOT RETURNED: 3 Landry, Lattey and Wertheimer
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EXPLANATION OF NEGATIVE:
DEGENKOLB: NFPA 80, Section 2-8.4 states: "Only labeled fire doors shall be permitted to open onto a corridor. If the corridor walls are fire-rated, labeled fire doors are required. I would suggest a rewording: "Janitor closets protected by automatic sprinklers shall be permitted to have doors which are not fire doors, with ventilating louvers."

101-251 - (10-3.4.2.3 (New)): Accept in Principle
Note: The Technical Correlating Committee on Safety to Life (TCC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Building Service and Fire Protection Equipment (BSF), which has primary responsibility for the provisions of Chapter 7 including those applicable to alarm systems, offer information on the acceptability of exempting manual pull stations, in entirety, from assembly occupancies if specific conditions are met. BSF is asked to correlate the proposed action on this proposal with that taken on Proposal 101-153.

SUBMITTER: Ben B. Aycock, North Carolina Building Inspectors' Assn.
RECOMMENDATION: Add a new paragraph as follows:
10-3.4.2.3 Alternative Protection System. In order to reduce false alarms, manual pull boxes shall be permitted to be eliminated when all of the following conditions apply:
(a) Interior corridors are protected by smoke detectors using an alarm verification system as described in NFPA 72, National Fire Alarm Code.
(b) Auditoriums, cafeterias, gymnasiums, etc., are protected by heat or other appropriate detection devices.
(c) Shops and laboratories involving dusts or vapors are protected by heat or other appropriate detection devices; however, it is not necessary to protect ordinary lecture type classrooms.
(d) Fire alarm signals are automatically transmitted to the public fire department, either directly or via an approved Central Station as described in NFPA 72, National Fire Alarm Code.
(e) Provision is made at a central point to manually activate the evacuation signal, or to evacuate only affected areas.
SUBSTANTIATION: Many public and private schools have experienced problems with malicious false alarms as well as vandalism and destruction of the manual alarm boxes. Present Section 10-3.4.2.1, requires the manual boxes but the exception allows elimination of the boxes provided a two-way voice communication system is provided. Typical installation practice is an unsupervised "intercom" system which does not meet NFPA 72, National Fire Alarm Code requirements for a "Voice Alarm System". As it stands today, many of the public schools are being used for evening classes when the administrative offices are closed. Thus the intercom "panel" is unmanned.
The proposed change would reduce the false alarm problem and at the same time provide full time automatic notification to the Fire Department.
COMMITTEE ACTION: Accept in Principle.
Add a new paragraph as follows:
10-3.4.2.3 Alternative Protection System. Manual pull stations shall be permitted to be eliminated when all of the following conditions apply:
(a) Interior corridors are protected by smoke detectors using an alarm verification system as described in NFPA 72, National Fire Alarm Code.
(b) Auditoriums, cafeterias, gymnasiums, etc., are protected by heat or other approved detection devices.
(c) Shops and laboratories involving dusts or vapors are protected by heat or other approved detection devices.
(d) Fire alarm signals are automatically transmitted to the public fire department, either directly or via an approved Central Station as described in NFPA 72, National Fire Alarm Code.
(e) Provision is made at a central point to manually activate the evacuation signal, or to evacuate only affected areas.
Add an Exception No. 2 to 10-3.4.2.1 to read:
Exception No. 2: As permitted by 10-3.4.2.3.
COMMITTEE STATEMENT: The Committee action makes minor changes to the submitter's recommended language. This presents an improvement. The proposed Exception No. 2 to 10-3.4.2.1 provides the necessary link to permit 10-3.4.2.3 to provide an alternative to the requirement of 10-3.4.2.1. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
ACCEPT: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-232 - (10-3.4.3.1): Accept
SUBMITTER: Martin H. Reis, Rolf Jensen & Associates, Inc.
RECOMMENDATION: Change "an audible alarm" to "audible and visible signals".
SUBSTANTIATION: This is necessary to comply with 7-6.3.4 requiring both audible and visible signals.
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
ACCEPT: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-233- (10-3.6): Reject
SUBMITTER: Daniel F. Dykstra, Michigan State Police-Fire Marshal Division
RECOMMENDATION: Revise text to read as follows:
"Every interior corridor shall be separated from use areas by fire barriers having a fire resistance rating of at least 1 hr in accordance with Section 6-2.3."
SUBSTANTIATION: This office has historically required separation between exit corridors and all use areas, even though the previous wording in Section 10-3.6 has not specifically indicated this. It is the opinion of this office that maintaining a clear, unobstructed exit corridor is more critical in a K-12 building than in a college. The proposed wording reflects the wording of Section 25-3.6, which is substantially clearer than 10-3.6.
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The proposer's language would no longer permit items or uses within the corridor. This is not the Committee's intent. The proposer has not substantiated why the Code should be made more stringent with respect to this subject.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
ACCEPT: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

101-234 - (10-3.6 and Exception No. 4; 11-3.6 and Exception No. 4):
ACCEPT
SUBMITTER: Technical Committee on Assembly and Educational Occupancies
COMMITTEE ACTION: Revise 10-3.6 to read: 10-3.6 Interior Corridors. Corridors shall be separated from other parts of the floor by walls having a 1-hour fire resistance rating in accordance with 6-2.3. Retain current Exceptions No. 1, 2 and 3 to 10-3.6. Revise current Exception No. 4 to 10-3.6 to read: "... from all other spaces by walls having not less than ..." Revise 11-3.6 to read: 11-3.6 Interior Corridors. Corridors shall be separated from other parts of the floor by walls having a 1-hour fire resistance rating in accordance with 6-2.3. Retain current Exceptions No. 1, 2 and 3 to 11-3.6. Revise current Exception No. 4 to 11-3.6 to read: "... from all other spaces by walls having not less than ..." SUBSTANTIATION: Clarification that corridor walls are intended to separate the corridor from other parts of the floor. There is no intent to require fire resistance-rated floor or fire resistance-rated ceiling construction as the separation between the corridor and other floors of the building in occupancies where building construction type is not specified (i.e., "No Requirement" in the 1-6 subsection).
COMMITTEE ACTION: Accept.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27
VOTE ON COMMITTEE ACTION:
ACCEPT: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer
critical if this fire safety concept is to have any chance of success. However, the Chair of the Task Force states, "As a fire inspector I can personally attest to the extreme difficulty in enforcing staff-client ratios." That task can only be more difficult now that the information on staff-to-client ratios previously in Section 10-7.1.1.1 has been moved to Section A 10-7.1.1.1 in the non-mandatory appendix.

The December 15, 1993, letter mentions a survey sent to the majority of states. If found that most state agencies regulating day-care have established staff-to-client ratios. The letter states, "Therefore our ratios were a duplicate effort." This is not supported by information in the book Child Care Safety by Ted S. Perry, published in 1993 by the American Society of Safety Engineers. Page 23 of this book includes the statement, "Not every state has a limiting ratio; only 20 states and the District of Columbia fix group size per center for all ages of children. This book indicates one state will permit a single staff member to care for 12 infants. Other states permit a 1:20 ratio for one-year olds and a 1:35 ratio for three-year olds. Evacuating this many children from a burning building would be a formidable task for a trained firefighter. It would be even more challenging for the often inexperienced staff member of a day-care center. Uncertainties associated with the staff's ability to evacuate the children are consistent with the substantiation for item 101-400 in the 1993 Fall Meeting Technical Committee Reports. That substantiation was accepted in principle and led to the recent changes. It states, "The theory of staff ratios should be replaced with more stringent construction/protection." Paradoxically, the protection requirements were reduced for day-care centers in the most combustible types of construction where NFPA statistics indicate most day-care center fires occur. [Memo from Alison Miller to Ron Cote date 9/11/91 provided with referenced portions underlined.]

The Chair of the Task Force acknowledges that the sprinkler requirements for these types of construction may be more lenient than in past editions. She indicates this is partially justified by "early notification from the required fire alarm system..." It should be noted that this system might only have the capability for manually activation. Automatic fire detection throughout all portions of the building is not required. Therefore, early notification might not be provided.

