

Address List No Phone

05/16/2012
Tracy L. Golinveaux
BLD-SCM

Structures, Construction, and Materials

Building Code

Peter J. Willse Chair XL Global Asset Protection Services 100 Constitution Plaza, 12th Floor Hartford, CT 06103	I 3/21/2006 BLD-SCM	Jesse J. Beitel Principal Hughes Associates, Inc. 3610 Commerce Drive, Suite 817 Baltimore, MD 21227-1652	SE 3/21/2006 BLD-SCM
Paul D. Coats Principal American Wood Council 4695 Hannah Drive Rock Hill, SC 29732 Alternate: Dennis L. Pitts	M 3/1/2011 BLD-SCM	David S. Collins Principal The Preview Group, Inc. 632 Race Street Cincinnati, OH 45202 American Institute of Architects	SE 3/21/2006 BLD-SCM
Ralph Dorio Principal Insurance Services Office, Inc. 545 Washington Boulevard Jersey City, NJ 07310-1686	I 3/21/2006 BLD-SCM	Jeffrey Feid Principal State Farm Insurance Company One State Farm Plaza, D-1 Bloomington, IL 61710-0001	I 3/21/2006 BLD-SCM
William E. Fitch Principal Phyrefish.com 31 SE 5th Street, Suite 3815 Miami, FL 33131-2528	SE 3/1/2011 BLD-SCM	Michael A. Gardner Principal Gypsum Association 6525 Belcrest Road, Suite 480 Hyattsville, MD 20782	M 3/21/2006 BLD-SCM
Mark S. Graham Principal National Roofing Contractors Association 10255 West Higgins Road, Suite 600 Rosemont, IL 60018-5607	IM 10/4/2007 BLD-SCM	J. C. Harrington Principal FM Global 1151 Boston Providence Turnpike PO Box 9102 Norwood, MA 02062-9102 Alternate: Richard J. Davis	I 3/21/2006 BLD-SCM
Joseph T. Holland Principal Hoover Treated Wood Products 1225 North Halifax Avenue Daytona Beach, FL 32118 Alternate: David G. Bueche	M 3/21/2006 BLD-SCM	Karl D. Houser Principal EBL Engineers, LLC EBL Fire Engineering 8005 Harford Road Baltimore, MD 21234-5701 Association of the Wall and Ceiling Industries International	IM 3/1/2011 BLD-SCM
Bonnie E. Manley Principal American Iron and Steel Institute 41 Tucker Road Norfolk, MA 02056 Alternate: Farid Alfawakhiri	M 3/21/2006 BLD-SCM	Joseph J. Messersmith, Jr. Principal 11479 Primose Lane Rockville, VA 23146 Portland Cement Association Alternate: Stephen V. Skalko	M 3/21/2006 BLD-SCM

Address List No Phone

05/16/2012

Tracy L. Golinveaux

BLD-SCM

Structures, Construction, and Materials

Building Code

Eugene M. Novak, Jr.	E 3/21/2006	Kristen L. Owen	M 10/18/2011
Principal Commonwealth of Massachusetts Department of Public Safety 19 Partridge Road Framingham, MA 01701-4242	BLD-SCM	Principal Arch Wood Protection, Inc., A Lonza Company 156 Worchester Drive Valparaiso, IN 46383	BLD-SCM
Robert A. Speed	E 03/05/2012	Joseph H. Versteeg	E 3/21/2006
Principal North Carolina Office of the State Fire Marshal Engineering Division, Evaluation Services Section 322 Chapanoke Road Raleigh, NC 27603	BLD-SCM	Principal Versteeg Associates 86 University Drive Torrington, CT 06790 International Fire Marshals Association	BLD-SCM
Farid Alfawakhiri	M 7/23/2008	David G. Bueche	M 7/28/2006
Alternate American Iron and Steel Institute 380 Cottonwood Lane Naperville, IL 60540 Principal: Bonnie E. Manley	BLD-SCM	Alternate Hoover Treated Wood Products 13768 West Asbury Circle Lakewood, CO 80228 Principal: Joseph T. Holland	BLD-SCM
Richard J. Davis	I 3/21/2006	Moriel E. Kaplan	I 10/27/2009
Alternate FM Global 1151 Boston-Providence Turnpike PO Box 9102 Norwood, MA 02062-9102 Principal: J. C. Harrington	BLD-SCM	Alternate Aon/Schirmer Engineering Corporation 6305 Ivy Lane, Suite 220 Greenbelt, MD 20770	BLD-SCM
Dennis L. Pitts	M 3/21/2006	Stephen V. Skalko	M 3/21/2006
Alternate American Wood Council 1721 West Plano Parkway, #224 Plano, TX 75075 Principal: Paul D. Coats	BLD-SCM	Alternate Portland Cement Association 128 Summerfield Drive Macon, GA 31210 Portland Cement Association Principal: Joseph J. Messersmith, Jr.	BLD-SCM
Tracy L. Golinveaux	01/04/2010		
Staff Liaison National Fire Protection Association 1 Batterymarch Park Quincy, MA 02169-7471	BLD-SCM		



National Fire Protection Association

1 Batterymarch Park, Quincy, MA 02169-7471
Phone: 617-770-3000 • Fax: 617-770-0700 • www.nfpa.org

**NFPA 703 and NFPA 5000 ROC Meeting Minutes of the
Technical Committee on Structures, Construction and Materials**
Tuesday, October 5, 2010
Hotel Monteleone
New Orleans, Louisiana

Item 1, Call to Order.

The meeting of the NFPA 703 and NFPA 5000 Technical Committee on Structures, Construction and Materials was called to order by Chair Peter J. Willse at 8:00 a.m. on Tuesday, October 5, 2010, at the Hotel Monteleone, New Orleans, LA.

Item 2, Introduction of Committee Members and Guests.

The chair opened the meeting with welcoming remarks, and self-introductions of meeting attendees and guests were conducted.

The following principal and alternate members were present:

NAME

COMPANY

Peter Willse, Chair	XL Global Asset Protection Services
David Bueche (Alternate to J. Holland)	Hoover Treated Wood Products
David Collins, Principal	The Preview Group, Inc.
Ralph Dorio, Principal	Rep. American Institute of Architects
Jeffrey Feid, Principal	Insurance Services Office, Inc.
J. C. Harrington, Principal	State Farm Insurance Company
Bonnie Manley, Principal	FM Global
Dennis Pitts, Principal	American Iron and Steel Institute
Joseph Versteeg, Principal	American Forest & Paper Association
John Younghusband, Principal	Versteeg Associates
Tracy Golinveaux, Staff	Rep. International Fire Marshals Association
	Aon/Schirmer Engineering Corporation
	NFPA Staff

The following Technical Committee Principal Members were absent (with no alternate present):

NAME

COMPANY

Jesse Beitel, Principal	Hughes Associates, Inc.
-------------------------	-------------------------

Michael Gardner, Principal
Mark Graham, Principal
Alfred Hogan, Principal
Joseph Messersmith, Principal
Eugene Novak, Principal
James Rossberg, Principal

Gypsum Association
National Roofing Contractors Association
Rep. New England Association of Fire Marshals
Rep. Portland Cement Association
Commonwealth of Massachusetts
American Society of Civil Engineers

GUESTS

NAME

COMPANY

Robert Eugene
Allan Fraser
Marcelo Hirschler
Robert Wessel

Underwriters Laboratories Inc.
NFPA Staff
GBH International
Gypsum Association

Item 3, Approval of Minutes.

The September 22, 2009 NFPA 703 and 5000 meeting minutes were approved as written and distributed.

Item 4, The Revision Process.

Ms. Golinveaux introduced a PowerPoint presentation explaining the actions the committee can take at the ROC phase of the revision cycle. In addition, she discussed the new Document Information pages on NFPA's website. It should be noted that all meeting information including agendas and minutes will be posted under the "next edition" tab of these pages. The pages can be accessed at www.nfpa.org/5000 or www.nfpa.org/703.

Item 5, NFPA 703 ROC Preparation.

All comments were reviewed and acted on. See the ROC Ballot.

Item 6, NFPA 5000 ROC Preparation.

All comments were reviewed and acted on. See the ROC Ballot.

Item 7, New Business.

Staff reviewed two requests from the Fire Protection Research Foundation for ideas for new research and feedback on the new NIST laboratory.

Item 8, Date and Location of Next Meeting.

The committee will need to meet in the Fall of 2012 to prepare the Reports on Proposals (ROPs) for the 2015 editions of NFPA 101 and NFPA 5000. Meeting notices will be distributed when the date and location have been confirmed.

Item 9, Adjournment.

The meeting was adjourned at 5:00 PM.

Attachments

NFPA First Draft Meetings



Welcome TCs on
Structures, Construction and Materials

May 22, 2012
Indianapolis, IN



5/17/2012

NFPA First Draft Meetings



At this and all NFPA committee meetings we are concerned with your safety. If the fire alarm sounds, please proceed to an exit.



5/17/2012

NFPA First Draft Meetings

- Members, please verify/update your contact information
- Use of tape recorders or other means capable of reproducing verbatim transcriptions of this or any NFPA meeting is not permitted

5/17/2012

NFPA First Draft Meetings

- Guests
 - All guests are required to sign in and identify their affiliations.
 - Participation is limited to those individuals who have previously requested of the chair time to address the committee on a particular subject or individuals who wish to speak to Public Input they have submitted.
 - Guest chairs are located around the room as a courtesy.

5/17/2012

NFPA First Draft Meetings

Members categorized in ANY interest category who have been retained to represent the interests of ANOTHER interest category (with respect to a specific issue or issues that are to be addressed by a TC/CC) shall declare those interests to the committee and refrain from voting on any Public Input, Comment, or other matter relating to those issues.

5/17/2012

NFPA First Draft Meetings New Process

- **General Procedures**
 - Follow Robert's Rules of Order.
 - Discussion requires a motion.

5/17/2012

NFPA First Draft Meetings

- **Motions for Ending Debate Previous Question or “Call the Question”**

- Not in order when another has the floor
- Requires a second
- This motion is not debatable and DOES NOT automatically stop debate
- A 2/3 affirmative vote will immediately close debate and return to the original motion on the floor. Less than 2/3 will allow debate to continue.

5/17/2012

NFPA First Draft Meetings

- **Committee member actions:**

- Member addresses the chair.
- Receives recognition from the chair.
- Introduces the motion.
- Another member seconds the motion.

5/17/2012

NFPA First Draft Meetings

- **Committee chair actions:**
 - States the motion.
 - Calls for discussion.
 - Ensures all issues have been heard.
 - Takes the vote.
 - Announces the result of the vote.

