

## Report of the Committee on

## Technical Committee on

## Safety to Life

## Alternative Approaches to Life Safety

## Technical Correlating Committee (SAF-AAC)

David W. Stroup, *Chair*

US National Institute of Standards &amp; Technology, MD [RT]

**James R. Quiter**, *Chair*  
Arup Fire, CA [SE]**Richard W. Bukowski**, U.S. National Institute of Standards & Technology, MD [RT]

Rep. Signaling Systems Correlating Committee

**Kenneth E. Bush**, Maryland State Fire Marshals Office, MD [E]  
Rep. International Fire Marshals Association**Lee J. Dosedlo**, Underwriters Laboratories Incorporated, IL [RT]**Jackie T. Gibbs**, Marietta Fire Department, GA [U]

Rep. International Association of Fire Chiefs

**Kenneth E. Isman**, National Fire Sprinkler Association, NY [M]**J. Edmund Kalie, Jr.**, Prince George's County Government, MD [E]**Ronald K. Mengel**, Honeywell Fire Solutions/System Sensor, IL [M]

Rep. National Electrical Manufacturers Association

**Jake Pauls**, Jake Pauls Consulting Services in Building Use & Safety, MD [C]

Rep. American Public Health Association

**Kirby W. Perry**, Kirby W. Perry Architects & Associates Incorporated, TX [SE]

Rep. American Institute of Architects

**Lawrence G. Perry**, Building Owners & Managers Association International, MD [U]**David L. Wismer**, Department of Licenses & Inspections, PA [E]

## Alternates

**Robert E. Burke**, Muse & Associates, DC [C]  
(Alt. to Jake Pauls)**Kevin Kelly**, National Fire Sprinkler Association, NY [M]  
(Alt. To Kenneth E. Isman)**Ronald H. Minter**, Thomas & Betts, TN [M]  
(Alt. to Ronald K. Mengel)**Martin H. Reiss**, The RJA Group, Incorporated, MA [SE]  
(Alt. to James R. Quiter)**Michael S. Schulman**, Underwriters Laboratories Inc., CA [RT]  
(Alt. to Lee J. Dosedlo)**Michael D. Tomy**, Heery International Incorporated, GA [SE]  
(Alt. to Kirby W. Perry)

## Nonvoting

**John L. Bryan**, Frederick, MD [SE]  
(Member Emeritus)**David A. deVries**, Firetech Engineering Incorporated, IL [SE]**William E. Fitch**, Omega Point Laboratories, Incorporated, TX [RT]**Ralph Gerdes**, Ralph Gerdes Consultants, LLC, IN [SE]**Wayne D. Holmes**, HSB Professional Loss Control, CT [I]**Morgan J. Hurley**, Society of Fire Protection Engineers, MD [U]**Thomas W. Jaeger**, Gage-Babcock & Associates, Incorporated, VA [SE]**Philip R. Jose**, U.S. Department of Veterans Affairs, NY [U]**Richard L. Klinker**, Klinker & Associates, Incorporated, MD [SE]**James K. Lathrop**, Koffel Associates, Incorporated, CT [SE]**Harold E. Nelson**, Hughes Associates, Incorporated, VA [SE]  
(Member Emeritus)**Daniel J. O'Connor**, Schirmer Engineering Corporation, IL [I]**Eric R. Rosenbaum**, Hughes Associates, Incorporated, MD [SE]**Ed Schultz**, Code Consultants, Incorporated, MO [SE]**Catherine L. Stashak**, Schirmer Engineering Corporation, IL [I]**David W. Stroup**, U.S. National Institute of Standards & Technology, MD [RT]**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.**Wayne G. Carson**, Carson Associates, Inc., VA [SE]**Gene B. Endthoff**, National Fire Sprinkler Association, IL [M]  
Rep. National Fire Sprinkler Association**Kenneth S. Faulstich**, US Department of Veterans Affairs, DC [U]**J. Richard Fruth**, Hayes Large Architects, PA [SE]