The fire record in day-care centers has generally been good. The current Life Safety Code Handbook states, "Day-care properties averaged 500 structure fires a year reported to U.S. fire departments in 1984-1988; with an associated 5 civilian injuries a year and no deaths." The protection requirements my proposal will reestablish had been in place 11 years before, and throughout, that period. Undoubtedly the previous requirements contributed to the lack of fatalities and low injury rate during that time period. The Committee did not provide any estimates on how deleting those requirements from the 1994 edition will effect the future numbers of children injured or killed in such fires. Hopefully it won't take a tragic event to demonstrate the protection of the most vulnerable age groups, in the most combustible types of building construction, need to be reestablished.

NOTE: Supporting material is available for review at NFPA Headquarters.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The package of changes made to the day-center requirements for the 1994 edition of the Life Safety Code represents a Committee consensus. It provides the minimum level of safety the Code intends to provide. The submitter wants a greater minimum level of safety that the Committee does not believe is justified. The submitter proposed the same change during the last Code revision cycle and pursued the issue through the Report on Comments, a motion on the floor at the 1993 Fall Meeting, a complaint to the NFPA Standards Council, and appeals to the NFPA Board of Directors and the ANSI Standards Board. In each case the Committee Action was upheld. See the record of these events.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 23
NEGATIVE: 4

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

EXPLANATION OF NEGATIVE:
DEGENKOLB: To begin with, this proposal ONLY affects day-care centers of Type III (200) and Type V (000) buildings containing day-care centers with clients less than 72 months in age shall be protected throughout by an approved automatic sprinkler system.

STANDARD: Table 10-7.1.6.1 in the 1994 edition of the Life Safety Code now makes it possible to have an unlimited number of children, including infants and toddlers, in Type III (200) and Type V (000) buildings without fire sprinkler protection. This dangerous condition was prohibited by six previous editions of the Code that were in effect for more than twenty years. This new Section 10-7.3.2.1 will restore the previous level of safety.

I have provided a December 15, 1993, letter written by the Chair of the Day Care Task Force of the Technical Committee on Assembly and Educational Occupancies. The letter was written to support and summarize the major changes that appear in the code. It states that children under the age of 24 months are incapable of self-preservation and can only evacuate a building if they are carried or led out by the hand. Of course, during the short time available to evacuate a fire in a combustible structure without sprinkler protection, each staff member can only be expected to carry or lead a small number of infants or toddlers. Staff-to-client ratios are:

AFFIRMATIVE: 24
NOT RETURNED: 3 Landry, Lattey and Wertheimer

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bulldings, nor do I find where open plan buildings are permitted for day-care centers. At the Portland meeting I was informed that open plan day-care centers are common. “Open plan buildings have rooms and corridors delineated by tables, chairs, bookcases, counters, low-height (5 ft) partitions or similar furnishings.” There is no requirement that they be fixed in place. There need be no corridors as we conventionally think of them.

While a day-care center is one serving more than 12 clients, there could be many more. At a meeting in the office of the California State Fire Marshal, mention was made of day-care facilities accommodating 200 clients. It was also acknowledged that there could be a far greater number and the number of 400 was heard. A considerable number of the clients could have the age of 24 months and so would require considerable help in leaving the premises.

The proposed change would reduce the false alarm problem and at the same time provide full time automatic notification to the Fire Department.

**COMMITTEE ACTION:** Accept in Principle.

Add a new paragraph as follows: 11-3.4.2.3 Alternative Protection System. Manual pull stations shall be permitted to be eliminated when all of the following conditions apply:

1. Interior corridors are protected by smoke detectors using an alarm verification system as described in NFPA 72, National Fire Alarm Code.
2. Auditoriums, cafeterias, gymnasiums, etc., are protected by heat or other approved detection devices.
3. Shops and laboratories involving dusts or vapors are protected by heat or other approved detection devices.
4. Fire alarm signals are automatically transmitted to the public fire department, either directly or via an approved Central Station as described in NFPA 72, National Fire Alarm Code.
5. Provision is made at a central point to manually activate the evacuation signal, or to evacuate only affected areas.

Add an Exception No. 2 to 11-3.4.2.1 to read: Exception No. 2: As permitted by 11-3.4.2.3.

**COMMITTEE STATEMENT:** The Committee Action makes minor changes to the submitter’s recommended language. This presents an improvement. The proposed Exception No. 2 to 11-3.4.2.1 provides the necessary link to permit 11-3.4.2.3 to provide an alternative to the requirement of 11-3.4.2.1. This should meet the submitter’s intent.

**NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE:** 27

**VOTE ON COMMITTEE ACTION:**

**AFFIRMATIVE:** 24

**NOT RETURNED:** 3 Landry, Lattey and Wertheimer
SUBSTANTIATION: This section does not clearly define to what extent a fire alarm system is required. Day care centers are being incorporated into many other types of occupancies. Some of these occupancies do not require a fire alarm system. Therefore a clarification is to the scope of application is needed to define if it is the day care center or the entire facility and which buildings are included. Proposed clarifications are similar to those which limit single exit discharge and are logical due to the problems associated with egressing small children or mobility impaired adults.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The current Code requirement clearly states the Committee’s intent. There is insufficient justification for relaxing the current Code requirement.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 27

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 24

NOT RETURNED: 3 Landry, Lattey and Wertheimer

HEA

101-242 - (Chapters 12 and 15): Reject

SUBMITTER: Walter Smite III, Charleston, WV 25305

RECOMMENDATION: Establish a new subsection of Chapter 12 and Chapter 15 for “Rural Health Care and Birthing Clinics.”

Proposed wording is as follows:

Rural Health Care and Birthing Center Facilities

Definitions:

Primary Care: Medical care and services at the point when a person first seeks assistance from the health care system for the simpler and more common illnesses, and which takes ongoing responsibility for the recipient’s health maintenance and illness.

Rural Health/Non-Ambulatory Facility Center: A health care facility which provides primary or secondary patient care and as such, must meet the requirements for the safety of all occupants while in the building emergency patient treatment/stabilization.

Birthing/Non-Ambulatory Facility Center: A health care facility which provides obstetrical/emergency patient care for three or less patients who are not capable of taking action for self-preservation under emergency conditions without assistance. A facility which provides patient care for three or more patients requires compliance with Life Safety Code, Ambulatory Health Care.

Secondary Care: Medical care and services provided by medical specialists/subspecialists, by cardiologists or neurosurgeons, usually upon referral or consultation.

Self-Preservation: Patients and other occupants of the facility must be capable of removing themselves from the facility with limited assistance, either physical or verbal, in an emergency such as a fire.

Minimum Construction Requirements

A. No new facility shall be constructed of unprotected wood frame construction [Type V (000)].
B. New construction shall meet the requirements of a nationally recognized building code for height and area limitations.
C. Existing unprotected wood frame construction [Type V (000)] will be accepted with a fully automatic sprinkler system installed in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems.

Automatic Sprinkler Systems:

Design and installation shall be in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems.

Occupant Load:

Occupant load calculation will be one person per 100 square feet of gross floor area.

A. No birthing/non-ambulatory care rooms will be located above the level of exit discharge.
B. There will be no more than 3 birthing/non-ambulatory care patients in any one facility.

Means of Egress Requirements:

Every aisle, passageway, corridor, exit discharge, exit location, and access shall be in accordance with NFPA 101, Life Safety Code, Means of Egress Requirements, and as modified by this rule.

Number of Exits:

There shall be not less than two remote exits provided from each floor.

Corridors:

A. No dead end corridor shall exceed 20 feet.
B. Travel distance to an exit shall not exceed 150 feet in a non-sprinklered building or 200 feet in a sprinklered building.

Corridor Construction:

Corridors shall be of smoke tight construction.

Corridor Width:

A. All corridors on birthing/non-ambulatory care floors shall be a minimum of 6 feet in clear width.
6. These facilities are needed and can be implemented economically with reasonable fire and life safety requirements for the protection of property from fire.

Currently in our State, numerous facilities are being contemplated and several are operational at this time. Compliance to these requirements are most favorable and reasonable.

COMMITTEE ACTION: Rejct.