5/17/2012

NFPA First Draft Meetings

- **Technical Committee on Building Construction**
 - Enforcers, 3 Members: 17%
 - Insurance, 4 Members: 22%
 - Installer/Maintainer, 2 Members: 11%
 - Labor, 0 Member: 0%
 - Manufacturers, 6 Members: 33%
 - Research & Testing, 0 Member: 0%
 - Special Experts, 3 Members: 17%
 - Users, 0 Members: 0%

5/17/2012

NFPA First Draft Meetings




Timeline

- **Public Input Stage (First Draft):**
 - First Draft Meeting: May 21, 2012
 - Posting of First Draft for Balloting Date: October 12, 2012
 - Posting of First Draft for Public Comment: November 16, 2012
- **Comment Stage (Second Draft):**
 - Public Comment Closing Date: May 3, 2013
 - Second Draft Meeting Period: May – July 12, 2013
 - Posting of Second Draft for Balloting Date: September 13, 2013
 - Posting of Second Draft for NITMAM: January 3, 2014
- **Tech Session Preparation:**
 - NITMAM Closing Date: February 7, 2014
 - NITMAM /CAM Posting Date: April 4, 2014
 - NFPA Annual Meeting: June 9-12, 2014
- **Standards Council Issuance:**
 - Issuance of Consent Documents: June 2014 with 2015 edition date
 - Issuance of Documents with CAM: August 14, 2014 with 2015 edition date

5/17/2012

NFPA First Draft Meetings New Process – What’s New?



- **Changes in Terms:**

New Term	Old Term
Input Stage	ROP Stage
Public Input	Proposal
First Draft Meeting	ROP Meeting
Committee Input	“Trial Balloon” (or later, FR that fails ballot)
Committee Statement (CS)	Committee Statement
First Revision (FR)	Committee Proposal or Accepted Public Proposal
First Draft Report	ROP
First Draft	ROP Draft

5/17/2012

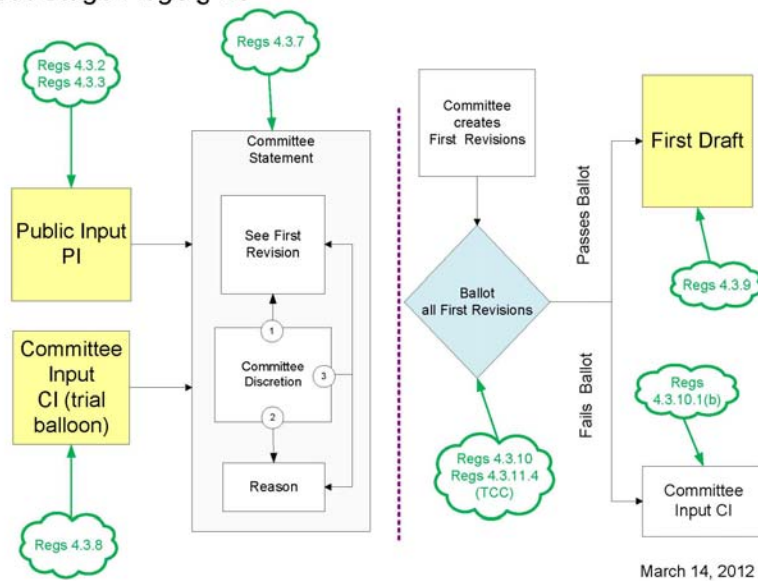
NFPA First Draft Meetings New Process – What's New?

- Changes in Terms:

New Term	Old Term
Comment Stage	ROC Stage
Public Comment	Public Comment
Second Draft Meeting	ROC Meeting
Committee Comment	Comment that Failed Ballot (Second Revision that failed ballot)
Second Revision	Committee Comment or Accepted Public Comment
Second Draft Report	ROC
Second Draft	ROC Draft

5/17/2012

The New NFPA Standards Development Process – Input Stage Regs §4.3



NFPA First Draft Meetings New Process

NEW Committee Actions and Motions:

- Resolve Public Input
- Create a First Revision
- Create a Committee Input (Trial Balloon)

5/17/2012

First Draft New Process

- **Resolve a Public Input (No Change to Text):**
 - Committee does not want to incorporate the Public Input as a revision.
 - Committee develops a Committee Statement (CS) to respond (resolve) a Public Input.
 - Committee must clearly indicate reasons for not accepting the recommendation in CS.
 - Does not get balloted

5/17/2012

First Draft New Process

- **Create a First Revision (FR)**
 - Committee wants to make a change to a current section.
 - Committee develops a Committee Statement (CS) substantiating the change.
 - If the revision is associated with one or more Public Input (s), the Committee develops a CS to respond to each PI.
 - Each FR gets balloted

5/17/2012

First Draft New Process

- **Create a Committee Input (Trial Balloon)**
 - Committee wants to receive Public Comment on a topic, but not ready to incorporate it into the draft
 - Need to have a Committee Statement
 - Does not get balloted

5/17/2012

First Draft
New Process

- **Committee Statements (Substantiation):**
 - All Public Input must have a Committee Statement
 - Must include a valid technical reason
 - No vague references to “intent”
 - Explain how the submitter’s substantiation is inadequate

5/17/2012

First Draft
New Process

- **Committee Statements (Substantiation):**
 - Should reference the First Revision if it addresses the intent of the Submitter’s Public Input

5/17/2012

First Draft New Process

- **Formal voting**

- Voting during meeting is used to establish a sense of agreement (simple majority)
- Secured by letter ballot (2/3 agreement)
- Only the results of the formal ballot determine the official position of the committee on the First Draft

5/17/2012

First Draft New Process

- **Ballots are on the First Revisions (FR) ONLY**

- Public Input and Committee Input not balloted
- Reference materials are available:
 - First Draft, PI, CI, CS, etc

- **Ballot form allows you to vote:**

- Affirmative on all FR
- Affirmative on all FR with exceptions specifically noted

- **Ballot form provides a column for affirmative with comment**

- Note: This box only needs to be checked if there is an accompanying comment.

- **Reject or abstain requires a reason.**

5/17/2012

First Draft New Process

- **Initial ballot**
- **Circulation of negatives and comments**
- **Members may change votes during circulation**
- **First Revision that fails letter ballot becomes Committee Input (CI) – just like the trial balloon version of CI – so as to solicit Public Comment**

5/17/2012

First Draft New Process

- **Balloting**
 - Ballots will be an online format
 - Alternates are strongly encouraged to return ballots

5/17/2012

NFPA First Draft Meetings

- No New Material after the Public Input Stage
- What constitutes new material is to some extent a judgment call

5/17/2012



THE FIRE PROTECTION RESEARCH FOUNDATION

TC Struggles with an Issue

- TC needs data on a new technology or emerging issue
- Two opposing views on an issue with no real data
- Data presented is not trusted by committee

Code Fund Lends a Hand

- TC rep and/or staff liaison submits a Code Fund Request
- Requests are reviewed by a Panel and chosen based on need / feasibility

Research Project Carried Out

- Funding for project is provided by the Code Fund and/or industry sponsors
- Project is completed and data is available to TC

www.nfpa.org/codefund

5/17/2012

Legal



Antitrust: the single most important provision-
Federal law prohibits contracts, combinations, or conspiracies which unreasonably restrain trade or commerce. *Section 1 of the Sherman Act*

Patent: Disclosures of essential patent claims should be made by the patent holder, but others may also notify NFPA if they believe that a proposed or existing NFPA standard includes an essential patent claim.

5/17/2012

Legal



- **Activities Disapproved by the Courts**
 - Packing meetings
 - Hiding commercial interest throwing the committees out of balance
 - No final decision-making authority to unbalanced Task Groups; include all interested parties.
 - Hiding scientific or technical information from committees

5/17/2012

Doc Info Pages

Document Information

- Document scope
- Current/Previous Edition information
- Issued TIAs, FIs and Errata
- Archived revision information
- Standard Council Decisions
- Articles and Reports
- Read only document

Next Edition

- Meetings and Ballots
- ROP/ROC or First Draft Report and Second Draft Report
- NITMAM and Standard Council Decisions
- Submission of Public Input/Comment
- Private TC info
 - Ballot circulations, informational ballots and other committee info

Technical Committee


- Committee name, responsibility and scope
- Staff liaison
- Committee list
 - Private committee contact information
 - Current committee documents in PDF format
- Committees seeking members and committee online application

5/17/2012

NFPA First Draft Meetings

Thank you for participating!

Any questions?



5/17/2012

5000- Log #98 BLD-SCM
(32.4.3)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Revise definition to read as follows:

32.4.3 Coverings. Awnings and canopies shall be permitted to have a combustible covering that meets the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*, or that meets the requirements of Class A in accordance with Chapter 10.

Substantiation: In 1989 the NFPA Technical Committee on Fire Tests eliminated the so-called “small-scale test” from NFPA 701 because the results had been shown not to represent a fire performance that corresponded to what happened in real scale. Instead of the “small-scale test” NFPA 701 now (and for over 20 years) contains two tests (Test 1 and Test 2), which apply to materials as indicated by the text of NFPA 701 (2010) that is shown at the bottom of this public input.

However, a large number of manufacturers continue stating that the materials or products that they sell have been tested to NFPA 701, when they really mean the pre-1989 small-scale test in NFPA 701. That test no longer exists and materials or products meeting that test do not exhibit acceptable fire performance.

Text of NFPA 701 (2010):

1.1.1.1 Test Method 1 shall apply to fabrics or other materials used in curtains, draperies, or other window treatments. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.2 Test Method 1 shall apply to single-layer fabrics and to multilayer curtain and drapery assemblies in which the layers are fastened together by sewing or other means. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.3 Test Method 1 shall apply to specimens having an areal density less than or equal to 700 g/m² (21 oz/yd²), except where Test Method 2 is required to be used by 1.1.2.

1.1.2.1 Test Method 2 (flat specimen configuration) shall be used for fabrics, including multilayered fabrics, films, and plastic blinds, with or without reinforcement or backing, with areal densities greater than 700 g/m² (21 oz/yd²).

1.1.2.2 Test Method 2 shall be used for testing vinyl-coated fabric blackout linings and lined draperies using a vinyl-coated fabric blackout lining.

1.1.2.3 Test Method 2 shall be used for testing plastic films, with or without reinforcement or backing, when used for decorative or other purposes inside a building or as temporary or permanent enclosures for buildings under construction.

1.1.2.4 Test Method 2 shall apply to fabrics used in the assembly of awnings, tents, tarps, and similar architectural fabric structures and banners.

Note also the following from the text of NFPA 701 (2010):

1.2* Purpose.

1.2.1 The purpose of Test Methods 1 and 2 shall be to assess the propagation of flame beyond the area exposed to the ignition source.

A.1.1 A small-scale test method appeared in NFPA 701 until the 1989 edition. It was eliminated from the test method because it has been shown that materials that “pass” the test do not necessarily exhibit a fire performance that is acceptable. The test was not reproducible for many types of fabrics and could not predict actual full-scale performance. It should not, therefore, be used.

