2. The veneer is attached to or furred from a noncombustible backing that is fire-resistance rated as required by other provisions of this code.
3. Where open or spaced wood veneers (without concealed spaces) are used, they shall not project more than 24 inches (610 mm) from the building wall.

1406.2.2 (Supp) Architectural trim. In buildings of Type I, II, III and IV construction, exterior wall coverings shall be permitted to be constructed of wood where permitted by Section 1405.4 or other equivalent combustible material. Combustible exterior wall coverings, other than fire-retardant-treated wood complying with Section 2303.2 for exterior installation, shall not exceed 10 percent of an exterior wall surface area where the fire separation distance is 5 feet (1524 mm) or less. Combustible architectural trim shall be limited to ~~three stories or~~ 40 feet (12 192 mm) above grade ~~plane~~. Noncombustible materials shall be permitted to be of any height provided the materials are secured to the wall with metal or other approved noncombustible brackets.

Exception: Combustible architectural trim of fire-retardant treated wood shall be permitted up to ~~four stories or~~ 60 feet (18.29 m) in height above grade plane.

1407.11.1 Installations up to 40 feet in height. MCM shall not be installed more than 40 feet (12 190 mm) in height above ~~the~~ grade ~~plane~~ where installed in accordance with Sections 1407.11.1.1 and 1407.11.1.2.

1407.11.2 Installations up to 50 feet in height. MCM shall not be installed more than 50 feet (15 240 mm) in height above ~~the~~ grade ~~plane~~ where installed in accordance with Sections 1407.11.2.1 and 1407.11.2.2.

Reason: Proposal G44-04/05-AM successfully established the distinction between "grade plane" as a measurement of the height and number of stories of a building above the finished ground surface and "grade" as a measurement of the height of a component of the building above the finished ground surface. Grade plane is an imaginary horizontal reference plane representing the weighted average of the finished ground surface adjoining the building at its perimeter. The grade plane of each building is located at a single, unique elevation. Grade, however, is not imaginary but is the actual finished ground surface adjoining the building at its perimeter, which varies in elevation with the ground surface.

This proposal builds on this distinction in four specific code sections by changing the thresholds for components of buildings (i.e., veneer, architectural trim and exterior wall coverings) from being based on grade plane to being based on grade. This will bring better consistency among the provisions of the IBC whose limitations are based on their heights above the finished ground surface. A comprehensive review of the 2006 IBC and 2007 Supplement was made during the preparation of this proposal and it was determined that code sections with height limits on building components are based on measuring from grade except for the ones in this proposal. Examples of these in Chapters 1-10 are Sections 105.2 (Building Item 6), 418.4, 507.6 (Item 3), 602.4.3, 603.1 (Item 6), 903.2.10.1 (Item 1), 905.4 (Item 1), 1009.3.2 (Paragraph 2), 1013.1, 1013.4, 1013.5, 1019.1, 1022.2 (Exception), 1024.1, 1025.14.1, 1025.14.2, 1025.14.3 and 1026.2 (Exception).

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS179 –07/08
1405.5.2

Proponent: Charles B. Clark, Jr., Brick Industry Association, representing Masonry Alliance for Codes and Standards

Revise as follows:

1405.5.2 (Supp) Seismic requirements. Anchored masonry veneer located in Seismic Design Category C, D, E or F shall conform to the requirements of Section 6.2.2.10 of ACI 530/ASCE 5/ TMS 402. ~~Anchored masonry veneer located in Seismic Design Category D shall also conform to the requirements of Section 6.2.2.10.3.3 of ACI 530/ ASCE 5/ TMS 402.~~

Reason: To allow anchored masonry veneer located in Seismic Design Category D to be constructed in accordance with the Building Code Requirements for Masonry Structures (ACI 530/ ASCE 5/ TMS 402) which does not require joint reinforcement and mechanical attachment of anchors to the reinforcement.

This code change deals with anchored masonry veneer constructed in Seismic Design Category D. The current text in the IBC was introduced in the last code cycle and requires compliance with Section 6.2.2.10.3.3 of ACI 530/ ASCE 5/ TMS 402. This section requires anchored masonry veneer to include joint reinforcement and mechanical attachment of anchors to the reinforcement. This code change would remove these requirements from applying to veneer in Seismic Design Category D.

Opposition to this code change in previous code cycles (refer to S130-04/05 and FS177-06/07) has requested that tests be conducted which would demonstrate that these details are not necessary for anchored masonry veneer constructed in Seismic Design Category D. Such testing is currently underway. This code change is submitted with the understanding that data from these tests will be available for review prior to the hearing of the code change.

As with the previous code change proposals, we continue to assert that requiring anchored masonry veneer in Seismic Design Category D to include joint reinforcement and mechanical attachment of anchors to the reinforcement is totally unfounded for the following reasons:

1. TECHNICAL – There is no research, testing or analysis to support changing the ACI 530/ASCE 5/TMS 402 provisions. If the standard's provisions were changed, they would result in the most restrictive code provisions for anchored masonry veneer in the world. No other nation in the world requires masonry veneer to be detailed in this manner. Canada, not understanding why it's U.S. neighbor could even think of imposing such requirements, sponsored shake-table testing to investigate and concluded that they were not necessary. No research, testing or analysis has ever been put forward that would substantiate these more restrictive provisions.

However, there IS technical research, testing and analysis that supports the anchored masonry veneer provisions of ACI 530/ASCE 5/TMS 402. In particular, the following research paper and testing are of significance:

McGinley, M., Bennett, R., Johnson, E., "Effects of Horizontal Joint Reinforcement on the Seismic Behavior of Masonry Veneers," *6th International Masonry Conference*, November, 2002.

Turek, Ventura, "Out-of-Plane Shake-Table Testing of Brick Veneer With and Without Wire Joint Reinforcement," The University of British Columbia, June, 2002.

2. LIFE SAFETY – There is research testing to support that changing the detailing provisions for anchored masonry veneer in Seismic Design Category D in ACI 530/ASCE 5/TMS 402 is detrimental, not beneficial, to the performance of the veneer under seismic loading. Research shows that the horizontal joint reinforcement required for Seismic Design Category D actually facilitates the cracking of the veneer at the joint where it is included. If it is included, it can become a life safety issue.

3. CONSENSUS STANDARD – The Building Code Requirements for Masonry Structures (ACI 530/ASCE 5/TMS 402) is a consensus standard overseen by three organizations. These provisions are written under an ANSI-accredited, balanced process to ensure their objectivity.

For these reasons, we urge the body to adopt this modification returning the anchored masonry veneer provisions to those found in ACI 530/ASCE 5/TMS 402.

Bibliography:

McGinley, M., Bennett, R., Johnson, E., "Effects of Horizontal Joint Reinforcement on the Seismic Behavior of Masonry Veneers," *6th International Masonry Conference*, November, 2002.

McEwen, William, Wibowo, A., Adebar, P., Anderson, D., Effect of Veneer Joint Reinforcement on Brick Tie Embedment, *Ninth Canadian Masonry Symposium*, June, 2001.

Turek, Ventura, "Out-of-Plane Shake-Table Testing of Brick Veneer With and Without Wire Joint Reinforcement," The University of British Columbia, June, 2002.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS180–07/08 (NOT USED)

FS181–07/08
1405.13

Proponent: Matthew Dobson, Vinyl Siding Institute

Revise as follows:

1405.13 Vinyl siding. Vinyl siding conforming to the requirements of this section and complying with ASTM D 3679 shall be permitted on exterior walls of buildings of ~~Type V construction located~~ in areas where the basic wind speed specified in Chapter 16 does not exceed 100 miles per hour (45 m/s) and the building height is less than or equal to 40 feet (12 192 mm) in Exposure C. Where construction is located in areas where the basic wind speed exceeds 100 miles per hour (45 m/s), or building heights are in excess of 40 feet (12 192 mm), tests or calculations indicating compliance with Chapter 16 shall be submitted. Vinyl siding shall be secured to the building so as to provide weather protection for the exterior walls of the building. Vinyl siding on the exterior wall of building of Type I, II, II and IV construction shall meet the requirements of 1406.

Reason: Section 1406 of the IBC provides clear requirements for combustible claddings used in various types of construction. This change helps to clarify that when vinyl siding is used in construction Types other than Type V, it must meet the requirements of section 1406 just like other combustible exterior wall coverings.