COMMITTEE STATEMENT: See Proposal 101 - 17 (Log #CP650) which explains that birth centers, as defined in the proposed Chapter 3 definition, should be addressed as business occupancies and not health care occupancies.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16

NOT RETURNED: 2 Carson, Deal

101-245 - (Chapters 12 and 13): Rejct

SUBMITTER: Leo G. Foxwell, ITT Hartford

RECOMMENDATION: Leo G. Foxwell, ITT Hartford

Chapter 10 Definition, should be addressed as business occupancies and not health care occupancies.

RECOMMENDATION:

1. Revise the definition of Hospital as follows: (The words underlined are accent for reference purposes only.)

   Hospital Facility. A building or part thereof equipped to perform surgical and exploratory procedures and used for the medical, psychiatric, obstetrical, or surgical care of patients on a 24-hour basis. Treatment and/or procedures may render the patient incapable of taking action for self-preservation under emergency conditions. Anesthesia and ventilation support are provided. Hospital Facility, wherever used in this standard, includes general and specialty hospitals, mental hospitals, tuberculosis hospitals, children's hospitals, and any such facilities providing inpatient care. (ES, PS)

2. Revise and reissue the definition of Ambulatory Health Care Center as follows: (The words underlined are additions and are accent for reference purposes only.)

   Ambulatory Health Care Facility - Major. A building or part thereof used to provide services or treatment to four or more patients at the same time and meeting either (a) or (b) below. Such facilities are not designed to provide overnight stays for patients.

   (a) Those facilities that provide, on an outpatient basis, treatment and procedures for patients that would render them incapable of taking action for self-preservation under emergency conditions without assistance from others. Examples include but are not restricted to hemodialysis units or freestanding emergency medical units.

   (b) Those facilities that provide, on an outpatient basis, surgical treatment and procedures for patients that would render them incapable of taking action for self-preservation under emergency conditions without assistance from others. This includes all facilities in which a patient is subjected to deep sedation or anesthesia. Examples include but are not restricted to Urgi-care centers, Day surgical centers, Orthopedic practice, and Plastic surgery offices where patients are sedated with gas. (EE, PS)

3. Revise and reissue the definition of Nursing Home as follows: (The words underlined are additions and are accent for reference purposes only.)

   Nursing Care Facility. A building or part therefore used to provide medical and nursing care for patients on a 24-hour basis. On four or more persons who, because of mental or physical incapacity, may be unable to provide for their own needs and safety without the assistance of another person. This includes ventilator dependent patients and those providing long term personal medical care. No treatments or gas analgesia or anesthesia are provided. Nursing care facility, wherever used in this document, includes rehabilitation hospitals, nursing and convalescent homes, skilled nursing facilities, intermediate care facilities, and infirmaries in homes for the aged that provide long term ventilator support. (EE, PS)

4. Revise in its entirety the definition of Clinic as follows:

   Clinic. A building or part therefore used to provide multiple medical services and treatment to four or more patients at one time where patients are seen on an ambulatory basis. Such facilities are not designed to provide overnight stays for patients. The facility provides treatment and procedures for patients that would not render them incapable of taking action or self-preservation under emergency conditions. Patients are treated for chronic and not acute medical care. (TC, PS)

5. Revise the definition of Limited Care Facility as follows: (The words underlined are accent for reference purposes only.)

   Assisted Living Facility. A building or part therefore based on a 24-hour basis for the housing of four or more persons who are incapable of self-preservation because of age, physical limitation due to accident or illness, or mental limitations such as mental retardation/developmental disability, mental illness, or chemical dependency. Such facilities do not perform invasive procedures or use anesthesia or analgesics. Respiratory support is limited to non-invasive techniques. Examples include: Dental Care Facility, Medical Care Facility, immediate care facility and podiatry office. Veterinary facilities also are included in this category.

6. Add a new definition for Ambulatory Care Facility - Minor, as follows:

   Ambulatory Care Facility - Minor. A facility that performs examinations and minor treatments/procedures under the continuous supervision of a medical/dental professional. Procedures involve only conscious sedation or local anesthesia and treatments and/or procedures do not render the patient incapable of taking action for self-preservation under emergency conditions. Such facilities do not provide overnight stays for patients or provide 24 hr/day operation. Examples include: Dental Care Facility, Medical Care Facility, limited care facility and podiatry office.

COMMITTEE ACTION: Rejct.

COMMITTEE STATEMENT: The wording suggested by the submitter would make major changes that would go much further than coordinating definitions between NFPA 101 and NFPA 99. Additionally, the proposal covers subjects outside the scope of NFPA 101, such as veterinary facilities.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16

NOT RETURNED: 2 Carson, Deal

101-244 - (Sections 12.1, 13.1, 12.6 and 13.6): Accept in Principle

SUBMITTER: Joshua Elowe, U.S. Department of Veterans Affairs

RECOMMENDATION: Use consistent terminology throughout Sections 12.1-13.1 and 12.6-13.6 when describing Ambulatory Health Care centers/occuancies/facilities. In describing Ambulatory Health Care “center(s)” and “facilities” to Ambulatory Health Care “occupancies.” (Although I would defer to the committee’s judgment if they thought a different term was more appropriate, provided this same term was used throughout the Code).

SUBSTANTIATION: In these sections Ambulatory Health Care is referred to as:

1. Ambulatory Health Care Center(s) (12.1.1.1.2, 12.1.1.5, 12.1.1.10, 12.1.5, 12.6, 12.1.1.1, 12.6.1.2, 12.6.1.6, 12.6.1.6.2, exception), 12.6.1.6.5

2. Ambulatory Health Care facility/facilities (12.6.3.4.1, 12.6.3.7.2, 12.6.3.7.5)

3. Ambulatory Health care occupancies (12.6.3.7.1, 12.6.3.5.2)

Note 12.1.2.2 uses both “centers” and “occupancies.”

Using different terminology may be confusing to Code users.

The Committee may also wish to consider reclassifying health care and ambulatory health care occupancies into functional components
rather than occupancies. For example, have separate provisions for patient sleeping areas, critical patient care areas (all ORs, ICUs, emergency room, etc.), ordinary treatment/examination areas, etc. In this case, surgical functions performed in the Ambulatory Health Care setting can be classified along with similar functions performed in Health Care; the balance of functions traditionally performed in Ambulatory Health Care would likely fall out into the Business Occupancy chapter.

COMMITTEE ACTION: Accept in Principle.

Throughout Chapters 12 and 13, replace the terms "ambulatory health care centers" and "ambulatory health care occupancies" with the term "ambulatory health care facility" or "ambulatory health care care facilities", as appropriate.

COMMITTEE STATEMENT: The term "ambulatory health care facility" is preferable. It would create confusion to use the term "ambulatory health care occupancies" because ambulatory health care is a subfield of the overall health care occupation, and not an occupancy by itself. The Committee Action should meet the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 15
NOT RETURNED: 2 Carson, Deal

For the purpose of this requirement, a floor that is not divided by a smoke barrier is considered one smoke compartment.

COMMITTEE STATEMENT: The Committee Action accomplishes which that the submitter requested but does so using more general language that better explains intent. This should meet the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 15
NOT RETURNED: 2 Carson, Deal

101-247 - (12-1.2.5 and 13-1.2.5 (New)): Accept

SUBMITTER: Technical Committee on Health Care Occupancies,

RECOMMENDATION: Insert a new 12-1.2.5 and 13-1.2.5 (and renumber existing paragraphs as necessary) to read:

12-1.2.5 (15-1.2.5) Egress provisions for areas of health care facilities that correspond to other occupancies shall meet the corresponding requirements of this Code for such occupancies. Where the clinical needs of the occupant necessitate the locking of means of egress, staff shall be present for the supervised release of occupants during all times of use.

SUBSTANTIATION: Current Code text offers no guidance on the locking and unlocking of spaces occupied for uses other than strictly health care. The proposal draws from the current language of 14-1.2.1 applicable to detention and correctional occupancies. Such locked spaces are necessary for the clinical needs of the occupant and provision needs to be made for unlocking by staff.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 15
NEGATIVE: 1
NOT RETURNED: 2 Carson, Deal

EXPLANATION OF NEGATIVE:

GALLAGHER: This committee proposal creates an ambiguity with current paragraphs 12/15-1.1.6, 12/15-1.1.9, and 12/15-1.3. The intent of pages anticipated by these paragraphs is the need to classify the facility as a health care occupancy. These facilities are involuntarily committed and may be a threat to themselves or others. For these reasons, when health care organizations admit and take custody of these patients they have a duty to ensure their facility has adequate safeguards atypical with in-place life safety. I believe the committee has clearly gone beyond its scope in determining the level of security that is appropriate in other occupancy classifications. This proposal sets the stage for potential abuse of locked exits in facilities that operate multiple buildings with varying occupancy classifications as well as buildings with a mixed use.