Rep. American Institute of Architects

**Jonathan Humble**, American Iron and Steel Institute, CT [M]

Rep. American Iron and Steel Institute

**William E. Koffel**, Koffel Associates, Inc., MD [SE]**Bernard M. Levin**, Rockville, MD [SE]

Rep. TC on Board &amp; Care Facilities

**Harold E. Nelson**, Hughes Associates, Inc., VA [SE]**Aleksy L. Szachnowicz**, Anne Arundel County Public Schools, MD [U]**Amal Tamim**, W. R. Grace & Company-Conn, MA [M]**Joseph H. Versteeg**, Versteeg Associates, CT [E]

Rep. Fairfield CT Fire Marshal's Office

**John M. Watts, Jr.**, Fire Safety Institute, VT [SE]

## Alternates

**Edward K. Budnick**, Hughes Associates, Inc., MD [SE]  
(Alt. to Harold E. Nelson)**Joseph M. Jardin**, New York City Fire Department, NY [C]  
(Voting Alt. to NFPA/FSS Rep.)**Philip R. Jose**, US Department of Veterans Affairs, NY [U]  
(Alt. to Kenneth S. Faulstich)**Charlie B. Tasto**, Liberty Mutual Property, CA [I]  
(Voting Alt. to AAI Rep.)**Victoria B. Valentine**, National Fire Sprinkler Association, NY [M]  
(Alt. to Gene B. Endthoff)Staff Liaison: **Ron Coté****Committee Scope:** This Committee shall have primary responsibility for documents on alternative methods of protection of human life from fire and other circumstances capable of producing similar consequences and on the nonemergency, and 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. A key to classifications is found at the front of this book.*This portion of the Technical Committee Report of the Committee on **Alternative Approaches to Life Safety** is presented for adoption.This Report on Comments was prepared by the **Technical Committee on Alternative Approaches to Life Safety** and documents its action on the comments received on its Report on Proposals on NFPA 101A, **Guide on Alternative Approaches to Life Safety**, 2001 edition, as published in the Report on Proposals for the 2003 November Meeting.This Report on Comments has been submitted to letter ballot of the **Technical Committee on Alternative Approaches to Life Safety** which consists of 15 voting members. The results of the balloting, after circulation of any negative votes, can be found in the report.This Report on Comments has also been submitted to letter ballot of the **Technical Correlating Committee on Safety to Life** which consists of 12 voting members; of whom 12 voted affirmatively.

101A-1 Log #3 **Final Action: Accept in Principle**  
(7.2.4.6, 7.4.4.9.1, 7.6.4.9.1)

**Submitter:** William E. Koffel, Koffel Assoc., Inc.  
**Comment on Proposal No:**101A-6  
**Recommendation:** Additional revisions are necessary to give guidance to the user of NFPA 101A regarding the evaluation of interior finishes that are tested in accordance with methods permitted by NFPA 101, rather than NFPA 255. It should be noted that other sections of NFPA 101A will also need to be revised to correlate with this public comment.  
**Substantiation:** NFPA 101 permits interior finishes to be evaluated by test methods other than NFPA 255 and as such, NFPA 101A should recognize those methods.

**Committee Meeting Action: Accept in Principle**

(1) Following the revised 7.2.4.6, add a paragraph 7.2.4.6.1 (and renumber existing 7.2.4.6.1 to become 7.2.4.6.2) to read:

7.2.4.6.1 Interior wall and ceiling finish materials tested in accordance with NFPA 265 or NFPA 286 as permitted by Section 10.2 (NFPA 101), and meeting the criteria established in Section 10.2 (NFPA 101) for those test standards, shall be scored as Class A interior finish materials (flame spread ≤25).

(2) In revised 7.4.4.9.1, after the first exception (and before the paragraph that begins "Only floor coverings in the exit..."), add a paragraph to read:

Interior wall and ceiling finish materials tested in accordance with NFPA 265 or NFPA 286 as permitted by Section 10.2 (NFPA 101), and meeting the criteria established in Section 10.2 (NFPA 101) for those test standards, shall be scored as Class A interior finish materials (flame spread ≤25).