A.1.1.1 For the purposes of Test Method 1, the terms curtains, draperies, or other types of window treatments, where used, should include, but not be limited to, the following items:

- (1) Window curtains
- (2) Stage or theater curtains
- (3) Vertical folding shades
- (4) Roll-type window shades
- (5) Hospital privacy curtains
- (6) Window draperies

- (7) Fabric shades or blinds
- (8) Polyvinyl chloride blinds
- (9) Horizontal folding shades
- (10) Swags

Examples of textile items other than window treatments to which Test Method 1 applies include:

- (1) Table skirts
- (2) Table linens
- (3) Display booth separators
- (4) Textile wall hangings
- (5) Decorative event tent linings not used in the assembly of a tent

5000- Log #241 BLD-SCM
(35.1.2.3(4))

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

- (4) ANSI/~~AF&PA~~ AWC WFCM, Wood Frame Construction Manual for One- and Two- Family Dwellings

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #238 BLD-SCM
(35.1.2.8.7)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

35.1.2.8.7 Wood. The deflection of wood structural members shall not exceed that permitted by ANSI/~~AF&PA~~ AWC NDS, National Design Specifications (NDS) for Wood Construction; ~~AF&PA~~ AWC NDS Supplement, NDS Supplement — Design Values for Wood Construction; and ~~AF&PA~~ AWC SDPWS, Special Design Provisions for Wind and Seismic.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #71 BLD-SCM
(36.5.7)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Part I: Revise text as follows:

~~36.5.7 Structural Steel Shapes. The materials used for structural steel piles~~Steel used in pile foundations shall satisfy the requirements of this section~~conform to the requirements of 36.5.7.1 through 36.5.7.3.~~

~~36.5.7.1 Materials used for structural steel piles shall conform to the requirements of Chapter 44.~~Materials used in steel pile foundations shall conform to the following:

1. Structural steel H-piles and structural steel sheet piling: ASTM A 6.

2. Steel pipe piles: ASTM A 252.

3. Fully welded steel piles fabricated from plates: ASTM A 36, ASTM A 283, ASTM A 572, ASTM A 588, or ASTM A 690.

~~36.5.7.2 The sections used shall be rolled sections or comparable fully welded built-up sections from plate.~~Steel pile foundations shall satisfy the requirements of this section.

~~36.5.7.2.1 Structural steel H-piles. Sections of structural steel H-piles shall comply with the requirements for HP shapes in ASTM A 6, or the all of the following:~~

1. The flange projections are not greater than 14 times the minimum thickness of metal in either the flange or the web, and the flange widths are not less than 80 percent of the depth of the section;

2. The nominal depth in the direction of the web is not less than 8 inches (203 mm); and

3. Flanges and web have a minimum nominal thickness of 3/8 inch (9.5 mm).

~~36.5.7.2.2 Fully welded steel piles fabricated from plates. Sections of fully welded steel piles fabricated from plates shall comply with all of the following:~~

1. The flange projections are not greater than 14 times the minimum thickness of metal in either the flange or the web, and the flange widths are not less than 80 percent of the depth of the section;

2. The nominal depth in the direction of the web is not less than 8 inches (203 mm); and

3. Flanges and web have a minimum nominal thickness of 3/8 inch (9.5 mm).

~~36.5.7.2.3 Structural steel sheet piling. Individual sections of structural steel sheet piling shall conform to the profile indicated by the manufacturer, and shall conform to the general requirements specified by ASTM A 6.~~

~~36.5.7.3 Every section shall have an average thickness of metal of not less than 3/8 in. (9.5 mm). The allowable stress shall not exceed 50 percent of the minimum specified yield strength of the material.~~

Substantiation: Part I of this Public Input improves the clarity of Section 36.5.7 as it applies to steel pile foundations. First, the section assigns the appropriate ASTM references to the applicable foundation elements. Next, the additional dimensional requirements for structural steel H-piles, fully welded steel piles fabricated from plates, and structural steel sheet piling are listed. Within the section on structural steel H-piles, Section 36.5.7.2.1, reference is made to ASTM A 6 for HP shapes, which automatically satisfy the three specified dimensional limitations. Additionally, allowance is made for other structural steel H-pile shapes, if they meet the three specified dimensional limitations. Clarifying language is added as Section 36.5.7.2.2 permitting the three dimensional limitations to be applied to fully welded steel piles fabricated from plates. Finally, Section 36.5.7.2.3 is introduced for structural steel sheet piling requiring that the profiles conform to manufacturer's specifications and the general requirements in ASTM A 6.

Part II of this Public Input adopts the latest editions of the various ASTM standards into Chapter 2.

5000- Log #73 BLD-SCM
(37.3.1.1)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Revise text to read as follows:

37.3.1.1 The exposed wall envelope shall be designed and constructed to prevent the accumulation of water within the wall assembly by providing a means for draining water that enters the wall assembly to the exterior, or by providing an exterior wall covering, which acts as both a weather-resistant and water-resistive barrier. A water-resistive barrier behind the exterior veneer shall be provided behind the exterior veneer of a veneered exterior wall envelope. Protection against condensation in the exterior wall assembly shall be provided in accordance with Chapter 51.

Substantiation: This code change proposes to modify Section 37.3.1.1. The purpose is to resolve the confusion of metal wall systems versus veneered wall assemblies.

The intent of the modifications is to make clear the fundamental requirement for providing a means for draining water that enters a veneered or non-veneered wall assembly by moving this requirement to the preceding sentence that focuses on the prevention of accumulation of water within the wall assembly.

This modification also clarifies that the requirement for a water-resistive barrier is only applicable to a veneered system. We propose to allow those non-veneered systems to be exempted from the requirement for a water-resistive barrier as that is redundant. For example, the traditional non-veneered walls used for an engineered metal building utilize an exterior metal cladding attached to girts and a water-resistive barrier behind this exterior metal cladding is not required as the metal skin acts both as the weather-resistant barrier and water-resistive barrier. Another non-veneered example is the metal composite material system or insulated metal panel wall system which also serves in a similar capacity. The MCM and IMP systems constitute another type of metal cladding system where the edges of the panels are both interlocked and gasketed, thus acting as both a weather-resistant barrier and water-resistant barrier.

The remaining provisions of Section 37.3 remain unchanged.

5000- Log #74 BLD-SCM
(38.9.7.2)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Revise text to read as follows:

38.9.7.2 Slope Requirements. Minimum slopes for metal roof panels shall comply with the following:

- (1) The minimum slope for lapped, non-soldered seam metal roofs panels without applied lap sealant shall be 3 units vertical in 12 units horizontal (25 percent slope).
- (2) The minimum slope for lapped, non-soldered seam metal roofs panels with applied lap sealant shall be 1/2 vertical unit in 12 units horizontal (4 percent slope). Lap sealants shall be applied in accordance with the approved manufacturer's installation instructions.
- (3) The minimum slope for standing seam metal roof panel systems shall be 1/4 unit vertical in 12 units horizontal (2 percent slope).

Substantiation: These minor editorial modifications bring consistency to the terminology used throughout the section.

5000- Log #75 BLD-SCM
(38.9.7.7)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Revise text to read as follows:

38.9.7.7 Fastener Requirements. Metal roof panels shall be secured to the supports in accordance with approved manufacturers' fasteners. In the absence of manufacturers' recommendations, the following fasteners shall be used:

- (1) Galvanized fasteners shall be used for steel roofs.
- (2) Hard copper or copper alloy shall be used for copper roofs.
- (3) Stainless steel fasteners shall be permitted for all types of metal roofs.
- (4) Aluminum fasteners shall be permitted for aluminum roofs attached to aluminum supports.

Substantiation: New language provides acceptable construction methods for aluminum-only roof systems.

5000- Log #76 BLD-SCM
(38.9.7.8)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Revise text to read as follows:

38.9.7.8 Wind Requirements.

38.9.7.8.1 Through-fastened metal panel roof assemblies shall be tested for wind resistance in accordance with one of the following applicable tests:

- (1) ASTM E 1592, *Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference*
- (2) FM 4471, *Approval Standard for Class I Panel Roofs*
- (3) ANSI/UL 580, *Standard for Tests for Uplift Resistance of Roof Assemblies*
- (4) ANSI/UL 1897, *Standard for Uplift Tests for Roof Covering Systems*

38.9.7.8.2* Except as noted in 38.9.7.8.3, standing seam metal panel roof assemblies shall be tested for wind resistance, where the test specimen contains not less than three full panel widths and not less than four full panel spans (five structural elements), in accordance with one of the following applicable tests:

- (1) ASTM E 1592, *Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference*
- (2) FM 4471, *Approval Standard for Class I Panel Roofs*
- ~~(3) ANSI/UL 580, *Standard for Tests for Uplift Resistance of Roof Assemblies*~~
- (4) ANSI/UL 1897, *Standard for Uplift Tests for Roof Covering Systems*

38.9.7.8.3 Metal roofs constructed of cold-formed steel, where the roof deck acts as the roof covering and provides both weather protection and support for structural loads, shall be permitted to be designed and tested in accordance with the applicable referenced structural design standard in Section 44.7.

Substantiation: The recommended language provides consistency with the uplift test requirements for standing seam roofs systems as specified in AISI S100, Section D6.2.1. AISI S100 requires that standing seam roofs be tested in accordance with ASTM E1592 to determine panel strength and UL580 is not an optional test for this type of roof system. Panel strengths for through fastened roofs, on the other hand, as specified in AISI S100, can be developed either analytically or through testing in accordance with either UL 580 or ASTM E1592.

5000- Log #174 BLD-SCM
(40.3.10)

Final Action:

Submitter: Thomas Sputo, Steel Deck Institute
Recommendation:

INSERT Include 5000_L174_Rec HERE

Substantiation: The test and inspection requirements for steel deck as currently contained in NFPA 5000 should be substituted by the SDI QA/QC 2011 standard. The SDI QA/QC-2011 Standard contains coordinated provisions for quality control and quality assurance inspection of steel floor and roof deck, and is intended to coordinate with the requirements of AISC 360 and AISC 341. The Standard clarifies the scope of required inspections and responsibilities of both the installer's quality control personnel and the quality assurance inspector. The Standard contains tables of inspection tasks that specifically list inspection requirements for material verification, deck installation, welding, and mechanical fastening. These tables amplify and clarify the basic inspection requirements for steel deck that were contained in NFPA 5000. This Standard was developed and approved through a consensus process under ANSI guidelines. This Standard, along with all other Steel Deck Institute (SDI) Standards, is available for free download from the SDI website for all parties. www.sdi.org.

This is not original material; its reference/source is as follows:

ANSI/SDI QA/QC 2011 Standard

40.3.10 Steel Construction.

Structural tests and inspections for steel materials, fabrication, and erection shall be as required by the following:

1. Structural steel construction shall comply with AISC 360 and AISC 341, as applicable.
2. Cold-formed steel light-frame construction shall comply with Table 40.3.10(a).
3. Steel deck construction shall comply with SDI QA/QC
4. Other steel construction shall comply with Table 40.3.10(b).