101-248 - (12.2.2.4 Exception No. 1): Accept in Principle

SUBMITTER: Ken Faulstich, Department of Veterans Affairs

RECOMMENDATION: Add the following text to the end of Exception No. 1: "... or other reliable measures are provided to assure unlocking of doors."

SUBSTANTIATION: Many health care facilities with Alzheimer patients use a wandering patient alarm system employing wristbands or ankle bracelets on patients and magnetic door locks. The doors in the means of egress only lock when the patient wearing the transmitter approaches the door. These systems generally use a key pad in lieu of a key at the door for override feature. This arrangement would not appear to meet the current text which requires a key.

COMMITTEE ACTION: Accept in Principle.

Change the wording of Exception No. 1 to 12.2.2.4 to read: ... specialized security measures for their safety, provided staff can readily unlock such doors at all times. (See 12.1.1.1.7 and 12-2.2.5.)"

Revise 12.2.2.2.5 to read: "... or such reliable means as the remote-control of locks, by keying all locks to keys carried by staff at all times, or by other reliable means available to the staff at all times. Only one ..."

COMMITTEE STATEMENT: The Committee Action accomplishes the submitter’s intent. It was necessary to change both Exception No. 1 to 12.2.2.4 and the wording of 12.2.2.5 to accomplish this. This should meet the submitter’s intent.

101-246 - (12-1.1.4.5): Accept in Principle

SUBMITTER: Douglas S. Erickson, American Hospital Association

RECOMMENDATION: 12-1.1.4.5 Renovations, alterations, and modernizations where 50 percent or more of the total smoke or fire zone is demolished for reconstruction, shall comply, to the extent practical with the ... 

SUBSTANTIATION: There is a need to define what is a major renovation, alteration, and modernization. By adding the 50 percent rule in the paragraph it will clarify that the intent of this standard is not be overly restrictive. Some authorities having jurisdiction have taken this requirement to mean that almost any work performed in a smoke or fire zone would require following new construction standards. It is time the committee clarify its intent.

COMMITTEE ACTION: Accept in Principle.

Revise 12-1.1.4.5 and 13-1.1.4.5 to read: Renovations, Alterations, and Modernizations. Renovations, alterations, and modernizations shall comply, to the extent practical, with the requirements for new construction in accordance with 1-4.0. Where major renovations, alterations, or modernizations significantly modify the life safety features are done in a non sprinklered facility, the automatic sprinkler requirement... Where minor renovations, alterations... Revise Appendix Notes A-12-1.1.4.5 and A-13-1.1.4.5 to read: The Code does not attempt to establish specific monetary limits or percentage values to determine if a project is "major" or "minor", as this requires judgment. It is not the intent of this paragraph to exempt significant renovations and modernization projects for which the Code does intend to apply the automatic sprinkler mandate. Where a single project or a phased series of building changes will not significantly modify the current construction of corridor walls, means of egress, smoke barriers, vertical openings or similar life safety features, it is not the intent of this paragraph to apply the automatic sprinkler mandate.
COMMITTEE STATEMENT: It is the intent that all doors need to be closed to prevent the passage of smoke, the detectors required by this code at the doors will perform this function. Why do you have to close a door protecting a hazardous area if the pull station remote from this area, but within the smoke zone is activated. The intent appears to be that the means of egress is protected from smoke, and this wording does not accomplish that. Only a required device for initiating an alarm such as an open area detector, sprinkler or manual pull station within a smoke zone should be required to close the smoke barrier doors.

COMMITTEE ACTION: Accept.

COMMITTEE STATEMENT: See Proposal 101-250 (Log #125).

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

(HEA Log #196)
VOTE ON COMMITTEE ACTION:

Exception No. 5: Multilevel patient sleeping areas shall be permitted without enclosure protection between levels provided all the following conditions are met:

(a) The entire normally occupied area, including all communicating floor levels, is sufficiently open and unobstructed that a fire or other dangerous condition in any part shall be obvious to the occupants or supervisory personnel in the area.

(b) Egress capacity is sufficient to provide simultaneously for all the occupants and any other dangerous condition in any part shall be obvious to the area.

(c) The height between the highest and lowest finished floor levels shall not exceed 15 ft (4.5 m). The number of levels shall not be restricted.

SUBSTANTIATION: In psychiatric facilities the patient sleeping rooms may be arranged with two levels open to a common day room similar to the design often found in detention and correctional facilities. This exception would permit such a design without the need to classify the opening as an atrium. The exception is the same as that used in Chapters 14 and 15 for detention and correctional occupancies.

COMMITTEE ACTION: Accept in Principle.

Add a new Exception No. 5 to 12-3.1.1 and 15-3.1.1 (underlining shows differences from submitter’s recommended text):

Exception No. 5: Multilevel patient sleeping areas in psychiatric facilities where the majority of the occupants are ambulatory shall be permitted without enclosure protection between levels provided all the following conditions are met:

(a) The entire normally occupied area, including all communicating floor levels, is sufficiently open and unobstructed that a fire or other dangerous condition in any part shall be obvious to the occupants or supervisory personnel in the area.

(b) Egress capacity is sufficient to provide simultaneously for all the occupants and any other dangerous condition in any part shall be obvious to the area.

(c) The height between the highest and lowest finished floor levels shall not exceed 15 ft (4.5 m). The number of levels shall not be restricted.

COMMITTEE STATEMENT: As explained in the submitter’s substantiation, the proposed exception has utility within psychiatric facilities where a greater portion of the occupants can be expected to be ambulatory than in a general hospital. This limitation to psychiatric facilities should be part of the wording. The above Committee Action should accomplish the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 15
NOT RETURNED: 2 Carson, Deal

EXPLANATION OF NEGATIVE:

BUSH: The allowance of open, unobstructed multi-level patient sleeping areas has merit, but should not be limited to only psychiatric facilities. Other types of health care facilities caring for ambulatory patients should also be allowed to apply this exception. In addition, the majority of occupants is not a clearly defined term which is essentially not enforceable.

COMMITTEE ACTION: Accept in Principle.

Add an Exception to 13-6.2.2.1 to read:

Exception: Elevators in accordance with 12-2.2.9 shall be permitted in the means of egress serving the ambulatory health care facility.

Add an Exception to 13-6.2.2.1 to read:

Exception: Elevators in accordance with 13-2.2.9 shall be permitted in the means of egress serving the ambulatory health care facility.

SUBSTANTIATION: Use of elevators as a means of egress (in accordance with proposed 5-2.13) has merit, but the Committee has concern over the practical issue of implementing the elevator requirements. The Committee is concerned about the reliability during fire scenarios and the need for further refinement of design criteria standards. A list of concerns is being separately conveyed to the Means of Egress Committee in the form of a public comment on proposed 5-2.13. The proposal shown above restricts the elevator from being used to satisfy egress capacity requirements because, in part, proposed 5-2.13 includes no capacity factors for litter-borne patients.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 15
NOT RETURNED: 2 Carson, Deal

EXPLANATION OF NEGATIVE:

The Technical Correlating Committee on Safety to Life (AAC) notes that the explanation of negative vote received from Mr. Bush, although marked on his letter ballot as applying to Log #398 (i.e., subsequently deleted as proposal 101-256), appears to be applicable to proposal 101-257, not to this proposal.

SUBMITTER: James Lathrop, Koffel Associates, Inc.

RECOMMENDATION: Delete Exceptions No. 2 and No. 3.

SUBSTANTIATION: These are adequately covered in Chapter 6. See 6-2.3.6. Adding them here only confuses the user. For example are other provisions of Chapter 6 not allowed since they are not repeated? Since Chapter 13 does not give Exception 2 is it not allowed. Unless repeating is absolutely necessary it should be avoided.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 15
NOT RETURNED: 2 Carson, Deal
EXPLANATION OF NEGATIVE:
BUSH: Handicraft shops should be retained in the list of hazardous areas requiring special consideration. A significant amount of paper, fabric, wood, flammable paints, or solvents may be stored and/or used in these spaces representing a hazard significantly greater than a typical room in a health care facility. The substantiation speaks largely of locker rooms, but offers little justification for the deletion of handicraft shops from the hazardous area classification.