Additionally, the ICC ES Acceptance Criteria for vinyl siding states that "3.4 Ignition Resistance: For recognition under the IBC and BNBC, for construction other than Type V, the siding shall comply with Section 1406.2 of the IBC and Section 1407.2.1 of the BNBC. For SBC compliance, exterior walls shall not exhibit sustained flaming where tested in accordance with NFPA 268."

This clarification reflects the established references from the acceptance criteria.

Additionally supplied is typical product specifications which clearly demonstrates conformance to section 1406 of the IBC.

"Fire Resistance Characteristics:

Average Time of Burning <5 sec. (ASTM D 635) Average Extent of Burning 9.4 mm (ASTM D 635) Flame Spread 20 (ASTM E 84) Smoke Density 390 (ASTM E 84)

Ignition Properties Self Ignition did not occur. At 797°F sample began to smolder and continued until consumed (ASTM D 1929)

Radiant Panel Test XXXXX Siding met the conditions for allowable use as specified in section 1406 of the International Building Code. (NFPA 268)"

"NFPA 268 Radiant Heat Test/Ignition Resistance of Exterior Walls. Conclusion that the XXX vinyl sidings were tested and met the conditions for allowable use as specified in Section 1406 of the International Standard Building Code.

The requirements that are applicable to Type I, II, III, and IV construction are simply restated in a straightforward manner in a separate sentence. This only clarifies a confusing passage in the current code language and does not modify any current requirements; therefore the cost of construction should not be affected.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS182–07/08

1405.15, 1405.17 through 1405.17.2; IRC R703.10.1, R703.10.2, Table R703.4

Proponent: Chad Diercks, James Hardie Building Products, Inc.

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC FIRE SAFETY AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC FIRE SAFETY

1. Add new text as follows:

1405.15.1 Panel siding. Fiber-cement panels shall comply with the requirements of ASTM C 1186, Type A, minimum Grade II. Panels shall be installed with the long dimension either parallel or perpendicular to framing. Vertical and horizontal joints shall occur over framing members and shall be sealed with caulking, covered with battens or shall be designed to comply with Section 1403.2. Panel siding shall be installed with fasteners in accordance with the approved manufacturer's instructions.

1405.15.2 Lap siding. Fiber-cement lap siding having a maximum width of 12 inches shall comply with the requirements of ASTM C 1186, Type A, minimum Grade II. Lap siding shall be lapped a minimum of 1¼ inches and lap siding not having tongue-and-groove end joints shall have the ends sealed with caulking, covered with an H-section joint cover, located over a strip of flashing, or shall be designed to comply with Section 1403.2. Lap siding courses shall be installed with the fastener heads exposed or concealed in accordance with the approved manufacturer's instructions.

2. Delete without substitution as follows:

~~**1405.17 Fiber cement siding.**~~

~~**1405.17.1 Panel siding.** Panels shall be installed with the long dimension parallel to framing. Vertical joints shall occur over framing members and shall be sealed with caulking or covered with battens. Horizontal joints shall be flashed with Z-flashing and blocked with solid wood framing.~~

~~**1405.17.2 Horizontal lap siding.** Lap siding shall be lapped a minimum of 11/4 inches (32 mm) and shall have the ends sealed with caulking, covered with an H-section joint cover or located over a strip of flashing. Lap siding courses shall be permitted to be installed with the fastener heads exposed or concealed, according to approved manufacturers' instructions.~~

PART II – IRC BUILDING/ENERGY

Revise as follows:

TABLE R703.4
WEATHER–RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS

SIDING MATERIAL	NOMINAL THICKNES[a] (inches)	JOINT TREATMENT	WATER RESISTIVE BARRIER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS[b,c,d]					
				Wood or wood structural panel sheathing	Fiber board sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud	Direct to studs	Number or spacing of fasteners
Fiber cement panel siding[rs]	5/16	Note s	Yes Note x	6d common corrosion resistant nail[t]	6d common corrosion resistant nail[t]	6d common corrosion resistant nail[t]	6d common corrosion resistant nail [t,y]	4d common corrosion resistant nail[ut]	6" oc on edges, 12" oc on intermed. studs
Fiber cement lap siding[rv]	5/16	Note v	Yes Note x	6d common corrosion resistant nail[t]	6d common corrosion resistant nail[t]	6d common corrosion resistant nail[t]	6d common corrosion resistant nail [t,y]	6d common corrosion resistant nail[t] OR 11 gage roofing nail[t]	Note w

~~r. Fiber cement siding shall comply with the requirements of ASTM C 1186.~~

t. ~~Minimum 0.102 inch smooth shank, 0.255 inch round head.~~ Fasteners shall comply with the nominal dimensions in ASTM F1667

~~u. Minimum 0.099□□ smooth shank, 0.250□□ round head.~~

w. Face nailing: ~~2 nails~~ one 6d common nail through the overlapping planks at each stud. Concealed nailing: one 11 gage 11/2 inch long galv. roofing nail ~~(0.371□□ head diameter, 0.120□□ shank) or 6d galv. box nail at each stud.~~ through the top edge of each plank at each stud.

(Portions of table and footnotes not shown remain unchanged)

R703.10.1 Panel siding. Fiber-cement panels shall comply with the requirements of ASTM C1186, Type A, minimum Grade II. Panels shall be installed with the long dimension either parallel or perpendicular to framing. Vertical and horizontal joints shall occur over framing members and shall be sealed with caulking, ~~or~~ covered with battens, or shall be designed to comply with Section R703.1. ~~Horizontal joints shall be flashed with Z-flashing and blocked with solid wood framing.~~ Panel siding shall be installed with fasteners according to Table R703.4 or approved manufacturer's installation instructions.

R703.10.2 ~~Horizontal~~ Lap siding. Fiber-cement lap siding having a maximum width of 12 inches shall comply with the requirements of ASTM C1186, Type A, minimum Grade II. Lap siding shall be lapped a minimum of 11/4 inches (32 mm) and lap siding not having tongue-and-groove end joints shall have the ends sealed with caulking, ~~covered~~ installed with an H-section joint cover, ~~or~~ located over a strip of flashing, or shall be designed to comply with Section R703.1. Lap siding courses may be installed with the fastener heads exposed or concealed, according to Table R703.4 or approved manufacturers' installation instructions.

Reason: (IBC) The purpose of this proposed Code change is to clarify and correct errors and omissions in the current language describing the recognized products and recognized methods of installation.

Revision of Section 1405.15, addition of new text 1405.15.1, and deletion of Section 1405.17 and 1405.17.1

The current Code language fails to specify the product "classification type"; either "Type A – Sheets are intended for exterior applications, subject to the direct action of sun, rain or snow" or "Type B – Sheets are intended for exterior application, not subjected to the direct action of sun, rain, or snow" (see ASTM C1186, Sections 4.1 and 4.2) The current Code language fails to specify a minimum "product grade" according to flexural strength either Grade I, II, III or IV (see ASTM C1186 Section 4.4 and Table 1). Additionally, panels are often installed horizontally under windows and as infill panels over windows, doors and in gables where all edges of the panels are supported by framing members. Lastly, the reference to Section 1403.2 Weather Protection is clarifying and is needed to address alternate joint designs currently being used in the field. This would require water penetration testing of these alternative joint designs to ASTM E 331 thereby substantiating the alternate design.

Consequently, Type A sheets suitable for full exterior exposure applications must be specified and the minimum flexural strength specified should be Grade II. Attachment in accordance with should also be clearly stated. Additionally, sheets should be permitted for horizontal application. Finally, jointing shall be in such a manner to comply with Section 1403.2.

Revision of Section 1405.15, addition of new text 1405.15.2, and deletion of Section 1405.17 and 1405.17.2

The current Code language fails to specify a maximum product width. A maximum plank width of 12 inches is proposed and is consistent with the current market offerings for lap siding.

The current Code language fails to specify the product "classification type"; either "Type A – Sheets are intended for exterior applications, subject to the direct action of sun, rain or snow" or "Type B – Sheets are intended for exterior application, not subjected to the direct action of sun, rain, or snow" (see ASTM C1186, Sections 4.1 and 4.2).

The current Code language fails to specify a minimum “product grade” according to flexural strength either Grade I, II, III or IV(see ASTM C1186 Section 4.4 and Table 1).

Consequently, the maximum width of plank is specified at 12 inches. Type A sheets (lap siding) suitable for full exterior exposure applications must be specified and the minimum flexural strength specified should be Grade II.