Table 40.3.10(a) Cold-Formed Steel Light-Frame Construction

Item	Scope (frequency determined by RDP responsible for design)
Cold-formed steel light-frame construction quality control review	Review contractor's field quality control procedures. Review scope of testing and inspections.
Fabricator's quality control procedures	Review fabricator's quality control procedures.
Material certification	Review for conformance to construction documents.
Fabrication inspection	Inspect in-plant fabrication, or review fabricator's approved independent inspection agency's reports.
Shear walls, diaphragms, and hold-downs	Inspect thickness and grade of wood structural panel, blocking, hold-down anchors, and the edge and field attachment of the structural wood panel to the framing for conformance to the submittals approved by the RDP responsible for design and the construction documents. Review panelized construction for proper wood structural panel overlaps.
Installation	Verify that type, size, quantity, location, details, and connections of framing and bracing members conform to submittals approved by the RDP responsible for design and the construction documents.
Welding	Check welders' qualifications. Verify that welding conforms to AWS specifications, submittals approved by the RDP responsible for design, and the construction documents. Visually inspect welds.
Other fasteners	Verify fastener type and installation procedures. Verify that fasteners conform to submittals approved by the RDP responsible for design and the construction documents. Verify that fasteners are installed tight.
Field correction of fabricated items	Review documentation of repair approved by the RDP responsible for design, and verify completion of repairs.
Steel construction quality control review	Review contractor's field quality control procedures. Review frequency and scope of field testing and inspections.
Fabricator certification/quality control procedures	Review each fabricator's quality control procedures.
Open web steel joists	Inspect for size, placement, bridging, bearing, and connection to structure. Visually inspect all field welds of a minimum of 5 percent of the joists, randomly selected.
Expansion and adhesive anchors	Review installation procedures for both mechanical anchors and adhesive anchors. Verify that materials are suitable for job conditions.

~~Metal decking Verify gauge width and type. Inspect placement, laps, welds, sidelap attachment, and screws or other mechanical fasteners. Check welder's qualifications.~~

Field correction of fabricated items Review documentation of repair approved by the RDP responsible for design, and verify completion of repairs.

5000- Log #77 BLD-SCM
(41.5.1.10)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Insert new Section 41.5.1.10 as follows:

41.5.1.10 General Requirements for Anchoring to Concrete. Section D. 3 of ACI 318 shall be modified by adding a new exception at the end of D.3.3.4 to read as follows:

D.3.3.4- Anchors shall be designed to be governed by the steel strength of a ductile steel element as determined in accordance with D.5.1 and D.6.1, unless either D.3.3.5 or D.3.3.6 is satisfied.

Exception: Section D.3.3.4 need not apply and the design shear strength in accordance with Section D.6.2.1(c) need not be computed for anchor bolts attaching cold-formed steel track of bearing or nonbearing walls of light-frame construction to foundations or foundation stem walls provided all of the following conditions are satisfied:

- (1) The maximum anchor nominal diameter is 5/8 inches (16 mm).**
- (2) Anchors are embedded into concrete a minimum of 7 inches (178 mm).**
- (3) Anchors are located a minimum of 13/4 inches (45 mm) from the edge of the concrete parallel to the length of the track.**
- (4) Anchors are located a minimum of 15 anchor diameters from the edge of the concrete perpendicular to the length of the track.**
- (5) The track is 33 to 68 mil designation thickness.**

Allowable in-plane shear strength of exempt anchors, parallel to the edge of concrete shall be permitted to be determined in accordance with AISI S100 Section E3.3.1.

Substantiation: ACI 318-08 Appendix D design provisions are required for calculation of the capacity of anchor bolt fastening cold-formed steel (CFS) bottom track sill plates to concrete foundations. These methods result in significantly reduced capacities for this connection when compared to historical values and legacy code requirements. The state of knowledge regarding this connection is ambiguous and does not support such a large reduction for a common assembly.

Recent experimental testing and analysis indicates that actual capacities of the track-to-concrete anchor bolt connection far exceed those historically used for design, supporting the use of AISI bolt-bearing design values for the connection. The experimental data used to support this code change proposal indicates that ductile steel failure rather than concrete failure modes control the capacity of the connection, so the need to calculate the capacity of the bolt related to concrete strength for proper embedment and edge spacing is superfluous.

Please note that testing results are posted at www.steel.org.

5000- Log #64 BLD-SCM
(44.1)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Part I: Modify Section 44.1 as follows:

44.1 General. The provisions of this chapter shall govern the quality, design, fabrication, and erection of steel ~~construction used structurally in buildings or structures.~~

44.1.1 Special Definitions. (Reserved)

44.1.2 Identification of Steel for Structures.

44.1.2.1 Steel ~~furnished for structural load-carrying purposes~~ shall be identified for conformity to the ordered grade in accordance with the specified ASTM standard or other specification and the provisions of this chapter.

44.1.2.2 Steel that is not identifiable as to grade shall be tested to determine conformity to the standards or specifications discussed in 44.1.2.1.

Substantiation: This proposal represents the results of a major effort to synchronize and coordinate the industry standards related to cold-formed steel framing. ASTM Committees C11 and A05, and AISI have been working within the steel framing industry on this "Code Synchronization" effort, the goal of which is to organize and maintain a single path for the building code requirements of cold-formed steel light frame construction products. To this end, a new document, AISI S220, was developed to contain all the necessary requirements for nonstructural products. AISI S220 represents a clarification and coordination of industry requirements. The Steel Framing Industry Association (SFIA), the Steel Stud Manufacturers Association (SSMA), the Association of the Wall and Ceiling Industry (AWCI), and the Gypsum Association (GA) all participated in this effort.

The proper integration of AISI S220 into the IBC requires the following changes:

- Section 44.1: The scope of this chapter now includes products that are non-structural. Therefore, the statement has been simplified to reflect the broad spectrum of steel construction.
- Section 44.1.2: AISI S220, Section A6.5 includes requirements that cover the identification and protection of nonstructural cold-formed steel framing, so this section has been simplified as well.
- Section 44.8.1: Because of the addition of the reference for nonstructural cold-formed steel framing, the lower limit of the minimum base thickness has been deleted and a reference has been added to AISI S220.
- Section 44.8.2: The charging language to AISI S211 has been clarified to reflect the distinction between AISI S211 and AISI S220.
- Section 47.2.1.5: The language has been clarified to refer to "structural" and "nonstructural" CFS studs and track. Additionally, AISI S200 and AISI S220 have been incorporated as the primary references. Only ASTM C645 Section 10, and ASTM C955 Section 8, which cover the requirements for the Penetration Test for screws, have been retained. These sections provide a procedure for evaluating the member's ability to pull the head of a screw below the surface of gypsum sheathing. At this time, AISI S220 does not include this test. Future editions may include it, allowing for the eventual deletion of the specific references to ASTM C645 and C955. AISI S200 and AISI S220 incorporate the material and manufacturing provisions previously included in ASTM C955 and ASTM C645 respectively. Limiting the specific references to ASTM C645 Section 10 and ASTM C955 Section 8 removes the "dual paths to code compliance", which has caused confusion in the cold-formed steel framing industry.
- Section 47.4.3.13: Corrects terminology.
- Chapter 2: Reflects the necessary addition to the referenced standards.

AISI has posted a review copy of AISI S220 on their website. To obtain a copy, please do the following:

Go to: www.steel.org

Click on the link "AISI Codes and Standards"

Then click on the link "Standards and Specifications"

Then click on the title of the standard, which is at the top of the list under "New Standards: To Be Referenced in Future Codes"

Note: Supporting material is available for review at NFPA Headquarters.

To review AISI S220, please visit www.steel.org > "AISI Codes and Standards"> "Standards and Specifications"

5000- Log #79 BLD-SCM
(44.2.1)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Revise as follows:

44.2.1 General.

~~44.2.1.1~~ The design, fabrication, and erection of structural steel for buildings and structures shall be in accordance with AISC 360, *Specification for Structural Steel Buildings*.

~~44.2.1.2~~ Web openings in structural steel beams shall be permitted to be designed in accordance with ASCE/SEI 23, *Specification for Structural Steel Beams with Web Openings*.

Substantiation: This standard, which is referenced as an additional resource for structural steel beams with web openings, has not been updated by ASCE since 1999. It is inappropriate to continue to reference an outdated standard. Additionally, AISC provides and maintains Design Guide 2: *Steel and Composite Beams with Web Openings*, (2003), which is available for a free download from the AISC ePubs website.

5000- Log #81 BLD-SCM
(44.5)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Revise as follows:

44.5 Steel Cable Structures.

~~44.5.1 General~~ The design, fabrication, and erection of steel cables for buildings, including related connections and protective coatings, shall be in accordance with ASCE/SEI 19, *Structural Applications of Steel Cables for Buildings*.

~~44.5.2 Seismic Requirements for Steel Cable~~ The design strength of steel cables shall be determined by the provisions of ASCE/SEI 19, except as modified by the following provisions:

(1) A load factor of 1.1 shall be applied to the prestress force included in ~~73~~ and ~~74~~, as defined in Section 3.1.2 of ASCE/SEI 19.

(2) In Section 3.2.1 of ASCE/SEI 19, item (c) shall be replaced with 1.5 ~~73~~ and item (d) shall be replaced with 1.5 ~~74~~.

Substantiation: With the update to ASCE/SEI 19, the seismic modifications to the document are no longer necessary. In fact, ASCE 7-10 Supplement 1-12, the source of this language, deletes these modifications.

5000- Log #83 BLD-SCM
(44.6)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Revise as follows:

44.6 Industrial Steel Storage Racks.

44.6.1 The design, testing, and utilization of industrial steel storage racks, made of cold-formed or hot-rolled steel structural members, shall be in accordance with ANSI MH16.1, *Specification for the Design, Testing and Utilization of Industrial Steel Storage Racks*.

44.6.2 Where required by ASCE/SEI 7, the seismic design of storage racks shall also be in accordance with the requirements of Section 15.5.3 of ASCE/SEI 7 ~~except that the mapped acceleration parameters S_s and S_1 shall be determined in accordance with 35.10.3~~

Substantiation: This modification adopts the latest edition of ANSI MH16.1 on steel storage racks. The 2011 edition of the standard is fully coordinated with ASCE 7-10 Supplement 1-12, consequently, the exception in Section 44.6.2 is no longer warranted.

The new USGS maps, and the mapped acceleration parameters included in Chapter 35, are included in the new 2011 edition of the RMI/ANSI MH 16.1 standard, as well as in the ASCE 7-2010 and Supplement 1. The new RMI Standard, which is included by reference in the ASCE 7, also includes clarification of Load Combinations (including vertical seismic effects), Redundancy Factors, Minimum Seismic Force for Above-Grade Installations, Beam-to-Column Rotational Capacity and Testing, and Periodic Inspection.

Note: Supporting material is available for review at NFPA Headquarters.

5000- Log #116 BLD-SCM
(44.7.2.2)

Final Action:

Submitter: Thomas Sputo, Steel Deck Institute

Recommendation: Revise text to read as follows:

44.7.2.2 Composite slabs of concrete on steel decks shall be designed and constructed in accordance with ASCE/SEI 3, Standard for the Structural Design of Composite Slabs, ~~ASCE ANSI/SDI-C-1.0, Standard for Composite Steel Floor Deck Slabs~~, or other approved standards.

Substantiation: Update reference standard from 2006 to 2011 version. Also, correct the title of the standard to change "ASCE" to "ANSI" and the designation from "C1.0" to "C".

Note: Supporting material is available for review at NFPA Headquarters.