RECOMMENDATION: 12-3.2.1: From the current list delete:
Employee-Locker Rooms
Gift-Shops
Handicraft Shops

SUBSTANTIATION: These areas of health care facilities have not presented a hazard any greater than a patient room, office, or any typical room off of a corridor. If the type of room in the proposed deletion presents a significant hazard it would fall under the storage room requirement of this section. Some authorities having jurisdiction are enforcing the code so that even one purse locker will cause the room or area to be classified as a hazardous area, which in my opinion is a misapplication of this section as it was originally developed. Employee locker rooms with a significant number of lockers and a large combustible loading will be handled by the area listed as rooms or spaces used for storage of combustible supplies and equipment in quantities deemed hazardous by the authority having jurisdiction.

COMMITTEE ACTION: Accept
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NEGATIVE: 2
NOT RETURNED: 2

EXPLANATION OF AFFIRMATIVE:

RECOMMENDATION: 12-3.4.2 Exception No. 2, 13-3.4.2 Exception No. 3
SUBMITTER: Thomas W. Jaeger, American Health Care Association

RECOMMENDATION: Add a new Exception No. 2 to 12-3.4.2 and a new Exception No. 3 to 13-3.4.2, to read:
"Single station smoke detectors shall not be required to initiate the fire alarm system."

Add appendix notes A-12-3.4.2 Exception No. 2 and A-13-3.4.2 Exception No. 3:
"It is not the intent of this Code to require single station smoke detectors which may be required by local codes to be connected to or to initiate the building fire alarm system."

SUBSTANTIATION: Other codes currently require single station smoke detector systems in sleeping rooms of nursing homes. Section 12-3.4.2 and 13-3.4.2 state that required smoke detection systems are to initiate the fire alarm system, and many authorities having jurisdiction interpret this to include systems required by other codes and standards. The single station detection systems required by other codes have specific requirements as to how and where the system is to annunciate both audibly and visually within the facility. It is not always practical to connect these systems to the building fire alarm system.

COMMITTEE ACTION: Accept in Part
Add only the submitter's recommended appendix notes A-12-3.4.2 Exception No. 2 and A-13-3.4.2 Exception No. 3 to read:
"It is not the intent of this Code to require single station smoke detectors which may be required by local codes to be connected to or to initiate the building fire alarm system."

COMMITTEE STATEMENT: The subject is best addressed by an appendix note only. This should meet part of the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NEGATIVE: 1
NOT RETURNED: 2

EXPLANATION OF AFFIRMATIVE:

101-259 - (13.3.2.7) (New): Accept
SUBMITTER: Mayer D. Zimmerman, DHHS, HEA
RECOMMENDATION: Add a new 13.3.2.7 to read as follows:
13.3.2.7 Buildings housing health care occupancies as indicated in 12.1.1.2 which have rooftop heliports shall be protected in accordance with NFPA 418, Standard for Heliports.

SUBSTANTIATION: There is a question as to whether NFPA 418 is applicable to a newly constructed health care facility since it is not specifically referenced in NFPA 101. This new section is necessary to clarify that it is the intent of the committee to require appropriate protection for an area of hazard greater than that of a normal health care occupancy.

Section 6-4 of NFPA 101 currently requires areas of hazard greater than that normal to an occupancy to be protected by one-hour construction and/or an automatic sprinkler system. Neither of these protection features are applicable or appropriate for a rooftop heliport. NFPA 418 specifies the appropriate protection (portable or fixed AFFF suppression systems, depending on the size of the aircraft.)

Furthermore, NFPA 99, Health Care Facilities, lists NFPA 418 as an informative reference in Annex I, Health Care Emergency Preparedness, section 1-7.1. Annex I is, itself, a recommended document. Thus, although compliance with NFPA 418 is not required by NFPA 99, it is recommended.

Compliance with NFPA 418 should be mandated by NFPA 101 to provide patients and staff in buildings housing health care occupancies which contain rooftop heliports with an appropriate level of protection.

COMMITTEE ACTION: Accept
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 15
NEGATIVE: 1
NOT RETURNED: 2

EXPLANATION OF AFFIRMATIVE:
BUSH: The system of providing for fire department notification without occupant notification of the activation of a building fire alarm system component is truly not practical. With a defend in place theory for health care facilities, immediate efforts to remove patients in intimate contact with the incipient fire and to further protect remaining building occupants by confining the effects of the fire emergency is a function of facility staff and not that of the building owner/occupant and should not interfere with the other functions of emergency services personnel.
The Technical Correlating Committee on Safety (TCC) directs that a public comment be submitted in the correlating committee's name requesting that the Life Safety Technical Committee on Health Care Occupancies (HEA) reconsider its action on this proposal in view of the explanation of abstention received from Mr. Faulsich questioning the depth of the committee's rationale.

**SUBMITTER:** Thomas W. Jaeger, American Health Care Association

**RECOMMENDATION:** Add new text to read:

A-12-5.4.5.5.5.5 Nursing Homes. An approved automatic smoke detection system shall be installed in the corridors of patient sleeping areas and in spaces open to corridors as permitted in Section 12-5-6.1 of nursing homes.

**EXCEPTION No. 1:** Corridor systems shall not be required where each patient sleeping room is protected by an approved smoke detection system and a smoke detector is provided at smoke barriers.

**EXCEPTION No. 2:** Corridor systems are not required where patient room doors are equipped with automatic door-closing devices with integral smoke detectors on the room side installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

Add a new appendix note to read:

A-12-5.4.5.5.5.5.5. The requirement for smoke detectors in spaces open to the corridors eliminates the requirement for direct supervision by the facility staff contained in Section 12-5.6.1 for nursing homes.

**SUBSTANTIATION:** The American Health Care Association (AHCA), in coordination with the National Electrical Manufacturers Association (NEMA), and the American Fire Alarm Association (AFAA), support the requirement for smoke detectors in corridors of patient sleeping areas and spaces open to the corridors as permitted by the Code. AHCA believes that there should be some redundancy to the sprinkler system in nursing homes. Although AHCA recognizes that a supervised sprinkler system does provide a high degree of reliability and protection, with sleeping room doors maintained in the open position, the corridor smoke detectors will provide some redundancy to the sprinkler system.

A similar code change is being submitted to each of the model building codes with the intent of coordinating the requirements for nursing homes in all four codes. In the last several years, there has been extensive controversy concerning the requirements for smoke detectors in nursing homes. It is hoped that the coordination of NEMA, AFAA, and AHCA will at least reduce the controversy in the future.

**COMMITTEE ACTION:** Accept in Principle.

Add new text to read:

A-12-5.4.5.5.5.5.5 Nursing Homes. An approved automatic smoke detection system shall be installed in the corridors of patient sleeping areas and in spaces open to corridors as permitted in Section 12-5-6.1 of nursing homes.

**EXCEPTION No. 1:** Corridor systems shall not be required where each patient sleeping room is protected by an approved smoke detection system and a smoke detector is provided at smoke barriers.

**EXCEPTION No. 2:** Corridor systems are not required where patient room doors are equipped with automatic door-closing devices with integral smoke detectors on the room side installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

Add a new appendix note to read:

A-12-5.4.5.5.5.5.5. The requirement for smoke detectors in spaces open to the corridors eliminates the requirement for direct supervision by the facility staff contained in Section 12-5.6.1 for nursing homes.

**COMMITTEE STATEMENT:** The above Committee Action accomplishes that which the submitter requested but changes the wording clarifying and to use terminology common to Code requirements.

Although the Committee agrees with the proposal and the substantiation of the submitter, the Committee believes that staffing patterns and the type of patients in a nursing home also warrant the requirement for corridor smoke detectors. The Committee supports coordinating occupancy requirements with the model building codes (via BCMC) but does not agree that coordination alone is sufficient technical substantiation for changing technical requirements of the Life Safety Code applicable to health care facilities.
COMMITTEE ACTION: Accept in Principle.