(3) Following the revised 7.6.4.9.1, add a paragraph 7.6.4.9.2 (and renumber existing 7.6.4.9.2 and 7.6.4.9.3 to become 7.6.4.9.3 and 7.6.4.9.4) to read:

7.6.4.9.2 Interior wall and ceiling finish materials tested in accordance with NFPA 265 or NFPA 286 as permitted by Section 10.2 (NFPA 101), and meeting the criteria established in Section 10.2 (NFPA 101) for those test standards, shall be scored as Class A interior finish materials (flame spread ≤25).

(4) Add a second paragraph to 4.6.2 to read:

Interior wall and ceiling finish materials tested in accordance with NFPA 265 or NFPA 286 as permitted by Section 10.2 (NFPA 101), and meeting the criteria established in Section 10.2 (NFPA 101) for those test standards, shall be scored as Class A interior finish materials (flame spread ≤25).

(5) Add a new 5.4.6.3 to read:

5.4.6.3 Interior wall and ceiling finish materials tested in accordance with NFPA 265 or NFPA 286 as permitted by Section 10.2 (NFPA 101), and meeting the criteria established in Section 10.2 (NFPA 101) for those test standards, shall be scored as Class A interior finish materials (flame spread ≤25).

(6) Insert a new 8.5.7.3 (and renumber existing 8.5.7.3 to become 8.5.7.4) as follows:

8.5.7.3 Interior wall and ceiling finish materials tested in accordance with NFPA 265 or NFPA 286 as permitted by Section 10.2 (NFPA 101), and meeting the criteria established in Section 10.2 (NFPA 101) for those test standards, shall be scored as Class A interior finish materials (flame spread ≤25).

**Committee Statement:** The committee action does what the submitter requested. The language, as drafted by the committee, should meet the submitter's intent. For correlation throughout the document, additional sections were similarly revised. The corresponding action on the proposed new FSES for educational occupancies was made as the committee action to Comment 101A-8 (Log #4).

**Number Eligible to Vote:** 15

**Ballot Results:** Affirmative: 11 Abstain: 1

**Vote Not Returned:** 3 FRUTH, JARDIN, TASTO

**Explanatin of Abstention:**

KOFFEL: I have abstained on Comment 101A-1 (Log #3) based upon Standards Council Policy.

101A-2 Log #2 **Final Action: Accept in Principle**  
(Table 7.5.4(A))

**Submitter:** Kenneth S. Faulstich, US Department of Veterans Affairs  
**Comment on Proposal No:**101A-7  
**Recommendation:** Revise the mandatory values in Table 7.5.4A, mandatory requirements - large facilities (new) to only reflect the changes necessary due to the deletion of the evacuation capabilities for new board and care large occupancies from NFPA 101 (2003 edition). Delete the additional 3 points (from -5 to a -2 under construction parameter for Type II (000), Type III (200) and Type V (000) added to the Sa, Sc, and Sd categories for building heights of ≤2 stories, and create separate mandatory values for heights >2 stories.

**Substantiation:** This calibration now requires more restrictive requirements than the standard it is reflecting - the Life Safety Code. As explained in my negative ballot (also see the ballot of the Technical Correlating Committee), this technical committee should leave it up to the board and care technical committee to decide the level of safety.

**Committee Meeting Action: Accept in Principle**

Revise Worksheet 7.5.4A as follows:

WORKSHEET 7.5.4A MANDATORY SAFETY REQUIREMENTS — NEW LARGE FACILITY				
Building Height	Control Requirement (S <sub>a</sub> )	Egress Requirement (S <sub>b</sub> )	Refuge Requirement (S <sub>c</sub> )	General Fire Safety Requirement (S <sub>d</sub> )
≤2 Stories	<del>12.5</del> 9.5	16.5	<del>13</del> 10	<del>19</del> 16
≥3 Stories	16.5	16.5	12	23

**Committee Statement:** The committee action does what the submitter requested. It recalibrates the line for ≤2 Stories to use a construction value of -5 for correlation with NFPA 101, rather than the value of -2 used in preparing the ROP. This should meet the submitter's intent.

**Number Eligible to Vote:** 15

**Ballot Results:** Affirmative: 11 Abstain: 1

**Vote Not Returned:** 3 FRUTH, JARDIN, TASTO

**Explanatin of Abstention:**

TAMIM: I cannot honestly form an opinion considering I have no back-up information on how these numbers were developed or add up to safe conditions.