Additionally, besides being installed horizontally, lap siding is often installed diagonally or vertically in a “board-and-batten” type application. The reference to “horizontal” should be removed.

Lastly, the reference to Section 1403.2 Weather Protection is clarifying and is needed to address alternate joint designs currently being used in the field. This would require water penetration testing of these alternative joint designs to ASTM E 331 thereby substantiating the alternate design.

ICC-ES Acceptance Criteria (AC-90), Section 3.1 supports the proposal for “Type A” sheets (see also evaluation reports for Certainteed Corporation ESR-1668, Section 6.1; James Hardie Building Products NER-405, Section 3.1; and Mexalit Industrial ER-5139, Section 3). The sheet types, according to their intended application, are classified in Section 4.1 of ASTM C1186. The current Industry Standard for flexural strength (bending strength) of exterior flat sheets and planks is Grade II and is verified in a manufacturer’s product declaration (see Mexalit Industrial flexural strength technical data sheet page 2, “Bending Strengths”) and a manufacturer’s evaluation report (see James Hardie Building Products NER-405, Section 3.1, paragraph 3). Section 6.2.1 and Table 1 of ASTM C1186 corroborates this assertion.

Panel siding is currently recognized for installation either vertically or horizontally when the panel edges are supported by framing. (see evaluation report for James Hardie Building Products NER-405, Table 3, footnote 1). Horizontal panel installation should not be prohibited when the panel edges are supported by framing. From an engineering standpoint, as long as the panels are fastened to framing at all supported edges and at intermediate framing members in accordance with the approved manufacturer’s instructions, attributed wind loads and structural loads are not compromised.

The current Industry Standard for fiber-cement planks is a maximum of 12 inches wide (see evaluation reports for Certainteed Corporation ESR 1668, Table 1; James Hardie Building Products NER-405, Table 1; and Mexalit Industrial ER-5139, Table 1).

Fiber-cement lap siding may be installed vertically, diagonally as well as horizontally. As long as the minimum 1¼ inch lap is maintained and the lap siding courses are installed with the fastener heads exposed or concealed, according to the approved manufacturer’s instructions, the system structural performance is not compromised.

Flashing within the context of IBC Section 1405, “Installation Of Wall Coverings”, is currently described in Section 1405.3. Consequently, prescriptive flashing details that may be contraindicated by the architectural design should not be included in this section.

Designing joints within the context of IBC Section 1403.2, “Weather Protection”, is currently described in Section 1403.2. This section allows for alternate designs via compliance testing to ASTM E 331. As a consequence, joint designs complying with ASTM E 331 would substantiate the exceptions under Section 1403.2 thereby allowing for a code compliant installation.

Bibliography:

ICC-ES (AC90) Acceptance Criteria for Fiber Cement Siding used as Exterior Wall Siding.
Certainteed Corporation ES Report ESR-1668
James Hardie Building Products Legacy Report NER-405
Mexalit Industrial Legacy Report ER-5139
North Pacific (MaxiPanel® & MaxiPlank®) Cement Fiber Siding Technical Data
ASTM C1186-02, Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets
ASTM E331-00, Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference

(IRC) The purpose of this proposed Code change is to clarify and correct errors and omissions in the current language describing the recognized product and recognized methods of installation.

Revision of Section 703.10.1

The current Code language fails to specify the product “classification type”; either “Type A – Sheets are intended for exterior applications, subject to the direct action of sun, rain or snow” or “Type B – Sheets are intended for exterior application, not subjected to the direct action of sun, rain, or snow.” (see ASTM C1186-02, Sections 4.2 and 4.2). The current Code language fails to specify a minimum “product grade” according to flexural strength as either Grade I, II, III or IV (see ASTM C1186-02, Section 4.4 and Table 1). The current Code language is unclear concerning the fastening requirements for compliance with either the minimum prescriptive performance requirements as described in Section R703.2 (Table R703.4), or alternative approved fastening requirements complying with the attachment requirements of Tables R301.2(2) and R301.2(3). Additionally, panels are often installed horizontally under windows and as infill panels over windows, doors and in gables where all edges of the panels are supported by framing members. Lastly, the reference to Section R703.1 “General” Exterior Covering is clarifying and is needed to address alternate joint designs currently being used in the field. This would require water penetration testing of these alternative joint designs to ASTM E 331 thereby substantiating the alternate design.

Consequently, Type A sheets suitable for full exterior exposure applications must be specified and the minimum flexural strength specified should be Grade II. Attachment in accordance with the minimum prescriptive requirements of Table R703.4 or alternative “performance-based” attachment should also be clearly stated. Additionally, sheets should be permitted for horizontal application. Flashing is described in R703.8 and can therefore be omitted in this section. Finally, jointing shall be in such a manner to comply with Section R703.1

Revision of Section R703.10.2

The current Code language fails to specify a maximum product width. Conceivably, lap siding having a width of 24 inches could be installed in accordance with Table R703.4 with an expectation of a specified level of wind resistance. I believe that all current published engineering (manufacturer’s instructions and evaluation reports) on this documents a maximum plank width of 12 inches to perform to the tabled requirements.

The current Code language fails to specify the product “classification type”; either “Type A – Sheets are intended for exterior applications, subject to the direct action of sun, rain or snow” or “Type B – Sheets are intended for exterior application, not subjected to the direct action of sun, rain, or snow” (see ASTM C1186-02, Sections 4.2 and 4.2).

The current Code language fails to specify a minimum “product grade” according to flexural strength, either Grade I, II, III or IV (see ASTM C1186-02, Section 4.4 and Table 1).

The current Code language is unclear concerning the fastening requirements for compliance with either the minimum prescriptive performance requirements as described in Section R703.2 (Table R703.4), or alternative approved fastening requirements complying with the attachment requirements of Tables R301.2(2) and R301.2(3).

Lastly, the reference to Section R703.1 “General” Exterior Covering is clarifying and is needed to address alternate joint designs currently being used in the field. This would require water penetration testing of these alternative joint designs to ASTM E 331 thereby substantiating the alternate design.

Consequently, the maximum with of plank is specified at 12 inches. Type A sheets (lap siding) suitable for full exterior exposure applications must be specified and the minimum flexural strength specified should be Grade II. Attachment in accordance with the minimum prescriptive requirements of Table R703.4 or alternative “performance-based” attachment should also be clearly stated. Additionally, besides being installed horizontally, lap siding is often installed diagonally or vertically in a “board-and-batten” type application. Finally, jointing shall be in such a manner to comply with Section R703.1

Deletion of footnote “r” in Table R703.4

Fiber-cement is not correctly described in the existing footnote “r”. Recommended revisions to Sections R703.10.2 and R703.10.2 fully accommodate the description of Fiber-Cement Exterior Cladding.

Revision to footnote “t” of Table R703.4

The current tabled fasteners for the attachment of fiber-cement are “6d corrosion resistant nail (superscript - t)” or “4d corrosion resistant nail (superscript u)”. Neither of the minimum fastener dimensions in footnotes “t” and “u” conforms to nominal dimensions in the National Standard (ASTM F 1667) for either “common” or “box” nails. The fasteners referenced in the table and footnotes should comply with the dimensions in the current National Standard.

“ASTM F 1667, Table 6 (Type I, Style 4A – Box Nails”

4d = nominal 1½ inch long, 0.080 inch shank, 0,219 inch head diameter

6d = nominal 2 inch long, 0.099 inch shank diameter, 0.266 inch head diameter

“ASTM F 1667, Table 15 “Type I, Style 10 – Common Nails”

4d = nominal 1½ inch long, 0.099 inch shank, 0.250 inch head diameter

6d = nominal 2 inch long, 0.113 inch shank diameter, 0.266 inch head diameter

Tolerances (ASTM F 1667, Section 8.2) on nominal dimensions for nails and spikes are:

± 1/16 inch for lengths over 1 inch, up to and including 2½ inches;

± 0.004 inch for shank diameters of 0.076 inch and larger;

+0, -10% for head diameter for roofing nails; and

± 10% for head diameters of other brand, nails, and spikes.

Delete footnote “u” of Table R703.4 without substitution

Footnote “t” has been revised to specify fasteners complying with nominal dimensions in ASTM F1667. Information contained in footnote “u” is no longer necessary.