5000- Log #118 BLD-SCM
(44.7.2.2)

Final Action:

Submitter: Thomas Sputo, Steel Deck Institute

Recommendation: Revise text to read as follows:

44.7.2.2 Composite slabs of concrete on steel decks shall be designed and constructed in accordance with ~~ASCE/SEI 3, Standard for the Structural Design of Composite Slabs, ASCE/~~ with ANSI/SDI C-1.0, Standard for Composite Steel Floor Deck, or other approved standards.

Substantiation: This Standard is proposed for deletion because ASCE 3-91 is outdated and has not been revised or reaffirmed since 1991. The ASCE committee responsible for this standard has been inactive since approximately 1997 and has taken no action on this standard since then. ASCE standards activities rules require standards to be reaffirmed at intervals not to exceed 5 years. This standard has been replaced by the ANSI/SDI-C-2011 Standard. The SDI held a meeting with ASCE staff in January 2012 and was informed that ASCE would not be updating the ASCE 3 standard in the future.

5000- Log #112 BLD-SCM
(44.7.4)

Final Action:

Submitter: Thomas Sputo, Steel Deck Institute

Recommendation: Revise text to read as follows:

44.7.4 Steel Roof Deck. Steel roof decks shall be designed and constructed in accordance with ANSI/SDI-RD1-0, Standard for Steel Roof Deck.

Substantiation: This proposal seeks to update the reference standard from the 2006 version to the 2010 version. During this updating, the designation of the standard changed from "RD1.0" to "RD"

Note: Supporting material is available for review at NFPA Headquarters.

5000- Log #114 BLD-SCM
(44.7.5)

Final Action:

Submitter: Thomas Sputo, Steel Deck Institute

Recommendation: Revise text to read as follows:

44.7.5 Non-Composite Steel Floor Deck. Non-composite steel floor decks shall be designed and constructed in accordance with ANSI/SDI-NC1-0, Standard for Non-Composite Steel Floor Deck.

Substantiation: Update reference standard from 2006 version to 2010 version and change designation from "NC1.0" to "NC".

Note: Supporting material is available for review at NFPA Headquarters.

5000- Log #65 BLD-SCM
(44.8)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Part II: Modify Section 44.8 as follows:

44.8.1 General. The design and installation of structural members and non-structural members utilized in cold-formed steel light frame construction, where the specified minimum base steel thickness is ~~between 0.0179 in. (0.455 mm) and not greater than 0.1180 in. (2.997 mm)~~, shall be in accordance with AISI S200, *North American Standard for Cold-Formed Steel Framing—General Provisions*, and 44.8.2 through 44.8.6, or AISI S220, as applicable.

44.8.2 Structural Wall Stud Design. ~~Structural w~~Wall studs shall be designed in accordance with AISI S211, *North American Standard for Cold-Formed Steel Framing – Wall Stud Design*, or in accordance with AISI S100, *North American Specification for the Design of Cold-formed Steel Structural Members*.

Substantiation: This proposal represents the results of a major effort to synchronize and coordinate the industry standards related to cold-formed steel framing. ASTM Committees C11 and A05, and AISI have been working within the steel framing industry on this “Code Synchronization” effort, the goal of which is to organize and maintain a single path for the building code requirements of cold-formed steel light frame construction products. To this end, a new document, AISI S220, was developed to contain all the necessary requirements for nonstructural products. AISI S220 represents a clarification and coordination of industry requirements. The Steel Framing Industry Association (SFIA), the Steel Stud Manufacturers Association (SSMA), the Association of the Wall and Ceiling Industry (AWCI), and the Gypsum Association (GA) all participated in this effort.

The proper integration of AISI S220 into the IBC requires the following changes:

- Section 44.1: The scope of this chapter now includes products that are non-structural. Therefore, the statement has been simplified to reflect the broad spectrum of steel construction.
- Section 44.1.2: AISI S220, Section A6.5 includes requirements that cover the identification and protection of nonstructural cold-formed steel framing, so this section has been simplified as well.
- Section 44.8.1: Because of the addition of the reference for nonstructural cold-formed steel framing, the lower limit of the minimum base thickness has been deleted and a reference has been added to AISI S220.
- Section 44.8.2: The charging language to AISI S211 has been clarified to reflect the distinction between AISI S211 and AISI S220.
- Section 47.2.1.5: The language has been clarified to refer to “structural” and “nonstructural” CFS studs and track. Additionally, AISI S200 and AISI S220 have been incorporated as the primary references. Only ASTM C645 Section 10, and ASTM C955 Section 8, which cover the requirements for the Penetration Test for screws, have been retained. These sections provide a procedure for evaluating the member’s ability to pull the head of a screw below the surface of gypsum sheathing. At this time, AISI S220 does not include this test. Future editions may include it, allowing for the eventual deletion of the specific references to ASTM C645 and C955. AISI S200 and AISI S220 incorporate the material and manufacturing provisions previously included in ASTM C955 and ASTM C645 respectively. Limiting the specific references to ASTM C645 Section 10 and ASTM C955 Section 8 removes the “dual paths to code compliance”, which has caused confusion in the cold-formed steel framing industry.
- Section 47.4.3.13: Corrects terminology.
- Chapter 2: Reflects the necessary addition to the referenced standards.

AISI has posted a review copy of AISI S220 on their website. To obtain a copy, please do the following:

Go to: www.steel.org

Click on the link “AISI Codes and Standards”

Then click on the link “Standards and Specifications”

Then click on the title of the standard, which is at the top of the list under “New Standards: To Be Referenced in Future Codes”

Note: Supporting material is available for review at NFPA Headquarters.

To review AISI S220, please visit www.steel.org > “AISI Codes and Standards” > “Standards and Specifications”

5000- Log #237 BLD-SCM
(45.2.5)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

45.2.5 Nominal Size (Lumber). The commercial size designation of width and depth, in standard sawn lumber and glued laminated lumber grades, meeting the requirements of USDOC PS 20 for sawn lumber and AF&PA AWC NDS, National Design Specification (NDS) for Wood Construction, for glued laminated lumber.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #99 BLD-SCM
(45.2.8.1)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Revise text to read as follows:

45.2.8.1 Fire-Retardant-Treated Wood. ~~A wood product impregnated with chemical by a pressure process or other means during manufacture, which is tested in accordance with ASTM E 84, *Standard Test Method of Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, has a listed flame spread index of 25 or less, and shows no evidence of significant progressive combustion when the test is continued for an additional 20-minute period, nor does the flame front progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the test. See 7.1.4.3~~

Substantiation: ASTM has now issued a test method, ASTM E2768, which contains the three requirements discussed in this section, namely that a product be tested in accordance with ASTM E84 or UL 723, and exhibit a flame spread index of 25 or less, show no evidence of significant progressive combustion when the test is continued for 30 minutes (i.e. an additional 20-minute period over the standard ASTM E84 duration of 10 minutes) and that the flame front not progress more than 10 1/2 feet (3200 mm) beyond the centerline of the burners at any time during the test. This change replaces the lengthy information about requirements with a reference to the standard.

The NFPA Manual of Style does not allow requirements in definitions. Therefore this change places the requirements into a new section in Chapter 7, immediately following the requirements for noncombustible material and limited combustible material.

5000- Log #234 BLD-SCM
(45.2.8.1)

Final Action:

Submitter: Joseph T. Holland, Hoover Treated Wood Products

Recommendation: Revise text to read as follows:

45.2.8.1 Fire Retardant-Treated Wood.

~~A wood product impregnated with chemical by a pressure process or other means during manufacture, which is tested in accordance with ASTM E 84 or ANSI/UL 723, has a listed flame spread index of 25 or less, and shows no evidence of significant progressive combustion when the test is continued for an additional 20-minute period; nor does the flame front progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the test.~~

Pressure-treated lumber and plywood that exhibit reduced surface-burning characteristics and resist propagation of fire.

Substantiation: Section 3.3.687:

The definition comes under the heading of "Wood". In reality the provisions are for treated wood. The revision clarifies what the Section pertains to treated wood.

In addition, the definition for fire-retardant-treated wood is not a definition but the performance and testing requirements. As such it belongs in Chapter 45 under the section for fire-retardant-treated wood. A new definition is suggested.

Section 45.2.8.1:

This section is a repeat of what is currently in Section 3.3.687.1. The modification is consistent with what is proposed for 3.3.687.1.1. The provision in 45.2.8.1 needs to be moved to the Section for FRTW, Section 45.5.15, as it contains the performance and testing requirements.

The new sections are needed to describe what is required in section 45.5.15.1. The new sections establish minimum requirements for pressure impregnation, what the term "other means during manufacture" entails and the minimum testing needed.

This proposal was also submitted by Dave Bueche.

This is not original material; its reference/source is as follows:

The language suggested for this document is contained in other standards. I am the author of the language used in those standards.

5000- Log #242 BLD-SCM
(45.4.1.1)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

45.4.1.1* Structural analysis and construction of wood elements and structures using allowable stress design methods shall be in accordance with ~~AF&PA AWC~~ NDS, National Design Specifications (NDS) for Wood Construction; ~~AF&PA AWC~~ NDS Supplement, NDS Supplement — Design Values for Wood Construction; and ~~AF&PA AWC~~ SDPWS, Special Design Provisions for Wind and Seismic.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #243 BLD-SCM
(45.4.1.3)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

45.4.1.3 The design and construction of one- and two-family dwellings of light-frame wood construction shall be permitted to be in accordance with the provisions of the ~~AF&PA AWC~~ WFCM, Wood Frame Construction Manual for One- and Two-Family Dwellings, subject to the limitations of Section 1.1.3 therein.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #244 BLD-SCM
(45.4.2.1)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

45.4.2.1* The structural analysis and construction of wood elements and structures using load and resistance factor design methods shall be in accordance with ~~AF&PA AWC~~ NDS; ~~AF&PA AWC~~ NDS Supplement; and ~~AF&PA AWC~~ SDPWS.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #255 BLD-SCM
(45.5.7 (New))

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Add a new section to read:

45.5.7 **Cross-Laminated Timber.** Cross-laminated timbers shall be manufactured and identified as required by ANSI/APA PRG 320-2011.

Substantiation: Adds cross-laminated timber to Chapter 45 and provides the product standard reference which is being proposed in a separate proposal.

5000- Log #262 BLD-SCM
(45.5.7 (New))

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Add a new section to read:

45.5.7 **Cross-Laminated Timber.** Cross-laminated timbers shall be manufactured and identified as required by ANSI/APA PRG 320-2011.

Substantiation: Cross-laminated timber (CLT) is a new technology developed in Europe. It is generally analogous to large section members currently associated with heavy timber in the current code. Its fire performance is most like that of glued-laminated beams, or glu-lams, in traditional Type IV (heavy timber) construction. Therefore it is proposed that the CLT be included in Type IV (2HH). To properly accomplish this, this proposal adds a definition of CLT, adds a consensus-developed product standard and then modifies the text of Type IV (2HH) to accommodate CLT.