Delete Exceptions No. 1 and No. 2 to 12-3.5.5.2 as recommended by the submitter.
Also, in 13-3.5.5.3 replace existing Exception No. 1 with the following:
Exception No. 1 to (d) Standard response sprinklers shall be permitted to be continued in use in existing approved sprinkler systems where quick response and residential sprinklers were not listed for use in that location at the time of installation.
Retain current Exception No. 2 to (d) of 13-3.5.5 without change.
Retire Formal Interpretation 94-2 by adding the following Appendix Note:
A 13-3.5.5.3 The exceptions are not intended to supplant the requirement of NFPA 13 that residential sprinklers with more than a 10 degree F difference in temperature rating not be mixed within a room. Currently there are no additional prohibitions in NFPA 13 on the mixing of sprinklers having different thermal response characteristics. Conversely, there are no design parameters to make practical the mixing of residential and other types of sprinklers.

COMMITTEE STATEMENT: The Committee Action accomplishes that which the submitter requested. Additionally, it makes similar changes to Chapter 13 for existing buildings; but does so retaining language so as not to put existing installations of standard response sprinklers into non compliance. The addition of the appendix note will formalize Interpretation 94-2 to be retired. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16

NOT RETURNED: 2 Carson, Deal

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COMMITTEE ACTION: Accept in Principle.

101- 263 - (12-3.5.5.3 Exception, 13-3.5.5.6, A-12-3.5.3 and A-13-3.5.6 (New)): Reject

SUBMITTER: Anthony Del Prete, Del Manor Nursing Home

RECOMMENDATION: I am proposing that an exception be made to 12-3.5.5.3, 13-3.5.6, A-12-3.5.3 and A-13-3.5.6 allow privacy curtains containing mesh with openings less than half inch when all the other provisions have been met.

SUBSTANTIATION: None.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The submitter provided no substantiation to justify permitting less than half inch openings.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16

NOT RETURNED: 2 Carson, Deal

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COMMITTEE ACTION: Accept in Principle.

101- 264 - (12-3.5.4, 13-3.5.7): Reject

SUBMITTER: Joseph H. Bontempo, Hamilton Pavilion Healthcare

RECOMMENDATION: Require in nursing facilities that a fire extinguisher be provided between each set of fire doors.

SUBSTANTIATION: The purpose is to eliminate the opening of fire/smoke barrier doors during an emergency to retrieve an extinguisher in an adjoining fire zone, thereby allowing smoke to travel from one zone to another during the retrieval process.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: The subject of the text proposed by the submitter might be a design consideration, but does not need to be a requirement for all cases. Staff may need to travel from adjacent zones to the zone of fire origin, so doors will need to be opened. The doors separating smoke compartments often are not fire doors.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16

NOT RETURNED: 2 Carson, Deal

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COMMITTEE ACTION: Accept in Principle.

101- 265 - (12-3.6.3.2 Exception No. 2 (New)): Reject

SUBMITTER: Ken Faulstich, Department of Veterans Affairs

RECOMMENDATION: Add a second exception as follows:
Exception No. 2: Doors to patient seclusion rooms which are provided with a locking arrangement in accordance with Exception No. 1 to 12-2.2.4 and a self-closing device.

SUBSTANTIATION: Generally, providing positive latching hardware for corridor doors to seclusion rooms for psychiatric patients is not desired. These doors are generally provided with a dead bolt lock, keyed from both sides of the door. All door hardware is placed on the corridor side of the door to prevent patients from harming themselves. The risk that it will take additional time for staff to close the door in a fire emergency is minimal since the door should always be locked plus the self closer should keep the door closed.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: It is important to retain the requirement for a positive latch for the protection of rooms and spaces in the same smoke compartment as the seclusion room being addressed. Hardware available to allow door latching without there needing to be any hardware on the room side of the door. For example, the door lock/latch could be key operated on the room side. This will permit staff to release the latch from within the room, provides the necessary information. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16

NOT RETURNED: 2 Carson, Deal

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COMMITTEE ACTION: Accept in Principle.

101- 266 - (12-3.6.3.3, 13-3.6.5.3): Accept in Principle

SUBMITTER: Margaret Engwer, VA Medical Center

RECOMMENDATION: Change existing text to read:
"Door closing devices shall not be required on doors in corridor wall openings other than those serving required enclosures of vertical openings, exits, smoke barriers, or hazardous areas.

SUBSTANTIATION: The purpose of paragraphs 12-3.6.3.3 and 13-3.6.5.3 is to clarify locations or types of enclosures where door closing devices are required. Corridor doors forming part of a smoke barrier are required to have self closers. Adding smoke barriers to this paragraph will clarify that fact.

COMMITTEE ACTION: Accept in Principle.

Change existing text to read:
"Door closing devices shall not be required on doors in corridor wall openings other than those serving required enclosures of vertical openings, exits, smoke barriers, or hazardous areas.

COMMITTEE STATEMENT: The Committee Action accomplishes that which the submitter requested, but reorders the list of components so as to group those serving as enclosures. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16

NOT RETURNED: 2 Carson, Deal

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COMMITTEE ACTION: Accept in Principle.

101- 267 - (12-3.6.3.4 (New)): Accept in Principle

SUBMITTER: Douglas S. Erickson, American Hospital Association

RECOMMENDATION: Insert a new 12-3.6.3.4 to read:
12-3.6.3.4 Gasketing of doors shall not be required on doors in corridor wall openings.

SUBSTANTIATION: Many authorities having jurisdiction are requiring corridor doors to be smoke gasketed because 12-3.6.3.1 states that door openings shall be protected by construction to restrict the passage of smoke. It is not uncommon for wood doors to warp with seasonal changes, deflecting away from the stop on the frame. As with fire rated doors, corridor doors are expected to deflect a certain percentage of their thickness and still be classified as resisting the passage of smoke. Fire doors tested in accordance with UL 10B may deflect one times the thickness of the door during the first half of the test and one and a half times the door thickness during the entire test.

COMMITTEE ACTION: Accept in Principle.

Rather than doing that which the submitter requested, create an appendix note to 12-3.6.3.1 to read:
A-12-3.6.3.1 Gasketing of doors should not be necessary to achieve resistance to the passage of smoke if the door is relatively tight fitting.

COMMITTEE STATEMENT: Given that gasketing is not required for any of the doors addressed by the Code, it would be confusing to have text in the body of the Code exempting gasketing for only one of the door types/locations addressed. The proposed appendix note provides the necessary information. This should meet the submitter's intent.
101- 268(12-3.6.3.4 and Exception (New)): Accept in Principle

SUBMITTER: Douglas S. Erickson, American Hospital Association

RECOMMENDATION: Insert a new 12-3.6.3.4 and associated Exception to read:

12-3.6.3.4 Protective plates (kick plates) extending 48 in. above the bottom of the door shall be permitted on doors in corridor wall openings.

Exception: Those doors serving vertical openings and approved exits.

SUBSTANTIATION: Kick plates on corridor doors and cross corridor doors have been used in health care facilities for decades without ever having been a negative factor in a fire related death or major loss of property. As corridor doors, even into hazardous areas, of health care facilities have the primary function of resisting the passage of smoke, there is no reason to prohibit the installation of armor plating on the lower half of the door. Exposing the lower half of corridor doors to cart and equipment traffic in a health care facility will jeopardize the doors integrity by damage caused by puncturing the outer veneer and tearing up the door edges. It is unfortunate that one self proclaimed authority having jurisdiction has determined that 1 3/4 in. solid bonded wood core doors are equivalent to a 20 minute rated assembly and therefore are prohibited from having armor plating above 16 in. from the bottom of the door. To make matters worse, they are also applying this requirement retroactively.

COMMITTEE ACTION: Accept in Principle.

Add an Exception to 12-3.2.1 and 15-3.2.1 to read:

12-3.2.1 Non-rated, factory- or field-applied protective plates extending not more than 48 in. above the bottom of the door.

To 12-3.7.5 and 13-3.7.5 add the following: "Non rated, factory- or field-applied protective plates extending not more than 48 in. above the bottom of the door shall be permitted."

Insert a new 12-3.6.3.4 and 13-3.6.3.4 (and renumber as necessary) to read: "Non rated, factory- or field-applied protective plates extending not more than 48 in. above the bottom of the door shall be permitted."