Revision to footnote “w” of Table R703.4

The current Code language is contradictory in the description of fasteners for face nailing and concealed nailing in order to comply with the prescriptive performance requirements as described in Section R703.4 “Attachments” (<110 miles per hour, Category C at 33 feet above ground). It is inconsistent to permit 6d galv. box nails (nominal head diameter of 0.266 inch) to be used for concealed nailing in the same section that specifies 11 gage, 1-1/2 inch long roofing nails (nominal head diameter of 0.371 inch) for concealed fastening. Current manufacturer compliance reports do not recognize the use of fasteners having a nominal head diameter of 0.267 inch for concealed fastening. Current manufacturer compliance reports do recognize the use of roofing nails having a nominal head diameter of 0.371 inch for concealed fastening for the design loads described in Section R703.4.

ICC-ES Acceptance Criteria (AC-90), Section 3.1 supports the proposal for “Type A” sheets (See also evaluation reports for James Hardie Building Products NER-405, Section 3.1; Mexalit Industrial ER-5139, Section 3; and Certainteed Corporation ESR-1668, Section 6.1. The current Industry standard for flexural strength (bending strength) of exterior flat sheets is Grade II and is verified in manufacturer’s product declarations (see Mexalit Technical Data Sheet) or evaluation report (see James Hardie Building Products NER-405, Section 3.1).

Designing joints within the context of IRC Section R703.1, “General” Exterior Covering, is currently described in Section R703.1. This section allows for alternate designs via compliance testing to ASTM E 331. As a consequence, joint designs complying with ASTM E 331 would substantiate the exceptions under Section R703.1 thereby allowing for a code compliant installation.

Bibliography:

ASTM C1186-02, Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets.
ASTM E331-00, Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference
ASTM F1667-03, Specification for Driven Fasteners, Nails, Spikes, and Staples.
ICC-ES (AC90) Acceptance Criteria for Fiber Cement Siding used as Exterior Wall Siding.
Certainteed Corporation ES Report ESR-1668
James Hardie Building Products Legacy Report NER-405
Mexalit Industrial Legacy Report ER-5139
North Pacific (MaxiPanel® & MaxiPlank®) Cement Fiber Siding Technical Data

Cost Impact: The code change proposal will not increase the cost of construction.

PART I – IBC FIRE SAFETY

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IRC BUILDING/ENERGY

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS183–07/08
1406.2.2

Proponent: Andy Williams, Alcan Composites USA, Inc.

Revise as follows:

1406.2.2 (Supp) ~~Architectural trim~~ Type I, II, III, and IV construction. ~~In~~ On buildings of Type I, II, III and IV construction, exterior wall coverings shall be permitted to be constructed of wood ~~where permitted by~~ in accordance with Section 1405.4, or other equivalent combustible material~~.~~, complying with the following limitations:

1. Combustible exterior wall coverings, ~~other than fire-retardant-treated wood complying with Section 2303.2 for exterior installation,~~ shall not exceed 10 percent of an exterior wall surface area where the fire separation distance is 5 feet (1524 mm) or less.
2. Combustible architectural trim shall be limited to three stories or 40 feet (12 192 mm) in height above grade plane. ~~Noncombustible materials shall be permitted to be of any height provided the materials are secured to the wall with metal or other approved noncombustible brackets.~~

   Exception: Combustible ~~architectural trim~~ exterior wall coverings constructed of fire-retardant treated wood complying with Section 2303.2 for exterior installation shall not be limited in wall surface area where the fire separation distance is 5 feet (1524 mm) or less and shall be permitted up to four stories or 60 feet in height above grade plane regardless of the fire separation distance.

Reason: The purpose of this code change proposal is to further clarify this section which was revised during the last code development cycle. In our opinion this does not change the technical provisions. We believe these revisions will make this section more user friendly as well. It has been reformatted so that the two conditions where combustible exterior wall coverings and/or trim are allowed are clearly delineated. The title is modified to assist the user to understand that its intent is to apply to those types of construction that have noncombustible exterior walls. This section also deals with more than architectural trim as it contains criteria for exterior wall coverings which include architectural trim. The exception has then been combined to apply to the entire section for fire-retardant-treated wood. And, finally, the sentence allowing noncombustible materials of any height has been deleted. It is unnecessary since this section is only dealing with the allowable use of combustible exterior wall coverings and trim on buildings required to have noncombustible exterior walls.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS184–07/08
1406.5; IRC R302.2

Proponent: Tom Lariviere, Fire Department, Madison, MS, representing Joint Fire Service Review Committee

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC FIRE SAFETY AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC FIRE SAFETY

Add new text as follows:

1406.5 Protection of eaves. Eaves and soffits shall be protected on the exposed underside by materials with an approved thermal barrier that will limit the spread of fire to the attic space using materials with a 15 minute fire-resistance rating. Soffit vents shall not be located within 2 ft. horizontally of wall openings.

Exception: Buildings protected throughout with an approved automatic sprinkler system.

PART II – IRC BUILDING/ENERGY

Add new text as follows:

R302.2 Protection of eaves. Eaves and soffits shall be protected on the exposed underside by materials with an approved thermal barrier that will limit the spread of fire to the attic space using materials with a 15 minute fire-resistance rating. Soffit vents shall not be located within 2 ft. horizontally of wall openings.

Exception: Buildings protected throughout with an approved automatic sprinkler system.

Reason: It is well documented that fire readily enters into the attic space due to fire exiting exterior wall openings or fires originating on the exterior. Testing for the Georgia State Fire Marshal's Office has shown that common soffit materials fail in less than 10 seconds when exposed to an exterior fire when enclosed with lightweight siding or vinyl siding. The intent of this provision is to retard the spread of fire into the attic space. That fire could originate from an outdoor exposure fire, or could be fire that has extended out of the window and up the exterior siding.

This proposal requires a 15 minute fire rating for those exterior items.

Cost Impact: The code change proposal will increase the cost of construction.

PART I – IBC FIRE SAFETY

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IRC BUILDING/ENERGY

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS185–07/08
1407.8

Proponent: Andy Williams, Alcan Composites USA, Inc.

Revise as follows:

1407.8 Fire-resistance rating. Where MCM systems are used on exterior walls required to have a fire-resistance rating in accordance with Section 704, evidence shall be submitted to the building official that the required fire-resistance rating is maintained.

> **Exception:** MCM systems not containing foam plastic insulation, which are installed on the outer surface of a fire-resistance rated exterior wall in a manner such that the attachments do not penetrate through the entire exterior wall assembly, shall not be required to comply with this section.

Reason: A new exception is being proposed to this section which currently requires that sufficient evidence be submitted to the building official to indicate that the required fire-resistance rating of the exterior wall to which the MCM system is applied is not adversely affected by the installation of the MCM system. The proposed exception is intended to address those situations where the MCM system does not contain foam plastic insulation and is installed onto the outer surface of the fire-resistance rated exterior wall so that the attachments to the wall do not penetrate through the entire wall assembly to the interior face where the attachments could be exposed to a fire condition inside the building.

We have proposed to exclude systems containing foam plastic insulation on the exterior face of exterior walls since they pose unique conditions that definitely require an engineering analysis or additional fire testing to verify that such an installation would not unduly impair the required fire-resistance rating of the exterior wall. However, for the typical MCM system wherein the MCM panel is “thermally thin”, and contains minimal combustible mass, there should be no significant impact on the fire-resistance rating of the exterior wall, especially if the fire-resistance is required to be determined from the exterior side. For the interior side, there will be adequate heat dissipation on the unexposed surface, which in this case would be the exterior surface of the wall on which the MCM system is installed, since the MCM system has no significant insulation qualities. Thus, the main concern is that there are no through connections made when the system is attached to the exterior wall such that there would be a direct path for heat from an interior fire to penetrate the wall and pass through to the exterior surface.

In our opinion, attaching an MCM system to a fire-resistance rated exterior wall is not significantly different than attaching an interior finish wall panel to a fire-resistance rated interior wall such as the interior face of an exterior bearing wall, for example. Traditionally, there’s been no need to provide additional evaluation of such installations to determine if the fire-resistance rating of the interior wall is maintained or otherwise not adversely impacted by the installation of the interior finish material. Therefore, we believe that this exception is a reasonable approach to allowing certain types of MCM systems to be installed on fire-resistance rated exterior walls without requiring an engineering evaluation or additional fire testing to verify that the fire-resistance rating is not adversely affected by such installation.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS186–07/08
1407.9

Proponent: Robert McCluer, RMc Code Consulting, representing Metal Construction Association

Revise as follows:

1407.9 (Supp) Surface-burning characteristics. Unless otherwise specified, MCM shall have a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested ~~as an assembly~~ in the maximum thickness intended for use in accordance with ASTM E 84 or UL 723.