101A-3 Log #1 **Final Action: Accept in Principle**  
(Table 7.7.4(B) through (E))

**Submitter:** Kenneth S. Faulstich, US Department of Veterans Affairs  
**Comment on Proposal No:**101A-8

**Recommendation:** Revise the mandatory values in Tables 7.7.4B through 7.7.4E, to only reflect the changes necessary due to the deletion of the evacuation capabilities for new apartment buildings and new board and care facilities located in existing apartment buildings. Delete the additional 3 points added to the Sa, Sc and Sd categories for building heights of ≥2 stories, and create separate mandatory values for heights > 2 stories.

**Substantiation:** This calibration now requires more restrictive requirements than the standard it is reflecting - the Life Safety Code. As explained in my negative ballot (also see the ballot of the Technical Correlating Committee), this technical committee should leave it up to the board and care technical committee to decide the level of safety.

**Committee Meeting Action: Accept in Principle**

Revise Worksheets 7.7.4B through 7.7.4E as follows:

WORKSHEET 7.7.4B MANDATORY SAFETY REQUIREMENTS — NEW APARTMENT BUILDINGS				
Building Height	Control Requirement (S <sub>a</sub> )	Egress Requirement (S <sub>b</sub> )	Refuge Requirement (S <sub>c</sub> )	General Fire Safety Requirement (S <sub>d</sub> )
1 Story	10	5	8	8
2 Stories	<del>12.5</del> 9.5	6	<del>7</del> 4	<del>11</del> 8
≥3 Stories	14.5	6	9	13

WORKSHEET 7.7.4C MANDATORY SAFETY REQUIREMENTS — NEW NONSPRINKLERED APARTMENT BUILDINGS MEETING EXCEPTION TO 30.3.5.2 (NFPA 101)				
Building Height	Control Requirement (S <sub>a</sub> )	Egress Requirement (S <sub>b</sub> )	Refuge Requirement (S <sub>c</sub> )	General Fire Safety Requirement (S <sub>d</sub> )
1 Story	4	12	4	12
2 Stories	<del>6.5</del> 3.5	13	<del>7</del> 4	<del>15</del> 12
≥3 Stories	8.5	13	9	17

**WORKSHEET 7.7.4D MANDATORY SAFETY REQUIREMENTS — NEW BOARD AND CARE FACILITIES LOCATED IN EXISTING NONSPRINKLERED APARTMENT BUILDINGS**

Building Height	Control Requirement (S <sub>a</sub> )	Egress Requirement (S <sub>b</sub> )	Refuge Requirement (S <sub>c</sub> )	General Fire Safety Requirement (S <sub>d</sub> )
1 Story	4	7	4	8
<u>2 Stories</u>	<u>1.5</u>	<u>8</u>	<u>2</u>	<u>6</u>
≥2 ≥3 Stories	4.5	8	5	9

**WORKSHEET 7.7.4E MANDATORY SAFETY REQUIREMENTS — NEW BOARD AND CARE FACILITIES LOCATED IN EXISTING SPRINKLERED APARTMENT BUILDINGS**

Building Height	Control Requirement (S <sub>a</sub> )	Egress Requirement (S <sub>b</sub> )	Refuge Requirement (S <sub>c</sub> )	General Fire Safety Requirement (S <sub>d</sub> )
1 Story	11	6.5	7	11
<u>2 Stories</u>	<u>8.5</u>	<u>7.5</u>	<u>5</u>	<u>9</u>
≥2 ≥3 Stories	11.5	7.5	8	12

**Committee Statement:** The committee action does what the submitter requested. It recalibrates the line for 2 Stories to use a construction value of -5 for correlation with NFPA 101, rather than the value of -2 used in preparing the ROP. This should meet the submitter’s intent.

**Number Eligible to Vote:** 15

**Ballot Results:** Affirmative: 11 Abstain: 1

**Vote Not Returned:** 3 FRUTH, JARDIN, TASTO

**Explanatin of Abstention:**

TAMIM: I cannot honestly form an opinion considering I have no back-up information on how these numbers were developed or add up to safe conditions.