5000- Log #235 BLD-SCM
(45.5.15.1 (New))

Final Action:

Submitter: Joseph T. Holland, Hoover Treated Wood Products

Recommendation: Add new text to read as follows:

45.5.15.1 Fire Retardant-Treated Wood. A wood product impregnated with chemical by a pressure process or other means during manufacture, which is tested in accordance with ASTM E 84 or ANSI/UL 723, has a listed flame spread index of 25 or less, and shows no evidence of significant progressive combustion when the test is continued for an additional 20-minute period; nor does the flame front progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the test.

45.5.15.1.1 Pressure process. For wood products impregnated with chemicals by a pressure process, the process shall be performed in closed vessels under pressures not less than 50 pounds per square inch gauge (psig) (345 kPa).

45.5.15.1.2 Other means during manufacture. For wood products produced by other means during manufacture, the treatment shall be an integral part of the manufacturing process of the wood product. The treatment shall provide permanent protection to all surfaces of the wood product.

45.5.15.1.3 Testing. For wood products produced by other means during manufacture, other than a pressure process, all sides of the wood product shall be tested in accordance with and produce the results required in Section 2303.2. Wood structural panels shall be permitted to test only the front and back faces.

Re-number remaining sections.

Substantiation: Section 3.3.687:

The definition comes under the heading of "Wood". In reality the provisions are for treated wood. The revision clarifies what the Section pertains to treated wood.

In addition, the definition for fire-retardant-treated wood is not a definition but the performance and testing requirements. As such it belongs in Chapter 45 under the section for fire-retardant-treated wood. A new definition is suggested.

Section 45.2.8.1:

This section is a repeat of what is currently in Section 3.3.678.1. The modification is consistent with what is proposed for 3.3.678.1.1. The provision in 45.2.8.1 needs to be moved to the Section for FRTW, Section 45.5.15, as it contains the performance and testing requirements.

The new sections are needed to describe what is required in section 45.5.15.1. The new sections establish minimum requirements for pressure impregnation, what the term "other means during manufacture" entails and the minimum testing needed.

This proposal was also submitted by Dave Bueche.

This is not original material; its reference/source is as follows:

The language suggested for this document is contained in other standards. I am the author of the language used in those standards.

5000- Log #245 BLD-SCM
(45.6.5.2)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

45.6.5.2 Joist and rafter spans shall be permitted to be in accordance with the ~~AF&PA~~ AWC publication Span Tables for Joists and Rafters.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #246 BLD-SCM
(45.6.5.3)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

45.6.5.3 The design of plank and beam flooring shall be permitted to be in accordance with ~~AF&PA~~ AWC Wood Construction Data No. 4, Plank and Beam Framing for Residential Buildings.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #247 BLD-SCM
(45.6.8.7)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

45.6.8.7 Fastenings for wood foundations shall be permitted to be in accordance with ~~AF&PA~~ AWC PWF, Permanent Wood Foundation Design Specification, or the SPC publication Permanent Wood Foundations: Design & Construction Guide.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #66 BLD-SCM
(47.2.1.5)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Part III: Modify Section 47.2.1.5 as follows:

47.2.1.5 Framing Support Materials.

47.2.1.5.1 Cold-formed Steel Light-Frame Construction Support.

~~(A) Nonstructural cold-formed steel studs and track framing support materials shall comply with AISI S220, and ASTM C 645, Standard Specification for Nonstructural Steel Framing Members, Section 10. or~~

~~(B) Structural cold-formed steel studs and track shall comply with AISI S200, and ASTM C 955, Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases, Section 8 as specified by Section 44.8 of this Code.~~

Substantiation: This proposal represents the results of a major effort to synchronize and coordinate the industry standards related to cold-formed steel framing. ASTM Committees C11 and A05, and AISI have been working within the steel framing industry on this "Code Synchronization" effort, the goal of which is to organize and maintain a single path for the building code requirements of cold-formed steel light frame construction products. To this end, a new document, AISI S220, was developed to contain all the necessary requirements for nonstructural products. AISI S220 represents a clarification and coordination of industry requirements. The Steel Framing Industry Association (SFIA), the Steel Stud Manufacturers Association (SSMA), the Association of the Wall and Ceiling Industry (AWCI), and the Gypsum Association (GA) all participated in this effort.

The proper integration of AISI S220 into the IBC requires the following changes:

- Section 44.1: The scope of this chapter now includes products that are non-structural. Therefore, the statement has been simplified to reflect the broad spectrum of steel construction.
- Section 44.1.2: AISI S220, Section A6.5 includes requirements that cover the identification and protection of nonstructural cold-formed steel framing, so this section has been simplified as well.
- Section 44.8.1: Because of the addition of the reference for nonstructural cold-formed steel framing, the lower limit of the minimum base thickness has been deleted and a reference has been added to AISI S220.
- Section 44.8.2: The charging language to AISI S211 has been clarified to reflect the distinction between AISI S211 and AISI S220.
- Section 47.2.1.5: The language has been clarified to refer to "structural" and "nonstructural" CFS studs and track. Additionally, AISI S200 and AISI S220 have been incorporated as the primary references. Only ASTM C645 Section 10, and ASTM C955 Section 8, which cover the requirements for the Penetration Test for screws, have been retained. These sections provide a procedure for evaluating the member's ability to pull the head of a screw below the surface of gypsum sheathing. At this time, AISI S220 does not include this test. Future editions may include it, allowing for the eventual deletion of the specific references to ASTM C645 and C955. AISI S200 and AISI S220 incorporate the material and manufacturing provisions previously included in ASTM C955 and ASTM C645 respectively. Limiting the specific references to ASTM C645 Section 10 and ASTM C955 Section 8 removes the "dual paths to code compliance", which has caused confusion in the cold-formed steel framing industry.
- Section 47.4.3.13: Corrects terminology.
- Chapter 2: Reflects the necessary addition to the referenced standards.

AISI has posted a review copy of AISI S220 on their website. To obtain a copy, please do the following:

Go to: www.steel.org

Click on the link "AISI Codes and Standards"

Then click on the link "Standards and Specifications"

Then click on the title of the standard, which is at the top of the list under "New Standards: To Be Referenced in Future Codes"

Note: Supporting material is available for review at NFPA Headquarters.

To review AISI S220, please visit www.steel.org > "AISI Codes and Standards" > "Standards and Specifications"

5000- Log #67 BLD-SCM
(47.4.3.1.3)

Final Action:

Submitter: Bonnie E. Manley, American Iron and Steel Institute

Recommendation: Part IV: **Modify Section 47.4.3.1.3 as follows:**

47.4.3.1.3 The requirements for foundation weep screed shall be as follows:

(1) Foundation weep screed shall be installed at the bottom of all cold-formed steel-framed or wood-framed exterior walls to receive lath and plaster.

Substantiation: This proposal represents the results of a major effort to synchronize and coordinate the industry standards related to cold-formed steel framing. ASTM Committees C11 and A05, and AISI have been working within the steel framing industry on this "Code Synchronization" effort, the goal of which is to organize and maintain a single path for the building code requirements of cold-formed steel light frame construction products. To this end, a new document, AISI S220, was developed to contain all the necessary requirements for nonstructural products. AISI S220 represents a clarification and coordination of industry requirements. The Steel Framing Industry Association (SFIA), the Steel Stud Manufacturers Association (SSMA), the Association of the Wall and Ceiling Industry (AWCI), and the Gypsum Association (GA) all participated in this effort.

The proper integration of AISI S220 into the IBC requires the following changes:

- Section 44.1: The scope of this chapter now includes products that are non-structural. Therefore, the statement has been simplified to reflect the broad spectrum of steel construction.
- Section 44.1.2: AISI S220, Section A6.5 includes requirements that cover the identification and protection of nonstructural cold-formed steel framing, so this section has been simplified as well.
- Section 44.8.1: Because of the addition of the reference for nonstructural cold-formed steel framing, the lower limit of the minimum base thickness has been deleted and a reference has been added to AISI S220.
- Section 44.8.2: The charging language to AISI S211 has been clarified to reflect the distinction between AISI S211 and AISI S220.
- Section 47.2.1.5: The language has been clarified to refer to "structural" and "nonstructural" CFS studs and track. Additionally, AISI S200 and AISI S220 have been incorporated as the primary references. Only ASTM C645 Section 10, and ASTM C955 Section 8, which cover the requirements for the Penetration Test for screws, have been retained. These sections provide a procedure for evaluating the member's ability to pull the head of a screw below the surface of gypsum sheathing. At this time, AISI S220 does not include this test. Future editions may include it, allowing for the eventual deletion of the specific references to ASTM C645 and C955. AISI S200 and AISI S220 incorporate the material and manufacturing provisions previously included in ASTM C955 and ASTM C645 respectively. Limiting the specific references to ASTM C645 Section 10 and ASTM C955 Section 8 removes the "dual paths to code compliance", which has caused confusion in the cold-formed steel framing industry.
- Section 47.4.3.13: Corrects terminology.
- Chapter 2: Reflects the necessary addition to the referenced standards.

AISI has posted a review copy of AISI S220 on their website. To obtain a copy, please do the following:

Go to: www.steel.org

Click on the link "AISI Codes and Standards"

Then click on the link "Standards and Specifications"

Then click on the title of the standard, which is at the top of the list under "New Standards: To Be Referenced in Future Codes"

Note: Supporting material is available for review at NFPA Headquarters.

To review AISI S220, please visit www.steel.org > "AISI Codes and Standards":> "Standards and Specifications"

5000- Log #104 BLD-SCM
(48.2.3)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Revise text to read as follows:

48.2.3* Thermal Barrier for Foam Plastic Insulation (Thermal Barrier). A thermal barrier (see 3.3.5.1.3 and A.3.3.5.1.3) installed over material, product, or assembly that prevents or delays ignition of foam plastic insulation by limiting the temperature rise on the surface of the foam plastic insulation and by acting as a flame exposure barrier to the foam plastic insulation that protects it for a 15-minute time period (NFPA 275, *Standard Method of Fire Tests for the Evaluation of Thermal Barriers Used Over Foam Plastic Insulation*). (see also 4.8.3.3.2 and A.4.8.3.3.2)

Substantiation: This section is not correct and the public input is intended to correct that. NFPA 275 is the standard test method for determining that a material/product is a thermal barrier. It has 2 tests: a fire resistance or temperature transmission test (that can be a small scale test) that verifies that the material will not have flame penetration or excessive temperature rise onto the unexposed side and a reaction-to-fire test or fire integrity test that uses a full scale fire test (for example a room-corner test) whether the installed system (thermal barrier and foam plastic insulation) performs well in a fire, either by the foam plastic insulation not igniting or by having ignition but no flashover. The reaction to fire test also assesses whether excessive smoke has been emitted. There are 4 reaction to fire tests permitted for use within NFPA 275: NFPA 286, FM 4880, UL 1040 and UL 1715, and NFPA 286 is the only one that does not contain pass/fail criteria but the criteria from section 10.3.5.2 are the appropriate ones, which ensure that flashover with the thermal barrier system does not occur.