Reason: Over the years, there has been a significant amount of confusion about what is the intent of this section regarding what actually needs to be tested. Use of the term "assembly" has led to questions regarding the extent to which attachments, substrate, framing, and the aluminum profiles should be provided for testing in the same manner the MCM panels are installed on a building. This section is only intended to evaluate the surface burning characteristics of the cladding material. Many of the attachment systems are not able to be installed within the space limitations of the ASTM E84 apparatus. Thus the need for clarity in application.

For the purpose of testing the surface burning characteristics of the MCM to determine its acceptability for use on the exterior of buildings required to be constructed of noncombustible materials, it should only be necessary to test the MCM using a typical joinery method or system when the MCM's are installed end to end in the tunnel furnace used in ASTM E84. There is no technical reason to include the framing system, substrates, and structural attachments on the back side of the MCM for an exterior wall application when these framing/attachment elements are not required for wall panels used as interior finish when they are tested to ASTM E84 as required in Chapter 8. Specifically, Section 803.1.1 requires interior wall finish to be tested in accordance with ASTM E84. ASTM E84 specifies that the test specimen sections (panels) be joined or butted end-to-end using mounting methods specified therein or in Appendix X1. This should also be adequate for testing MCM which are intended to be used on exterior walls.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS187–07/08
1407.10.4

Proponent: Robert McCluer, RMc Code Consulting, representing Metal Construction Association

Revise as follows:

1407.10.4 Full-scale tests. The MCM ~~exterior wall assembly~~ system shall be tested in accordance with, and comply with, the acceptance criteria of NFPA 285. Such testing shall be performed on the MCM system with the MCM in the maximum thickness intended for use.

Reason: The term "MCM exterior wall assembly" is not a defined term. Interpretation of this term has led to confusion regarding the level of detail reported when an MCM system is tested in accordance with NFPA 285. Changing the term to "MCM system" provides better guidance for the building official of what was tested so that a comparison can be made to what is being proposed for construction. This also makes the terms in this section internally consistent since "MCM system" is used in the second sentence.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS188–07/08
1407.13 (New)

Proponent: Robert McCluer, RMc Code Consulting, representing Metal Construction Association

Add new text as follows:

1407.13 Foam plastic insulation. MCM systems containing foam plastic insulation shall also comply with the requirements of Section 2603.

(Renumber subsequent section)

Reason: Although Section 1407.1.1 does not allow the plastic core of MCM to contain foam plastic insulation, the MCM system installed on the exterior wall of a building may indeed contain foam plastic insulation to satisfy the insulation requirements of the Energy Code, for example. In that case, it is critical that the wall system meet the requirements of Section 2603 which address the use of foam plastic insulation in or on exterior walls. This is even more critical for buildings where the exterior walls are required to be of noncombustible construction which are regulated by Section 2603.5 Exterior Walls of Buildings of Any Height. Thus, this code change proposal simply provides a user friendly cross-reference to Section 2603 to make sure the designer realizes that an MCM system which utilizes foam plastic insulation also needs to comply with Section 2603.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS189–07/08
IFC 804.2.1 (IBC [F] 2604.2.1); IRC R314.5.9

Proponent: Betsy Steiner, EPS Molders Association

THESE PROPOSALS ARE ON THE AGENDA OF THE IFC AND THE IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IFC

Delete without substitution:

~~**804.2.1 (IBC [F] 2604.2.1) Density.** The minimum density of the interior trim shall be 20 pcf (320 kg/m3).~~

(Renumber subsequent sections)

PART II – IRC BUILDING/ENERGY

Revise as follows:

R314.5.9 Interior trim. The thermal barrier specified in Section R314.4 is not required for exposed foam plastic interior trim, provided all of the following are met:

~~1. The minimum density is 20 pounds per cubic foot (320 kg/m3).~~
~~2.~~ 1. The maximum thickness of the trim is 0.5 inch (12.7 mm) and the maximum width is 8 inches (204 mm).
~~3.~~ 2. The interior trim shall not constitute more than 10 percent of the aggregate wall and ceiling area of any room or space.
~~4.~~ 3. The flame spread index does not exceed 75 when tested per ASTM E 84. The smoke-developed index is not limited.

Reason: (IFC) The code change is proposing to eliminate the density requirement for Foam Plastic used as interior trim. The current IBC section 2604.2 is directly related to protection of life safety by limiting potential fire risk. The items addresses include limitation of the thickness and area of the foam plastic along with flame spread requirements. The requirement of IBC 2604.2.1 is specific to requiring a minimum density. This requirement does not provide significant value to this section and is proposed to be deleted. Many foam plastics are available with density below 20 pcf and their installation would in fact reduce the potential energy contribution to a fire.

(IRC) The code change is proposing to eliminate the density requirement for Foam Plastic used as interior trim. The current IRC Section 314.5.9 is directly related to protection of life safety by limiting potential fire risk. The items addresses include limitation of the thickness and area of the foam plastic along with flame spread requirements. The requirement of and item 1 under IRC R314.9 is specific to requiring a minimum density. This requirement does not provide significant value to this section and is proposed to be deleted. Many foam plastics are available with density below 20 pcf and their installation would reduce the potential energy contribution to a fire.

Cost Impact: The code change proposal will not increase the cost of construction.

PART I – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IRC BUILDING/ENERGY

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS190–07/08
2603.4.1.6

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

2603.4.1.6 Attics and crawl spaces. Within an attic or crawl space where entry is made only for service of utilities, foam plastic insulation shall be protected against ignition by 1.5-inch-thick (38 mm) mineral fiber insulation; ~~0.25-inch-thick (6.4 mm) wood structural panel, particleboard or hardboard;~~ 0.375-inch (9.5 mm) gypsum wallboard, corrosion-resistant steel having a base metal thickness of 0.016 inch (0.4 mm) or other approved material installed in such a manner that the foam plastic insulation is not exposed. The protective covering shall be consistent with the requirements for the type of construction.

Reason: Foam plastic insulation has not been permitted to be used exposed in codes for many years. The separation required is normally a thermal barrier in accordance with 2603.4. The reason for this is because it has been known for many years that testing of foam plastic insulation by using ASTM E 84 (Steiner tunnel test) can generate misleading results. This was the result of a 1973 Federal Trade Commission ruling and agreement. It is also well known that burning foam plastic insulation can generate very high heat release rate values and severe fires.

The use of foam plastic insulation in attics and crawl spaces has been allowed as an exception because of the remoteness of the area. Nowadays it is no longer reasonable to consider these areas to be inaccessible spaces. Therefore it is important to take a fresh look at this application.

Having the foam plastic insulation covered simply by a ¼ inch wood panel (not required to be fire-retardant-treated wood) is not safe as the wood panel can ignite relatively easily and the fire would then spread to the foam and a large fire would result. The other "protective coverings" permitted to cover the foam plastic insulation, namely 3/8 inch gypsum wallboard, 1.5 inch mineral fiber insulation and 1/64 inch corrosion resistant steel are all either non combustible or virtually noncombustible materials. There is no need for this protective covering to be non combustible but it needs to exhibit better fire performance than ¼ inch wood. This is covered by the permission to use "other approved materials", which gives the appropriate leeway to the authority having jurisdiction.