COMMITTEE STATEMENT: The Committee Action accomplishes that which the submitter requested and additionally makes corresponding changes in other parts of the chapter for coordination. There is sufficient language in Chapter 6 to permit Chapters 12 and 13 to make these modifications and apply them to fire rated doors as well as to those that have no rating. This should meet the submitter's intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16

NEGATIVE: 2

NOT RETURNED: 2 Carson, Deal
SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs

RECOMMENDATION: Rewrite as follows:
Exception No. 2*: Dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air conditioning systems where both adjacent smoke compartments are protected with quick response or residential sprinklers in accordance with 12-3.5.2 when either side of the barrier is a patient sleeping area.

SUBSTANTIATION: I believe the intent of the committee was to allow the deletion of smoke dampers from a smoke barrier only when both sides of the barrier was provided with quick response sprinklers. The way the exception reads, a smoke barrier separating two smoke compartments where on one side of the smoke barrier patient sleeping areas and quick response sprinklers exist, and on the other side an administration area with no patient sleeping and only standard response sprinklers exist, can have the smoke dampers removed. If the fire is in the administration area, the products of combustion will not be minimized and the smoke will travel through the ducts to the patient sleeping area. On the other hand, quick response sprinklers in the patient sleeping area smoke zone do minimize the products of combustion and helps prevent the smoke from going to the administration side. The change identified will require quick response sprinklers to be installed on both sides of the barrier.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: It is the intent to permit dampers to be omitted under the conditions specified which require quick response or residential sprinklers only in the compartments containing the patients sleeping rooms. The submitter has not substantiated why the Code should be made more stringent in this area.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-277 - (12-3.7.8 Exception No. 2): Reject

SUBMITTER: Peter A. Larrimer, Department of Veterans Affairs

RECOMMENDATION: Change Section 12-3.7.7 to read: “Vision panels consisting of fire-rated glazed or wire glass panels and steel frames shall be provided in each cross corridor swinging door and at each cross corridor horizontal sliding door in a smoke barrier.

SUBSTANTIATION: Based on recent formal interpretation, I believe the change is necessary. Requiring compliance with Section 6-2.3.4 for vision panels is overly restrictive in a 1 3/4” thick, solid bonded wood core door or a 20 minute door. Neither the 1 3/4” or 20 minute door require a hose stream test which would be required for a vision panel in order to comply with Section 6-2.3.4. There is no technical justification for requiring a vision panel to have greater fire resistance capability than the door or wall in which the vision panel is installed, especially in a sprinklered building.

COMMITTEE ACTION: Accept in Principle.

COMMITTEE STATEMENT: The Committee Action accomplishes that which the submitter requested but substitutes a reference to approved frames rather than restricting the frame to being of steel.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal
everywhere. The user of the Code must compare requirements and implement the stricter or strictest applicable to any construction feature or element.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-277 - (12-3.8.1): Reject
SUBMITTER: Walter Smidt III, Charleston, WV 25305

STUBSTANTIATION: The Committee’s substantiation in 101-469 (Log 4916) for the 1994 Life Safety Code is incomplete. The Committee did not address how ventilation or rescue is to be performed without operable windows. If the justification by the Committee “can’t tell if the open window is providing any benefit...” why then the change, i.e., no proper data to justify the change. Design capability is in the eye of the beholder and should not be a justification to exchange building designs by excluding operable windows for life safety.

COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: Exterior rescue via a window is not expected because the building is fully sprinklered and patient sleeping rooms are sprinklered using quick response or residential sprinklers. The submitter has not provided adequate substantiation for the requested change.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-278 - (12-5.1.1 (New)): Reject
SUBMITTER: Douglas S. Erickson, American Hospital Association
RECOMMENDATION: 12-5.1.1 Utilities shall comply, to the extent practical, with the referenced standards in 7-1.

STUBSTANTIATION: This change will permit utility system installations to be modified from strict compliance with all the referenced standards in 7-1.

COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The subject introduced by the submitter has been adequately addressed by changes to core Chapters 1 through 7 and the current wording of Chapter 32. For example, see the new proposed I-3.5. The term “to the extent practical” is ambiguous. New ambiguities should not be added to Code text.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-279 - (125.1.2): Accept in Principle
SUBMITTER: Hugh O. Nash, Jr., Nashville, TN
RECOMMENDATION: Change the words “Life Safety Branch” to the words “Essential System.”

STUBSTANTIATION: The term “Life Safety Branch” is a term only used for hospitals. The term “Essential System” is a broader term which refers to Type I, Type II and Type III systems used in all types of healthcare facilities.

COMMITTEE ACTION: Accept in Principle.
COMMITTEE STATEMENT: The Committee Action accomplishes that which the submitter requested but changes wording to “essential electrical system” because that term is proper and is more descriptive. This should meet the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-280 - (12-6.1.1.2, 13-6.1.1.2): Accept
SUBMITTER: Joshua Elvove, U.S. Department of Veterans Affairs
RECOMMENDATION: Delete “and outpatient surgical centers.”

STUBSTANTIATION: This wording is redundant (see definition provided in 12-1.3 and 13-1.3).

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-281 - (12-6.1.6.2, 13-6.1.6.2): Accept in Principle
SUBMITTER: Joshua Elvove, U.S. Department of Veterans Affairs
RECOMMENDATION: Replace “Type I...Type V construction” with “any construction type permitted by NFPA 220.”

STUBSTANTIATION: It seems pointless to make an all inclusive list, when all types of construction is permitted (for both new and existing occupancies).

COMMITTEE ACTION: Accept in Principle.

COMMITTEE STATEMENT: The Committee Action accomplishes that which the submitter requested but uses the words “in accordance with” rather than “permitted.”

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-282 - (12-6.2.4.1, 13-6.2.4.1 and Exception (New)): Reject
SUBMITTER: Joshua Elvove, U.S. Department of Veterans Affairs
RECOMMENDATION: 1. Replace “fire section” with “fire or smoke compartment.”

STUBSTANTIATION: 1. Fire section is not defined in the Code. 2. Current Code text is too restrictive and offers no exception to the two means of egress requirements. For small or single story occupancies, there should be some allowance for a single means of egress as permitted in Business Occupancies (for both new and existing occupancies).

COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: It is not the Committee intent to require a smoke compartment to have two exits within it. Also, two means of egress are needed for ambulatory health care facilities. The submitter has not substantiated why a single exit should be permitted. The submitter’s proposed wording will create more problems than solutions.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-283 - (12-6.2.4.2): Accept
SUBMITTER: Douglas S. Erickson, American Hospital Association
RECOMMENDATION: 12-6.2.4.2 ... suite of rooms of more than 450 sq ft ( ~ 42 sq m) shall have ...

STUBSTANTIATION: Ambulatory care facilities should be treated similarly to hospital settings and therefore this section needs to be increased to match 12-2.5.2 for other than patient sleeping room suites.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal
ADD a second Exception to 12-6.2.9.2 to read:

Exception No. 2: Where line powered life-support equipment is used for occasional emergency care and life support only.

SUBSTANTIATION: As health care continues to change its delivery system to include more and more primary care buildings, these outlying facilities are being constructed with a limited amount of saving and life-support equipment. This equipment is not for daily use but only for emergency purposes to stabilize a patient until they can be transported to a hospital. For the occasional use of this equipment a full essential electrical system should not be required.

COMMITTEE ACTION: Accept in Principle.

Add a second Exception to 12-6.2.9.2 to read:

Exception No. 2: This requirement shall not apply to a facility that uses life-support equipment for emergency purposes only.

COMMITTEE ACTION: The Committee Action accomplishes that which the submitter requested but does so using different language. The term “occasional” is too difficult to define it is also to difficult to enforce. This should meet the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 18
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Accept.

STATEMENT: The Committee Action accomplishes that which the submitter requested but does so using different language. The term “occasional” is too difficult to define it is also to difficult to enforce. This should meet the submitter’s intent.

COMMITTEE ACTION: Accept.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Accept.

STATEMENT: There is a need to retain the maximum 22,500 sq. ft maximum compartment size. This is done for consistency with other sections of the chapter. The wording that the submitter deleted would result in a maximum 22,500 sq. ft smoke compartment if the maximum 150 ft dimensions were used. This should meet the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Accept.