101A-4 Log #CC1  
( Chapter 9 )

**Final Action: Accept**

**Submitter:** Technical Committee on Alternative Approaches to Life Safety  
**Comment on Proposal No:**101A-11

**Recommendation:** Delete Chapter 9, Computerized Fire Safety Evaluation System for Business Occupancies.

**Substantiation:** See the Standards Council directive of October 2002, Committee Officers Guide, Appendix A-15, Guideline on References in NFPA Documents to Computer Software. The Guideline prohibits the user manual currently contained in Chapter 9 from appearing in NFPA 101A. NFPA and its technical committee are prohibited from endorsing or certifying software. In a February 24, 2003 memo from Casey Grant, Secretary of NFPA Standards Council to Dave Stroup, Chair of NFPA Technical Committee on Alternative Approaches to Life Safety, Casey Grant writes: “Chapter 9 of 2001 edition of NFPA 101A is not appropriate subject matter for an NFPA document and should be removed in the next revision cycle. Please consider this information during the processing of the next edition of NFPA 101A at your upcoming ROC meeting. In particular, I note the committee-generated proposal 101A-11 (Log #CP3) in the November 2003 ROP provides a venue for this matter to be directly addressed.”

**Committee Meeting Action: Accept**

**Number Eligible to Vote:** 15

**Ballot Results:** Affirmative: 10 Abstain: 2

**Vote Not Returned:** 3 FRUTH, JARDIN, TASTO

**Explanatin of Abstention:**

BUDNICK: In my opinion NFPA took the easy way out regarding software. There is no reason why NFPA couldn’t get software for standards use just as UL gets software for product evaluation/listings. Unfortunately, this is out of the committee’s hands.

WATTS: I agree with Ed Budnick that computer software has a major role in the future application of NFPA standards. In the case of 101A, NFPA distributed software, e.g., ALARM, has been available for many years.

101A-5 Log #7  
( 10.2.1.1 )

**Final Action: Accept in Principle**

**Submitter:** William E. Koffel, Koffel Assoc., Inc.

**Comment on Proposal No:**101A-12

**Recommendation:** Delete the text within the parenthesis that permits 45-minute fire protection rated doors serving stair enclosures in other than existing buildings.

**Substantiation:** NFPA 101 requires 60-minute fire protection rated doors in new stair enclosures.

**Committee Meeting Action: Accept in Principle**

Revise 10.2.1.1 by deleting the parenthetical allowance for 45-minute doors as follows

**10.2.1.1** Zoning must divide the building into units that consist of one or more complete fire/smoke zones. A fire/smoke zone is a portion of a building that is separated from all other portions of the building by building construction having at least a 1-hour fire resistance rating or smoke barriers having a 30-minute fire resistance rating and conforming to the requirements of Section 8.3 (NFPA 101), or a combination of both. Any vertical openings (shafts, stairs) involved also must provide 1-hour separation (~~except that stair doors shall be permitted to be 45-minute fire protection-rated doors~~). In facilities completely protected by automatic sprinkler protection, these fire resistance requirements do not apply. The elements separating one zone from another, however, must be of sound, smoke-resisting construction. Doors in zone separations must be either self-closing or equipped with automatic closers operated by smoke detectors.

Make a similar deletion of parenthetical text from the first sentence of the second paragraph of 8.2.1.1 as follows:

Any vertical openings (shafts, stairs) involved also must provide 1-hour separation (~~except that stair doors shall be permitted to be 45-minute fire protection-rated doors~~). In facilities completely protected by automatic sprinkler protection, these fire resistance requirements do not apply. The elements separating one zone from another, however, must be of sound, smoke-resisting construction. Doors in zone separations must be either self-closing or equipped with automatic closers operated by smoke detectors.

**Committee Statement:** The committee action does what the submitter requested, but explicitly shows the words that will be deleted. NFPA 101-2003, 8.3.4.3 permits the 45-minute fire protection-rated door only if the door is existing. The user will learn this by directly referencing NFPA 101. For correlation, a corresponding change was made to 8.2.1.1

**Number Eligible to Vote:** 15

**Ballot Results:** Affirmative: 12

**Vote Not Returned:** 3 FRUTH, JARDIN, TASTO

101A-6 Log #6  
( 10.3.2.1 )

**Final Action: Accept in Principle**

**Submitter:** William E. Koffel, Koffel Assoc., Inc.

**Comment on Proposal No:**101A-12

**Recommendation:** Delete “or economical”.

**Substantiation:** Selecting zones solely on the basis of economical results is not appropriate. Zones should be selected based on what provides the best analysis of a building’s fire protection features.