Other requirements for foam plastic insulation in the IBC:

1. Overall it needs to meet a flame spread index of 75 and a smoke developed index of 450 and be covered by a thermal barrier (2603.3 & chapter 8)
2. In cold storage buildings, ice plants, food plants, food processing rooms and similar areas, it needs to be tested in a thickness of 4 inches and can be used in a thickness up to 10 inches, as long as there are sprinklers (2603.3 exception 2).
3. As part of Class A, B, or C roof covering assemblies, if the foam passes FM 4450 or UL 1256 (2603.3 exception 3).
4. As a special approval, with large scale tests (2603.3 exception 4 and 2603.9).
5. Foam plastic signs, meeting UL 1975 (402.15).
6. Within masonry walls covered by 1 inch of masonry (2603.4.1.1).
7. Within freezer or cooler walls, if they have a flame spread index of 25, a smoke developed index of 450, flash ignition and self ignition temperature limits, are covered by aluminum or steel and are in a sprinklered compartment (2603.4.1.2).
8. Within walk-in coolers, with a size limitation, a metal facing or aluminum or steel and a maximum thickness of 4 inches (2603.4.1.3).
9. On exterior walls of one story buildings, if they have a flame spread index of 25, a smoke developed index of 450, a maximum thickness of 4 inches, are covered by aluminum or steel and are in a sprinklered compartment (2603.4.1.4).
10. In roofing, as part of Class A, B, or C roof covering assemblies, if the foam passes FM 4450 or UL 1256 or if the foam is separated from the building by wood structural panel sheathing not less than 0.47 inch in thickness bonded with exterior glue, with edges supported by blocking, tongue-and-groove joints or other approved type of edge support, or an equivalent material. (2603.4.1.5).
11. In doors not required to have a fire protection rating and in garage doors if covered by aluminum or steel (2603.4.1.7 and 2603.4.1.9).
12. As siding backer board, if it has not more than 2,000 Btu/sq. ft. heat content, and with a maximum thickness of 0.5 inch, provided it is separated from the interior of the building by not less than 2 inches (51 mm) of mineral fiber insulation or equivalent or if it is applied as insulation with re-siding over existing wall construction. (2603.4.1.10)

Cost Impact: This code change should not affect the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS191–07/08
2603.5.5

Proponent: John J. Krohn, PE, Precast/Prestressed Concrete Institute

Revise as follows:

2603.5.5 Test standard. The wall assembly shall be tested in accordance with and comply with the acceptance criteria of NFPA 285.

Exceptions:

1. One-story buildings complying with Section 2603.4.1.4.
2. Walls having a minimum 2-inch (51 mm) thickness of concrete facings enclosing a maximum 4-inch (102 mm) thickness foam plastic insulation core.

Reason: Chapter 7 – Fire-Resistance-Rated Construction, Section 721.2.1.2.2 Foam plastic insulation accounts for multi-wythe, concrete sandwich panels that vary in concrete and insulation thickness by permitting the use of Equation 7-4 to determine the fire endurance of the wall assembly in minutes.

Once the panels are erected and the building envelope is closed, the foam insulation core is no longer exposed to either the interior or exterior of the building but is sandwiched between two wythes of concrete. The original intention of Section 2603.5.5 was not intended for this type of wall assembly.

The precast concrete industry has been producing a concrete insulated sandwich wall panel for many years. These panels are used for exterior cladding in a variety of building types for both a load bearing and non-load bearing condition. There is no standard size of panel but the panels are customized for each unique building project criterion. Typically in the precast/prestressed concrete industry, these panel sizes range from 8 to 14 feet in width and 10 to 60 feet in length depending on the erected orientation of the panel. These panels will either span vertically from the foundation to the roof or horizontally from support to support and may be continuous across each story.

The panels will have an exterior and interior wythe of minimum 2" thick concrete with a foam plastic insulation core sandwiched between each wythe of concrete. The thicknesses of the concrete and insulation wythes vary greatly from project to project depending on the required R-Value and loading criteria.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS192–07/08
2605.2

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

2605.1 Interior use. Where used within a building, plastic veneer shall comply with the interior finish requirements of Chapter 8.

2605.2 Exterior use. Exterior plastic veneer, other than plastic siding, shall be permitted to be installed on the exterior walls of buildings of any type of construction in accordance with all of the following requirements:

1. Plastic veneer shall comply with Section 2606.4.
2. Plastic veneer shall not be attached to any exterior wall to a height greater than 50 feet (15 240 mm) above grade.
3. Sections of plastic veneer shall not exceed 300 square feet (27.9 m^2) in area and shall be separated by a minimum of 4 feet (1219 mm) vertically.

Exception: The area and separation requirements and the smoke-density limitation are not applicable to plastic veneer applied to buildings constructed of Type VB construction, provided the walls are not required to have a fire-resistance rating.

2605.3 Plastic siding. Plastic siding shall comply with the requirements of Sections 1404 and 1405.

Reason: Plastic siding should meet the requirements of the corresponding standard specifications and not the requirements of light-transmitting plastics shown in 2606.4. This is simply clarification but would prevent confusion.

The definitions of exterior wall covering and of veneer are almost interchangeable. Therefore, it is possible that someone might interpret that vinyl siding (or polypropylene siding) are plastic veneers and can meet the requirements of 2606.4. See as follows:

EXTERIOR WALL COVERING. A material or assembly of materials applied on the exterior side of exterior walls for the purpose of providing a weather-resisting barrier, insulation or for aesthetics, including but not limited to, veneers, siding, exterior insulation and finish systems, architectural trim and embellishments such as cornices, soffits, facias, gutters and leaders.

VENEER. A facing attached to a wall for the purpose of providing ornamentation, protection or insulation, but not counted as adding strength to the wall.

VINYL SIDING. A shaped material, made principally from rigid polyvinyl chloride (PVC), that is used as an exterior wall covering.

POLYPROPYLENE SIDING. A shaped material, made principally from polypropylene homopolymer, or copolymer, which in some cases may contain fillers and/or reinforcements, that is used to clad exterior walls of buildings.

Cost Impact: This proposal should not affect the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS193–07/08
2604.4

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

2606.4 (Supp) Specifications. Light-transmitting plastics, including thermoplastic, thermosetting or reinforced thermosetting plastic material, shall comply with the following:

1. Have a self-ignition temperature of 650ºF (343ºC) or greater where tested in accordance with ASTM D 1929;
2. Have a smoke-developed index not greater than 450 where tested in the manner intended for use in accordance with ASTM E 84 or UL 723, or a maximum average smoke density rating not greater than 75 where tested in the thickness intended for use in accordance with ASTM D 2843 or a test average specific extinction area not greater than 450 m^2/kg when tested in the thickness intended for use in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2, in the horizontal orientation and
3. Shall conform to one of the following combustibility classifications:

Class CC1: Plastic materials that have a burning extent of 1 inch (25 mm) or less where tested at a nominal thickness of 0.060 inch (1.5 mm), or in the thickness intended for use, in accordance with ASTM D 635.

Class CC2: Plastic materials that have a burning rate of 2.5 inches per minute (1.06 mm/s) or less where tested at a nominal thickness of 0.060 inch (1.5 mm), or in the thickness intended for use, in accordance with ASTM D 635.

Reason: The provisions of 2606.4 apply to light-transmitting plastics and to plastic veneer for exterior use. Unfortunately, the two tests recommended for assessing one of the properties to be measured (smoke) have some problems in terms of the application, and an added option should be added.

ASTM D 2843 is an old-fashioned small-scale fire test intended for assessing the "Density of Smoke from the Burning or Decomposition of Plastics" (The original reference for the test method is: "A Method of Measuring Smoke Density," *NFPA Quarterly,* QNFPA, Vol. 57, January 1964, p. 276. Reprint NFPA Q57-9."). Nowadays the test equipment for ASTM D 2843 is difficult to obtain commercially. It is also difficult to find test laboratories that can conduct tests to ASTM D 2843. Test specimens for ASTM D 2843 are 1 inch by 1 inch by 0.25 inch thick.

The Steiner tunnel, ASTM E 84, is a good test for measuring flame spread and smoke from traditional building materials but it was not intended for testing thermoplastic materials that melt and drip. Light-transmitting plastics are very rarely tested in the Steiner tunnel, ASTM E 84, because they tend to melt and drip (and are thus not a self-supporting specimen) and because such a large test specimen is needed that manufacturers usually prefer tests with smaller test specimens.

Therefore, it is important to offer an alternate test method for this application. The cone calorimeter, ASTM E 1354, is a test method that assesses heat and smoke release and uses small test specimens (roughly 4 inches by 4 inches by use thickness) and it is known to be one of the best fire test methods for assessing fire properties of materials. Testing is conducted in the horizontal orientation with radiation from above the test specimen and thus melting and dripping problems are eliminated.