5000- Log #105 BLD-SCM
(48.3.3.2)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Revise text to read as follows:

48.3.3.2* The thermal barrier material shall comply with one of the following:

- (1) The thermal barrier shall be 1/2 in. (13 mm) gypsum board.
- (2) The thermal barrier material shall comply with the requirements of the temperature transmission fire test based on NFPA 286 with the conditions of acceptance of 10.3.5.2 of this code and of the integrity fire test in NFPA 275, *Standard Method of Fire Tests for the Evaluation of Thermal Barriers Used Over Foam Plastic Insulation*.
- (3) The thermal barrier material shall comply with the temperature transmission test in NFPA 275 and with the conditions of acceptance of FM 4880, UL 1040, or UL 1715 when tested in conjunction with the foam plastic insulation for a period of 15 minutes.

Substantiation: This section is not correct and the public input is intended to correct that. NFPA 275 is the standard test method for determining that a material/product is a thermal barrier. It has 2 tests: a fire resistance or temperature transmission test (that can be a small scale test) that verifies that the material will not have flame penetration or excessive temperature rise onto the unexposed side and a reaction-to-fire test or fire integrity test that uses a full scale fire test (for example a room-corner test) whether the installed system (thermal barrier and foam plastic insulation) performs well in a fire, either by the foam plastic insulation not igniting or by having ignition but no flashover. The reaction to fire test also assesses whether excessive smoke has been emitted. There are 4 reaction to fire tests permitted for use within NFPA 275: NFPA 286, FM 4880, UL 1040 and UL 1715, and NFPA 286 is the only one that does not contain pass/fail criteria but the criteria from section 10.3.5.2 are the appropriate ones, which ensure that flashover with the thermal barrier system does not occur.

5000- Log #277 BLD-SCM
(48.4(1) (New) and Chapter 2)

Final Action:

Submitter: Sean DeCrane, City of Cleveland-Division of Fire

Recommendation: Add new section to read:

1. Resistance to Radiant Heat. Exterior walls on buildings of Type V construction that are greater than 20 feet (6096 mm) in height above grade plane, contain combustible components and are not required to exhibit a fire resistance rating shall be tested in accordance with ASTM E2707, Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure, and demonstrate absence of flame penetration through the wall assembly at any time during the test and absence of evidence of glowing combustion on the interior surface of the assembly at the end of the test, unless otherwise permitted by 48.3.4.1 through 48.3.4.5.

- 1. Exterior walls that comply with NFPA 285.
- 1. Exterior walls that comply with FM 4880.
- 1. Exterior walls that comply with UL 1040.
- 1. Exterior walls that exhibit a 1 hour fire resistance rating if tested to ASTM E119 or UL 263.
- 1. The fire separation distance to the adjacent building is no less than 10 feet (3048 mm).

Also add ASTM E2707, Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure, into section 2 on referenced documents

Substantiation: The requirements for insulation of buildings of Type V construction are increasing to such an extent that there will be a significantly increased use of combustible insulation materials as part of exterior walls. If we believe that these buildings are not just “built to burn down” we need to consider protecting them from radiant heat generated by neighboring buildings.

ASTM E2707 was developed specifically for this purpose. It assesses whether the wall resists a radiant exposure of 150 kW for 10 minutes. The conditions of acceptance are not in the mandatory part of the standard but in section X1.2.10, which is a non mandatory appendix and are therefore needed in the code.

The exceptions are for walls that comply with a severe fire test (or have a fire resistance rating) already: they don't need to be retested. Note that NFPA 285, FM 4880 and UL 1040 are all severe fire tests that were specifically designed to assess the fire performance of exterior walls containing combustible materials.

If the walls have not been tested the separation distance must be increased to lower the risk of radiant heat ignition from the neighboring building.

Note that exterior walls for buildings of Type VB construction are not required to comply with a fire resistance rating in accordance with ASTM E119 or UL 263. Also, exterior walls for buildings of Type VA construction are permitted to be exempt from complying with a fire resistance rating if the building is sprinklered. The sprinklers will protect the interior of the building but will have no effect on the radiated heat released externally by the burning wall, which can then potentially affect neighboring buildings.

Another large issue is the increasing number of fires where we are witnessing exterior fires that travel up the exterior of a fully sprinklered, to NFPA 13r, multi-occupant residential apartment and we are losing the whole building. We would like to reduce the impact of fire spread on these exterior fires.

5000- Log #248 BLD-SCM
(A.45.4.1.1)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

A.45.4.1.1 Additional information can be found in the AF&PA AWC Manual for Engineered Wood Construction.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #249 BLD-SCM
(A.45.4.2.1)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

A.45.4.2.1 Additional information can be found in the AF&PA AWC Manual for Engineered Wood Construction.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC).

5000- Log #250 BLD-SCM
(A.45.6.9.6.16)

Final Action:

Submitter: Dennis L. Pitts, American Wood Council

Recommendation: Revise to read:

A.45.6.9.6.16 Detailed design and construction information, including information about appropriate preservative-treated lumber, is available in the AF&PA Technical Report No. 7 AWC PWF, Permanent Wood Foundation System Design Specification, and in the Southern Pine Council, Permanent Wood Foundations: Design and Construction Guide.

Substantiation: Responsibility for reference documents previously associated with AF&PA has been transferred to the American Wood Council (AWC). Additionally, the old standard for wood foundations has been replaced by the new PWF document.

5000- Log #106 BLD-SCM
(A.48.2.3)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Delete text as follows:

~~A.48.2.3 NFPA 275 is a test method designed specifically to assess whether a material, product, or assembly constitutes a thermal barrier. FM 4880, UL 1040, and UL 1715 are also test methods recognized by the Code for evaluating assemblies for use without thermal barriers.~~

Substantiation: This section is not correct and the public input is intended to correct that. NFPA 275 is the standard test method for determining that a material/product is a thermal barrier. It has 2 tests: a fire resistance or temperature transmission test (that can be a small scale test) that verifies that the material will not have flame penetration or excessive temperature rise onto the unexposed side and a reaction-to-fire test or fire integrity test that uses a full scale fire test (for example a room-corner test) whether the installed system (thermal barrier and foam plastic insulation) performs well in a fire, either by the foam plastic insulation not igniting or by having ignition but no flashover. The reaction to fire test also assesses whether excessive smoke has been emitted. There are 4 reaction to fire tests permitted for use within NFPA 275: NFPA 286, FM 4880, UL 1040 and UL 1715, and NFPA 286 is the only one that does not contain pass/fail criteria but the criteria from section 10.3.5.2 are the appropriate ones, which ensure that flashover with the thermal barrier system does not occur.

5000- Log #107 BLD-SCM
(A.48.3.3.2 (New))

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Add text to read as follows:

A.48.3.3.2 NFPA 275 is a test method designed specifically to assess whether a material, product, or assembly constitutes a thermal barrier. NFPA 275 contains requirements to meet two fire tests: a fire resistance (temperature transmission) test that does not permit flame penetration into the unexposed side and limits the allowable temperature rise on the unexposed side after a 15 minute exposure and a full scale reaction-to-fire test (integrity fire test). The integrity fire test assesses whether the thermal barrier: (a) prevents ignition of the foam plastic insulation installed behind the thermal barrier or (b) prevents flashover of the installed system (i.e. thermal barrier and foam plastic insulation). The integrity fire test also assesses whether the smoke emission from the installed system is excessive. It is one of the following four standard tests: NFPA 286, FM 4880, UL 1040 and UL 1715. NFPA 286 is the only one of these standard fire tests that does not contain pass/fail criteria.

Substantiation: This section is not correct and the public input is intended to correct that. NFPA 275 is the standard test method for determining that a material/product is a thermal barrier. It has 2 tests: a fire resistance or temperature transmission test (that can be a small scale test) that verifies that the material will not have flame penetration or excessive temperature rise onto the unexposed side and a reaction-to-fire test or fire integrity test that uses a full scale fire test (for example a room-corner test) whether the installed system (thermal barrier and foam plastic insulation) performs well in a fire, either by the foam plastic insulation not igniting or by having ignition but no flashover. The reaction to fire test also assesses whether excessive smoke has been emitted. There are 4 reaction to fire tests permitted for use within NFPA 275: NFPA 286, FM 4880, UL 1040 and UL 1715, and NFPA 286 is the only one that does not contain pass/fail criteria but the criteria from section 10.3.5.2 are the appropriate ones, which ensure that flashover with the thermal barrier system does not occur.

703- Log #4 BLD-SCM
(2.3.1)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Add ASTM E2768, Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test) (2011), to Chapter 2.

Substantiation: ASTM has now issued a test method, ASTM E2768, which contains the three requirements discussed in this section, namely that a product be tested in accordance with ASTM E84 or UL 723, and exhibit a flame spread index of 25 or less, show no evidence of significant progressive combustion when the test is continued for 30 minutes (i.e. an additional 20-minute period over the standard ASTM E84 duration of 10 minutes) and that the flame front not progress more than 10¹/₂ feet (3200 mm) beyond the centerline of the burners at any time during the test. This change replaces the lengthy information about requirements with a reference to the standard.

The NFPA Manual of Style does not allow requirements in definitions. Therefore this change places the requirements into a new section in Chapter 4, immediately following the statement about application.

703- Log #6 BLD-SCM
(2.3.1)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Revise text as follows:

2.3.1 ASTM Publications. ASTM International, P.O. Box C700, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 2898, *Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing*, ~~2010 2008~~ (e1).

ASTM D 3201, *Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products*, 2008a e1.

ASTM D 5516, *Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant Treated Softwood Plywood Exposed to Elevated Temperatures*, 2009.

ASTM D 5664, *Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant Treated Lumber*, ~~2010 2008~~.

ASTM D 6305, *Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire-Retardant-Treated Plywood Roof Sheathing*, 2008.

ASTM D 6841, *Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber*, 2008.

ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, ~~2012 2009a~~

Substantiation: Standards update.

703- Log #1 BLD-SCM
(3.3.2 Fire Retardant-Treated Wood)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Revise text as follows:

~~3.3.2 Fire-Retardant-Treated Wood. A wood product impregnated with chemical by a pressure process or other means during manufacture, which is tested in accordance with ASTM E 84 or ANSI/UL 723, has a listed flame spread index of 25 or less, and shows no evidence of significant progressive combustion when the test is continued for an additional 20-minute period, nor does the flame front progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the test. See 4.1.1.~~

Substantiation: ASTM has now issued a test method, ASTM E2768, which contains the three requirements discussed in this section, namely that a product be tested in accordance with ASTM E84 or UL 723, and exhibit a flame spread index of 25 or less, show no evidence of significant progressive combustion when the test is continued for 30 minutes (i.e. an additional 20-minute period over the standard ASTM E84 duration of 10 minutes) and that the flame front not progress more than 10¹/₂ feet (3200 mm) beyond the centerline of the burners at any time during the test. This change replaces the lengthy information about requirements with a reference to the standard.

The NFPA Manual of Style does not allow requirements in definitions. Therefore this change places the requirements into a new section in Chapter 4, immediately following the statement about application.