STATEMENT: The action on the referenced proposal accomplishes part of what the submitter requested in that dampers can be omitted if the building is sprinklered. However, another necessary condition for omitting those dampers is that the HVAC system be fully ducted. This should meet part of the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Accept.

STATEMENT: The committee action, in part, retains the maximum 22,500 sq. ft maximum compartment size. This is done for consistency with other sections of the chapter. The wording that the submitter deleted would result in a maximum 22,500 sq. ft smoke compartment if the maximum 150 ft dimensions were used. This should meet the submitter’s intent.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18

VOTE ON COMMITTEE ACTION:

AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal
UBS_UBS_UBS~_r_~_UB~aJTITTANWith the...This change will permit utility system
VOTE ON
SUBMITTER: Douglas S. Erickson, American Hospital Association
standards. It is time the committee clarify its intent.
smoke or fire zone would require following new construction
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The subject introduced by the
submittor has been adequately addressed by changes to core
Chapters 1 through 7 and the current wording of Chapter 32. For
example, see the new proposed 1-3.5. The term "to the extent
practical", with the...
SUBSTANTIATION: There is a need to define what is a major
renovation, alteration, and modernization. By adding the 50% rule
in the paragraph it will clarify that the intent of this standard is not
be overly restrictive. Some authorities having jurisdiction have taken
example, see the new proposed 1-3.5. The term "to the extent
practical" is ambiguous. New ambiguities should not be added to
Code text.
RECOMMENDATION: Add the following text to the end of
Exception No. 1: ". . . or other reliable measures are provided to assure unlocking of
doors." 
SUBSTANTIATION: Many health care facilities with Alzheimer
diagnosis use a wandering patient alarm system employing wristbands
or ankle bracelets on patients and magnetic door locks. The doors in the
means of egress only lock when the patient wearing the
transmitter approaches the door. These systems generally use a key
paid in lieu of a key at the door for override feature. This
arrangement would not appear to meet the current text which requires a
key.
COMMITTEE ACTION: Accept in Principle.
Change the wording of Exception No. 1 to 13-2.2.2.4 to read: ". . .
specialized security measures for their safety, provided staff can
readily unlock such doors at all times. (See 12-1.1.7 and 13-2.2.2.5.)
Revise 13-2.2.2.5 to read: ". . . by such reliable means as the remote-
control of locks, by keying all locks to keys carried by staff at all
times, or by other reliable means available to the staff at all times.
Only one . . ."
COMMITTEE STATEMENT: The Committee Action accomplishes
the submitter's intent. It was necessary to change both Exception
No. 1 to 13-2.2.2.4 and the wording of 13-2.2.2.5 to accomplish this.
This should meet the submitter's intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

101-292 - (13-1.1.4.5): Accept in Principle
SUBMITTER: Eugene A. Cable, U.S. Department of Veterans Affairs
RECOMMENDATION: Add a new section:
All interior walls and partitions of patient sleeping rooms shall be at least
50 minute fire resistant and smoke tight. Doors between rooms shall be
shall be substantial doors, such as those constructed of 1 3/4 in.
solid bonded core wood or of construction that will resist fire for at
least 20 minutes.
Exception: Buildings protected throughout by a supervised automatic
sprinkler system.
tight partition between rooms on same side of corridor. If health
care is "protect in place" fire protection then obviously protection of
patient rooms is needed by either fire resistive construction or
sprinkler protection.
Nursing staff shortages are a reality. There is no longer enough staff
able to move patients out of their rooms in a timely manner.
Past editions of the Code always assume adequate staff is
present. Therefore, unless the Code changes in some way to make up
for the lack of adequate staff, the Code will be allowing a lower level
of life safety.
Present day fire drills (R.A.C.E.) and the new health care NFPA
film, "Fire Safety in Health Care Facilities" are good examples of
"protect in place" thinking. Patients are not moved from their
rooms and rooms are not protected areas!
Past good health care fire experience is not a valid argument
against this proposal. Most existing health care facilities either have
room separation per a building code or have sprinkler protection.
This change would impact on few facilities, and for those impacted
Section 1-4.2 allows plenty of time. For the few facilities without
room separation, without sprinkler protection, with less staff,
without fire drills preparing for immediate evacuation, and without
adequate controls on flame flammability of furnishings, this is an
important proposal for adequate minimum life safety.
Three recent hospital/nursing home fires highlight this issue:
Dardanelle, AK, March 1990 - 3 fatalities, 10 injuries
Newington, CT, January 1991 - 25 injuries
Petersburg, VA, December 1994 - 6 fatalities, 18 injuries
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: The submitter's proposed wording
would create an excemption burden on existing facilities. The
submitter underestimates the impact that this new requirement
would have. Room to room separation on the same side of the
corridor is not intended. Basic protection is afforded by the
 corridor wall.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal
COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: It is not the intent that there be direct supervision of the releasing device at the door. This is an operations issue for the authority having jurisdiction to consider when determining the adequacy of any remote unlocking option.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Delete Exception Nos. 2 and 3.
COMMITTEE STATEMENT: These are adequately covered by Chapters 5 and 6. See 5-1.3.2, 6-2.4.7, and 6-2.3.6. Having them here only confuses the user as to intent. Since they are not repeated in other occupancies it contributes to further confusion.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
COMMITTEE ACTION: Accept in Part.
COMMITTEE STATEMENT: The proposer is correct that Exception No. 3 can be deleted. However, Exception No. 2 needs to be retained because it currently allows vertical openings connecting more than two stories. There is no comparable allowance in the provisions referenced in the submitter's substantiation. There is no justification for removing the allowance described by current Exception No. 2 for existing buildings.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
COMMITTEE ACTION: Accept.
COMMITTEE STATEMENT: Activation of the building fire alarm system to notify occupants by smoke barrier door detectors is a needed redundancy. The only area smoke detectors required will be ones developed. Employee locker rooms with a significant number of lockers and a large combustible loading will be handled by the area listed as rooms or spaces used for storage of combustible supplies and equipment in quantities deemed hazardous by the authority having jurisdiction.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
COMMITTEE ACTION: Accept.
COMMITTEE STATEMENT: The Committee Action accomplishes what the submitter requested but moves the phrase "in accordance with Section 7-6..." to follow the word "provided" rather than the word "exists". This is done for ease in reading and understanding the requirement. This should meet the submitter's intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Open lounges in waiting rooms are considered rooms. Therefore, the submitter's substantiation is not correct. The current wording needs to be retained to address rooms not open to the corridor.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: Exception No. 5 to 7-6.3.2 shall not be permitted.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
COMMITTEE ACTION: Accept.
COMMITTEE STATEMENT: The paragraph addressed by the submitter covers occupant notification, not initiation of the fire alarm system and not fire department notification. The current wording is adequate in that such detectors must initiate the alarm system and notify the fire department, but need not provide immediate occupant notification. This helps to prevent numerous nuisance alarms from interfering unnecessarily with the normal functioning of the facility. Additionally, the proposed wording would retroactively impose a stricter requirement on existing facilities. The submitter has not substantiated why that is needed.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 15
NEGATIVE: 1
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: From the current list delete:
COMMITTEE STATEMENT: Exception No. 3. The Committee Action accomplishes what the submitter requested but moves the phrase "in accordance with Section 7-6..." to follow the word "provided" rather than the word "exists". This is done for ease in reading and understanding the requirement. This should meet the submitter's intent.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal
"...in accordance with Section 7-6..."

COMMITTEE ACTION: Accept.
COMMITTEE STATEMENT: Exception No. 1: Where each patient sleeping room is protected by an approved smoke detection system, and a smoke detector is provided in accordance with Section 7-6 at smoke barriers and horizontal exits, such corridor systems shall not be required on the patient sleeping room floors.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal

COMMITTEE ACTION: Reject.
COMMITTEE STATEMENT: Exception No. 1: Where each patient sleeping room is protected by an approved smoke detection system, and a smoke detector is provided in accordance with Section 7-6 at smoke barriers and horizontal exits, such corridor systems shall not be required on the patient sleeping room floors.
NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 18
VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 16
NOT RETURNED: 2 Carson, Deal