When tested in the cone calorimeter, ASTM E 1354, in tests I conducted, it was found that PMMA (typical trade name Plexiglas), which is the typical plastic material used as a light transmitting plastic, exhibits the following average specific extinction area (smoke) values: 67 m^2/kg, at an incident heat flux of 20 kW/m^2, 77 m^2/kg, at an incident heat flux of 40 kW/m^2 and 97 m^2/kg, at an incident heat flux of 70 kW/m^2. Thus, an average specific extinction area of 450 m^2/kg, at an incident heat flux of 50 kW/m^2, will easily be achievable by light transmitting plastics. This proposal does not require the use of the cone calorimeter but simply offers the test method as an optional alternative, for measuring smoke, to the ASTM D 2843 or ASTM E 84 test methods.

ASTM E 1354, cone calorimeter, is a test that is already referenced in the ICC family of codes in both the IFC and the IBC. In the IFC the test is being used for plastic materials in large wastebaskets (section 808.1) and in the IBC it is used for plastic materials in children's playgrounds (section 402.11.1).

Cost Impact: The code change proposal should not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS194–07/08
2606.7

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corporation

Revise as follows:

2606.7 Light-diffusing systems. Unless the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, light-diffusing systems shall not be installed in the following occupancies and locations:

1. Group A with an occupant load of 1,000 or more.
2. Theaters with a stage and proscenium opening and an occupant load of 700 or more.
3. Group I-2.
4. Group I-3.
5. ~~Exit stairways~~ Vertical exit enclosures and exit passageways.

Reason: Editorial in nature but needed so that ramps, when used as an exit and located in an enclosure are included.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS195–07/08
2602, 2612 (New), Chapter 35 (New)

Proponent: Jesse J. Beitel, Hughes Associates, Inc., representing Reflective Insulation Manufacturers Association

1. Add new definition as follows:

REFLECTIVE PLASTIC CORE INSULATION. An insulation material packaged in rolls that is less than 0.5 inches thick with at least one exterior low emittance surface (0.1 or less) and a core material containing voids or cells with thermal value below R 2.

2. Add new text as follows:

SECTION 2612
REFLECTIVE PLASTIC CORE INSULATION

2612.1 General. The provisions of this section shall govern the requirements and uses of reflective plastic core insulation in buildings and structures.

2612.2. Identification. Packages and containers of reflective plastic core insulation delivered to the job site shall show the manufacturer's or supplier's name, product identification and information sufficient to determine that the end use will comply with the code requirements.

2612.3. Surface-burning characteristics. Reflective plastic core insulation shall have a flame-spread index of not more than 25 and a smoke-developed index of not more than 450 when tested at the maximum thickness intended for use in accordance with ASTM E 84 with the sample mounted on 2-inch (51 mm) high metal frames so as to that create an air space between the unexposed face of the reflective plastic core insulation and the lid of the test apparatus.

Exceptions:

1. Reflective plastic core insulation that meets the requirements of UL 1715 or NFPA 286 (with the acceptance criteria of Section 803.1.2.1). Such testing shall be related to the end-use configuration and be performed on the maximum thickness of reflective plastic insulation intended for use.
2. Reflective plastic core insulation shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 450 when tested at the maximum thickness intended for use in accordance with ASTM E 84 using the specimen preparation and mounting procedures of ASTM E XXXX.

3. Add new standard to Chapter 35 as follows:

ASTM

E XXXX-0Y	Standard Practice for Specimen Preparation and Mounting of Reflective Insulation and Sheet Radiant Barriers for Building Applications to Assess Surface Burning Characteristics

Reason: The purpose of this new Section to Chapter 26 is to add a definition of reflective plastic core insulation and provide fire test requirements for these types of materials.

Over the last several years, work has been performed wherein the flame-spread Index of some materials tested as loose lay over poultry netting/rods in the ASTM E 84 test may not provide an appropriate measure of performance especially when compared to end-use testing. Since reflective plastic core insulation materials were being tested in this manner, the Reflective Insulation Manufacturers Association (RIMA) actively

began a program to evaluate the overall fire performance of their products. The goal of the program was to develop, if possible, a mounting method for these types of materials in the ASTM E 84 test method such that the E 84 flame-spread results could be correlated to full-scale fire tests of the same materials in end-use configurations.

This successful research program has resulted in a new mounting method for these types of materials when tested in the ASTM E 84 test method. The new mounting method requires that the test material be mounted on a 2-inch high, metal frame that is the width of the test apparatus with cross members no closer than 8 ft. The sample is then placed on top of the test apparatus such that a 2-inch air gap is created between the back surface of the test material and the lid of the test apparatus. The exposed face of the test sample is below the mounting frame and is directly exposed to the fire source.

During this testing program, samples of various reflective plastic core insulation materials were tested with the new mounting method and they were also tested in full-scale room/corner tests. The full-scale room corner tests were conducted in accordance with NFPA 286 and the samples were mounted in a manner that represented typical end-use applications.

The results of the testing showed that the results of the ASTM E 84 tests with the new mounting method did correlate with the full-scale room/corner tests. A total of eleven ASTM E 84 tests were conducted using the new mounting method and the same materials were tested in eleven full-scale room/corner tests. The results showed that for a material which exhibited high flame-spread in the ASTM E 84 test, it also caused flashover to occur in the room/corner test. Materials which exhibited a flame-spread index of 25 or less in ASTM E 84 tests with the new mounting method passed the room/corner tests. Thus, a correlation was established between the ASTM E 84 test with the new mounting method and the NFPA 286 test. The results of this program are summarized in the attached Table.

This testing was completed late last year and the new mounting method has been submitted to ASTM Committee E5 on Fire Standards and is currently working its way through that process.

This code change develops a new section in Chapter 26 for reflective plastic core insulation materials. These materials are different from the foam plastics already regulated by Chapter and thus a new section is most appropriate. The proposal provides a definition for these materials and the use of the words “packaged in rolls” is an important part. This provides a way to distinguish these materials from rigid foam plastic board stock since it is not the intent of this section to apply to foam plastic insulations.

The primary test requirement is the ASTM E 84 test with the new mounting method. Since the new mounting method is not completely through ASTM’s processing, a generic description is included of immediate use. Also, as an exception, a placeholder is provided such that if the new mounting method is completed in time, it can be easily referenced.

Also, as an exception, the manufacturer can perform the NFPA 286 test as an alternative to the ASTM E 84 with the new mounting method. This is similar to the same type of allowance currently provided for other materials in Chapter 8 of the Code.

The fire testing of these materials were discussed during the last code change cycle. At that time, the committee felt that these materials did need to be addressed and gave industry time to complete the testing and develop a code change. As promised, RIMA has developed this code change in response to the Committee and others and based on the extensive fire testing program, it provides an appropriate manner to regulate the fire performance of these types of materials.