**Committee Meeting Action: Accept in Principle**

From paragraph 10.3.2.1, delete the last sentence as follows:

**10.3.2.1** The entire building can be evaluated on a single set of worksheets. The building might, however, be zoned by considering each zone separately or by using any convenient grouping of zones. ~~The choice of zoning normally is based on the approach that produces the most functional or economical results.~~

From paragraph 8.3.2.1, delete the last sentence as follows:

**8.3.2.1** The entire building can be evaluated on a single set of worksheets. The building might, however, be zoned by considering each zone separately or by using any convenient grouping of zones. ~~The choice of zoning normally is based on the approach that produces the most functional or economical results.~~

**Committee Statement:** The deletion of the entire sentence should meet the submitter’s intent. The sentence adds nothing and is not needed. For correlation, a corresponding change was made to 8.3.2.1.

**Number Eligible to Vote:** 15

**Ballot Results:** Affirmative: 12

**Vote Not Returned:** 3 FRUTH, JARDIN, TASTO

101A-7 Log #5  
( 10.5.1 )

**Final Action: Accept in Principle**

**Submitter:** William E. Koffel, Koffel Assoc., Inc.

**Comment on Proposal No:**101A-12

**Recommendation:** Revise (a) to require a two-hour fire barrier to separate buildings, including 90 minute opening protectives.

**Substantiation:** Separating buildings by one-hour fire barriers and 45-minute opening protectives is not consistent with the requirements of Chapter 8 of NFPA 101. See Comment on Affirmative ballot during the proposal phase that I submitted. It should also be noted that fire windows are permitted in one-hour fire barriers but not in two-hour fire barriers.

**Committee Meeting Action: Accept in Principle**

Revise proposed 10.5.1(a) to read:

(a) Separate buildings where the separation between the portions of the building is a fire barrier having at least a ~~2-hour 1-hour~~ fire resistance rating and any opening protectives have at least a 1 1/2-hour 45-minute fire protection rating.

**Committee Statement:** The committee action accomplishes what the submitter requested which is to achieve correlation with NFPA 101 Chapter 8.

**Number Eligible to Vote:** 15

**Ballot Results:** Affirmative: 12

**Vote Not Returned:** 3 FRUTH, JARDIN, TASTO

101A-8 Log #4  
( 10.5.7.2 )

**Final Action: Accept in Principle**

**Submitter:** William E. Koffel, Koffel Assoc., Inc.

**Comment on Proposal No:**101A-12

**Recommendation:** The paragraph needs to be revised to recognize other testing procedures permitted by NFPA 101.

**Substantiation:** NFPA 255 is no longer the only means to evaluate the interior finish in accordance with NFPA 101.

**Committee Meeting Action: Accept in Principle**

Insert a new 10.5.7.3 (and renumber ROP-proposed 10.5.7.3 to become 10.5.7.4) as follows:

**10.5.7.3** Interior wall and ceiling finish materials tested in accordance with NFPA 265 or NFPA 286 as permitted by Section 10.2 (NFPA 101), and meeting the criteria established in Section 10.2 (NFPA 101) for those test standards, shall be scored as Class A interior finish materials (flame spread ≤25).

**Committee Statement:** The committee action does what the submitter requested. The language, as drafted by the committee, should meet the submitter's intent. For correlation throughout the document, additional sections of NFPA 101A were similarly revised via the committee action on Comment 101A-1 (Log #3).

**Number Eligible to Vote:** 15

**Ballot Results:** Affirmative: 11 Abstain: 1

**Vote Not Returned:** 3 FRUTH, JARDIN, TASTO

**Explanatin of Abstention:**

KOFFEL: I have abstained on Comment 101A-8 (Log #4) based upon Standards Council Policy.