703- Log #7 BLD-SCM
(3.3.2 Fire-Retardant-Treated Wood)

Final Action:

Submitter: Joseph T. Holland, Hoover Treated Wood Products

Recommendation: Revise text as follows:

~~3.3.2 *Fire-Retardant-Treated Wood*. A wood product impregnated with chemical by a pressure process or other means during manufacture, which is tested in accordance with ASTM E 84 or ANSI/UL 723, has a listed flame spread index of 25 or less, and shows no evidence of significant progressive combustion when the test is continued for an additional 20-minute period, nor does the flame front progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the test. Pressure-treated lumber and plywood that exhibit reduced surface-burning characteristics and resist propagation of fire.~~

Substantiation: Section 3.3.2:

The definition for fire-retardant-treated wood is not a definition but the performance and testing requirements. As such it belongs in Chapter 45 under the section for fire-retardant-treated wood. A new definition is suggested.

The provision in 3.3.2 needs to be moved to the Section for FRTW, Section 4.1.1, as it contains the performance and testing requirements.

The new sections are needed to describe what is required in section 4.1.1. The new sections establish minimum requirements for pressure impregnation, what the term “other means during manufacture” entails and the minimum testing needed.

This proposal was also submitted by Dave Bueche.

This is not original material; its reference/source is as follows:

The language suggested for this document is contained in other standards. I am the author of the language used in those standards.

703- Log #2 BLD-SCM
(4.1.1 (New))

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Add new text to read as follows:

4.1.1* Fire-Retardant-Treated Wood. A listed wood product impregnated with chemical by a pressure process or other means during manufacture, which complies with the requirements of ASTM E2786.

Substantiation: ASTM has now issued a test method, ASTM E2768, which contains the three requirements discussed in this section, namely that a product be tested in accordance with ASTM E84 or UL 723, and exhibit a flame spread index of 25 or less, show no evidence of significant progressive combustion when the test is continued for 30 minutes (i.e. an additional 20-minute period over the standard ASTM E84 duration of 10 minutes) and that the flame front not progress more than 10¹/₂ feet (3200 mm) beyond the centerline of the burners at any time during the test. This change replaces the lengthy information about requirements with a reference to the standard.

The NFPA Manual of Style does not allow requirements in definitions. Therefore this change places the requirements into a new section in Chapter 4, immediately following the statement about application.

703- Log #8 BLD-SCM
(4.4.1 through 4.4.1.3)

Final Action:

Submitter: Joseph T. Holland, Hoover Treated Wood Products

Recommendation: Revise text as follows:

~~3.3.2~~ **4.4.1 Fire-Retardant-Treated Wood.** A wood product impregnated with chemical by a pressure process or other means during manufacture, which is tested in accordance with ASTM E 84 or ANSI/UL 723, has a listed flame spread index of 25 or less, and shows no evidence of significant progressive combustion when the test is continued for an additional 20-minute period; nor does the flame front progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the test.

4.4.1.1 Pressure process. For wood products impregnated with chemicals by a pressure process, the process shall be performed in closed vessels under pressures not less than 50 pounds per square inch gauge (psig) (345 kPa).

4.4.1.2 Other means during manufacture. For wood products produced by other means during manufacture, the treatment shall be an integral part of the manufacturing process of the wood product. The treatment shall provide permanent protection to all surfaces of the wood product.

4.4.1.3 Testing. For wood products produced by other means during manufacture, other than a pressure process, all sides of the wood product shall be tested in accordance with and produce the results required in Section 2303.2. Wood structural panels shall be permitted to test only the front and back faces.

ReNUMBER remaining sections

Substantiation: Section 3.3.2:

The definition for fire-retardant-treated wood is not a definition but the performance and testing requirements. As such it belongs in Chapter 45 under the section for fire-retardant-treated wood. A new definition is suggested.

The provision in 3.3.2 needs to be moved to the Section for FRTW, Section 4.1.1, as it contains the performance and testing requirements.

The new sections are needed to describe what is required in section 4.1.1. The new sections establish minimum requirements for pressure impregnation, what the term “other means during manufacture” entails and the minimum testing needed.

This proposal was also submitted by Dave Bueche.

This is not original material; its reference/source is as follows:

The language suggested for this document is contained in other standards. I am the author of the language used in those standards.

703- Log #3 BLD-SCM
(A.4.1.1 (New))

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Add new text to read as follows:

A.4.1.1 A material complying with ASTM E2786 needs to be tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Burning Materials*, and exhibit a flame spread index of 25 or less, show no evidence of significant progressive combustion when the test is continued for an additional 20-minute period (with a total test duration of 30 minutes) and have a flame front that does not progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the test.

Substantiation: ASTM has now issued a test method, ASTM E2768, which contains the three requirements discussed in this section, namely that a product be tested in accordance with ASTM E84 or UL 723, and exhibit a flame spread index of 25 or less, show no evidence of significant progressive combustion when the test is continued for 30 minutes (i.e. an additional 20-minute period over the standard ASTM E84 duration of 10 minutes) and that the flame front not progress more than 10¹/₂ feet (3200 mm) beyond the centerline of the burners at any time during the test. This change replaces the lengthy information about requirements with a reference to the standard.

The NFPA Manual of Style does not allow requirements in definitions. Therefore this change places the requirements into a new section in Chapter 4, immediately following the statement about application.

703- Log #5 BLD-SCM
(B.1.2)

Final Action:

Submitter: Marcelo M. Hirschler, GBH International

Recommendation: Add Annex B.1.2, into the sections on Referenced ASTM Standards.

Substantiation: ASTM has now issued a test method, ASTM E2768, which contains the three requirements discussed in this section, namely that a product be tested in accordance with ASTM E84 or UL 723, and exhibit a flame spread index of 25 or less, show no evidence of significant progressive combustion when the test is continued for 30 minutes (i.e. an additional 20-minute period over the standard ASTM E84 duration of 10 minutes) and that the flame front not progress more than 10¹/₂ feet (3200 mm) beyond the centerline of the burners at any time during the test. This change replaces the lengthy information about requirements with a reference to the standard.

The NFPA Manual of Style does not allow requirements in definitions. Therefore this change places the requirements into a new section in Chapter 4, immediately following the statement about application.

Suggested Editorial Revisions

Rev #	Suggested Rev Text	Statement
1	<p style="text-align: center;">35.2.12 Factor. (Reserved)</p> <p>35.2.12.1-xx Importance Factor (I). A factor that accounts for the degree of risk to human life, health, and welfare associated with damage to property or loss of use of functionality. [ASCE/SEI 7:1.2.1]</p> <p>35.2.12.2 Load Factor. A factor that accounts for deviations of the actual load from the nominal load, for uncertainties in the analysis that transforms the load into a load effect, and for the probability that more than one extreme load will occur simultaneously. [ASCE/SEI 7:1.2.1]</p> <p>35.2.12.3 Resistance Factor. A factor that accounts for deviations of the actual strength from the nominal strength and the manner and consequences of failure (also called <i>strength reduction factor</i>). [ASCE/SEI 7:1.2.1]</p> <p>35.2.13xx Glazing. Glass or transparent or translucent plastic sheet used in windows, doors, skylights, or curtain walls. [ASCE/SEI 7:26.2]</p> <p>35.2.14 Importance Factor (I). A factor that accounts for the degree of risk to human life, health, and welfare associated with damage to property or loss of use of functionality hazard to human life and damage to property. [ASCE/SEI 7:1.2.2]</p> <p>35.2.15-xx Limit State. A condition beyond which a structure or member becomes unfit for service and is judged either to be no longer useful for its intended function (serviceability limit state) or to be unsafe (strength limited state). [ASCE/SEI 7:1.2.1]</p> <p>35.2.16 Load Effects. Forces and deformations produced in structural members by the applied loads. [ASCE/SEI 7:1.2.1]</p> <p>35.2.17 Load Factor. A factor that accounts for deviations of the actual load from the nominal load, for uncertainties in the analysis that transforms the load into a load effect, and for the probability that more than one extreme load will occur simultaneously. [ASCE/SEI 7:1.2.1]</p> <p>35.2.18-xx Loads. Forces or other actions that result from the weight of all building materials, occupants and their possessions, environmental effects, differential movement, and restrained dimensional changes. Permanent loads are those loads in which variations over time are rare or of small magnitude. All other loads are variable loads. (<i>See also 3.3.377, Nominal Loads.</i>) [ASCE/SEI 7:1.2.1]</p> <p>35.2.18.1xx.1 Dead Loads. Dead loads consist of the weight of all materials of construction incorporated into the building including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding and other similarly incorporated architectural and structural items, and fixed service equipment including the weight of cranes. [ASCE/SEI 7:3.1.1]</p>	<p>Revision of the section creates clarity and removes repetitive sections. The ASCE 7 2010 extracts were updated. All remaining sections should be renumbered accordingly.</p>

	<p>35.2.18.2xx.2 Factored Load. The product of the nominal load and a load factor. [ASCE/SEI 7:1.2.1]</p> <p>35.2.18.3xx.3 Live Loads. <u>A load produced by the use and occupancy of the building or other structure that does not include construction or environmental loads, such as wind load, snow load, rain load, earthquake load, flood load, or dead load. Live loads are those loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load, or dead load. Live loads on a roof are those produced (1) during maintenance by workers, equipment, and materials; and (2) during the life of the structure by movable objects such as planters and by people. [ASCE/SEI 7:4.1]</u></p> <p>35.2.xx.4 Load Effects. Forces and deformations produced in structural members by the applied loads. [ASCE/SEI 7:1.2.1]</p> <p>35.2.xx.5 Load Factor. A factor that accounts for deviations of the actual load from the nominal load, for uncertainties in the analysis that transforms the load into a load effect, and for the probability that more than one extreme load will occur simultaneously. [ASCE/SEI 7:1.2.1]</p>	
2	<p>36.3.3.2.1 If <u>Where</u> the PI of all stratum is less than 15, the soil shall not be considered expansive.</p> <p>36.3.3.2.2 If <u>Where</u> the PI of any stratum is 15 or greater, the soil shall be considered potentially expansive and shall be subjected to additional approved tests and evaluation to determine if the soil will adversely affect the structural integrity and serviceability of the structure.</p>	The revision uses correct code language.
3	<p>A.38.3.2 The Factory Mutual Research Corporation (now FM Global) and Underwriters Laboratories Inc. conducted comprehensive large-scale fire tests to determine the fire characteristics of insulated metal deck roof constructions. The tests were conducted in a 20 ft × 100 ft (6.1 m × 30 m) fire test building with a severe fire source at one end simulating the first 30 minutes of the standard time-temperature fire exposure in accordance with NFPA 251, Standard Methods of Tests of Fire Resistance of Building Construction and Materials (ASTM E 119, <i>Standard Test Methods for Fire Tests of Building Construction and Materials</i> or <u>ANIS/UL 723</u>).</p>	NFPA 251 was withdrawn and replaced with referenced ASTM and UL standards.
4	<p>A.48.4.1.2 NFPA 251, Standard Methods of Tests of Fire Resistance of Building Construction and Materials; UL 263, Standard for Fire Tests of Building Construction and Materials; and ASTM E 119, Standard Test Methods for Fire Tests of Building Construction and Materials, are considered nationally recognized methods of determining fire resistance and have been found to yield equivalent test results.</p>	NFPA 251 was withdrawn and replaced with referenced ASTM and UL standards.