RIMA Fire Performance Evaluation Testing and Code Analysis

Manufacturer	Product Description	E84 Mounting Details	FSI	SDI	Room Corner Mounting Details	Material Installation Location	Air Gap	Flames to Ceiling During 40 kW exposure?	Room flashover occur?	Peak Heat flux (kW/m^2)	Flames to room extremities?	Peak HRR (kW)	Total Smoke (m^2)	Upper Layer Temperatures <1,112°F?	Test Report Date	Test Report No.
A	Radiant Barrier/Reflective Insulation	2x2 metal frame with cross members spaced 2 ft OC. Air Gap Behind RI	0	10	Attached directly to walls with metal studs 2 ft OC then installed over RI	Walls and ceiling	No	No	No	9	No	175	40	Yes	E84 - 6/23/06	ITS 3099486SAT-002
															Room - 8/14-06	ITS 3099486SAT-001 R1
B	White Poly/Double Bubble/Metalized reflective insulation, Nominal 5/16 inch thickness - White Poly to fire	Al framework (nom 2 x 2in.) constructed w/crossties at 8 ft. Air Gap Behind RI	0	15	Metal 2x4 studs, 4 ft OC on walls and ceiling. Material applied directly to studs, resulting in 1.5 inch air gap behind material	Walls and ceiling	Yes	No	No	1.9	No	425	37	Yes	E84 - 4/5/07	ITS 3120110SAT-01 1
															Room - 4/24/07	ITS 3120110-018
B	Metalized/Double Bubble/White Poly (FR) Reflective Insulation. White Poly to Fire	Al framework (nom 2 x 2in.) constructed w/ crossties at 8 ft. Air Gap Behind RI	5	5	Metal 2x4 studs, 4 ft OC on walls and ceiling. Material applied directly to studs, resulting in 1.5 inch air gap behind material	Walls and ceiling	Yes	No	No	4	No	170	11	Yes	E84 - 5/20/06	ITS 3097439SAT-002
															Room - 5/24/07	ITS 3097439SAT-008
C	Foil/double bubble/foil reflective insulation	Metal framework (nom.2 x 2 in.) constructed w/ crossties at 8 ft. Air Gap Behind RI	370	40	Metal 2x4 studs, 2 ft OC on walls and ceiling. Material applied directly to studs, resulting in 1.5 inch air gap behind material	Walls and ceiling	Yes	Yes	Yes	18	Yes	260	1250	No	E84 - 11/28/06	ITS - 3109907SAT-003
															Room - 11/30/06	ITS - 3109907
D	Metalized/Double Bubble/Metalized reflectivinsulation (RDB3), Nominal 5/16 inch thickness, Metalized insulation to fire	Metal framework (2"wide x 2" thick) constructed w/ crossties at 8 ft. Air Gap Behind RI	0	25	Metal 2x4 studs, 4 ft OC on walls and ceiling. Material applied directly to studs, resulting in 1.5 inch air gap behind material	Walls and ceiling	Yes	No	No	1.7	No	280	26	Yes	E84 - 4/4/07	ITS 31201 10SAT-003
															5/7/1907	ITS3122111-007
D	White Poly/Double Bubble/Metalized reflective insulation (RDBW3) Nominal 5/16 inch thickness, White poly to fire	Metal framework (2"wide x 2" thick) constructed w/ crossties at 8 ft. Air Gap Behind RI	0	20	Metal 2x4 studs, 4 ft OC on walls and ceiling. Material applied directly to studs, resulting in 1.5 inch air gap behind material	Walls and ceiling	Yes	No	No	2	No	260	43	Yes	E84 - 4/4/07	ITS 31201 10SAT-004
															Room 5/7/07	ITS 3122111-006
E	White/Double Bubble/Metalized (FR) Reflective insulation, Nominal 5/16 inch thickness, White poly to fire	Metal framework (2"wide x 2" thick) constructed w/ crossties at 8 ft. Air Gap Behind RI	0	10	Metal 2x4 studs, 2 ft OC on walls and ceiling. Material applied directly to studs, resulting in 1.5 inch air gap behind material	Walls and ceiling	Yes	No	No	4.5	No	165	11	Yes	E84 - 8/8/06	ITS 3102446SAT-003
															Room - 7/20/06	ITS 3097439SAT-0008 RI
E	White Poly /Single Bubble/Metalized - White Poly to Fire	Metal framework (2"wide x 2" thick) constructed w/ crossties at 8 ft. Air Gap Behind RI	0	30	Metal 2x4 studs, 2 ft OC on walls and ceiling. Material appliedirectly to studs, resulting in 1.5 inch air behind material gap	Walls and ceiling	Yes	No	No	2	No	180	45	Yes	E84 - 1/26/07	ITS 31 1322SAT-018
															Room - 2/6/07	ITS 3112980SAT-001
F	MPE/Bubble/Bubble/MPE	Metal framework (2"wide x 2" thick) constructed w/ crossties at 8 ft. Air Gap Behind RI	0	10	Metal 2x4 studs, 2 ft OC on walls and ceiling. Material appliedirectly to studs, resulting in 3-5/8 inch air behind material gap	Ceiling Only	Yes	No	No	13.5	No	175	35	Yes	E84 - 7/25/06	ITS 3101427SAT-002
															Room - 7/31/06	ITS 3097371SAT-005
F	MPE/White Bubble, Nominal 5/16inch thickness, White bubble to fire	Metal framework (2"wide x 2" thick) constructed w/ crossties at 8 ft. Air Gap Behind RI	0	0	Attached directly to walls with metal studs 2 ft OC then installed over RI	Walls and ceiling	No	No	No	5.5	No	200	61	Yes	E84 - 9/20/06	ITS 3100283SAT-009
															Room - 7/31/06	ITS 3100283SAT-007
F	MPE/Bubble/Bubble/MPE	Metal framework (2"wide x 2" thick) constructed w/ crossties at 8 ft. Air Gap Behind RI	0	0	Attached directly to walls with metal studs 2 ft OC then installed over RI	Walls and ceiling	No	No	No	5	No	240	71	Yes	E84 - 9/20/06	ITS 3100283SAT-008
															Room - 8/7/06	ITS 3101427SAT-001

Analysis: A draft of the standard proposed for reference was not completed and available at the time of the printing of this monograph.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

FS196–07/08
2602, 2612 (New)

Proponent: Jesse J. Beitel, Hughes Associates, Inc., representing American Composites Manufacturers Association

1. Delete without substitution:

SECTION 2602
DEFINITIONS

~~**REINFORCED PLASTIC, GLASS FIBER.** Plastic reinforced with glass fiber having not less than 20 percent of glass fibers by weight.~~

2. Add new definitions as follows:

SECTION 2602
DEFINITIONS

FIBER REINFORCED POLYMER. A polymeric composite material consisting of reinforcement fibers impregnated with a fiber-binding polymer which is then molded and hardened.

FIBERGLASS REINFORCED POLYMER. A polymeric composite material consisting of glass reinforcement fibers impregnated with a fiber-binding polymer which is then molded and hardened.

3. Add new text as follows:

SECTION 2612
FIBER REINFORCED POLYMER AND FIBERGLASS REINFORCED POLYMER

2612.1 General. The provisions of this section shall govern the requirements and uses of fiber reinforced polymer or fiberglass reinforced polymer in and on buildings and structures.

2612.2 Labeling and identification. Packages and containers of fiber reinforced polymer or fiberglass reinforced polymer and their components delivered to the job site shall bear the label of an approved agency showing the manufacturer's name, the product listing, product identification and information sufficient to determine that the end use will comply with the code requirements.

2612.3 Interior finish. Fiber reinforced polymer or fiberglass reinforced polymer used as interior finish shall comply with Chapter 8.

2612.4 Decorative materials and trim. Fiber reinforced polymer or fiberglass reinforced polymer used as decorative materials or trim shall comply with Section 806.

2612.5 Light transmitting materials. Fiber reinforced polymer or fiberglass reinforced polymer used as light transmitting materials shall comply with Sections 2606 through 2611 as required for the specific application.

2612.6 Exterior use. Fiber reinforced polymer or fiberglass reinforced polymer shall be permitted to be installed on the exterior walls of buildings of any type of construction when they meet the requirements of Sections 2603.5 and is fire-blocked in accordance with Section 717. The fiber reinforced polymer or the fiberglass reinforced polymer shall be designed for uniform live loads as required in Table 1607.1 as well as for snow loads, wind loads and earthquake loads as specified in Sections 1608, 1609 and 1613 respectively.

Exceptions:

1. When all of the following conditions are met:
   1.1. When the area of the fiber reinforced polymer or the fiberglass reinforced polymer does not exceed 20% of the respective wall area, the fiber reinforced polymer or the fiberglass reinforced polymer shall have a flame-spread index of 25 or less or when the area of the fiber reinforced polymer or the fiberglass reinforced polymer does not exceed 10% of the respective wall area, the

fiber reinforced polymer or the fiberglass reinforced polymer shall have a flame-spread index of 75 or less. The flame-spread index requirement shall not be required for coatings or paints having a thickness of less than 0.036 inch (0.9 mm) that are applied directly to the surface of the fiber reinforced polymer or the fiberglass reinforced polymer

1.2. Fireblocking complying with Section 717.2.6 shall be installed.

1.3. The fiber reinforced polymer or the fiberglass reinforced polymer shall be installed directly to a noncombustible substrate or be separated from the exterior wall by one of the following materials: corrosion-resistant steel having a minimum base metal thickness of 0.016 inch (0.41 mm) at any point, Aluminum having a minimum thickness of 0.019 inch (0.5 mm) or other approved noncombustible material.

1.4. The fiber reinforced polymer or the fiberglass reinforced polymer shall be designed for uniform live loads as required in Table 1607.1 as well as for snow loads, wind loads and earthquake loads as specified in Sections 1608, 1609 and 1613 respectively.

2. When installed on buildings that are 40 feet (12,190 mm) or less above grade, the fiber reinforced polymer or the fiberglass reinforced polymer shall meet the requirements of Section 1406.2 and shall comply with all of the following conditions:

2.1. Where the fire separation distance is 5 feet (1524 mm) or less, the area of the fiber reinforced polymer or the fiberglass reinforced polymer shall not exceed 10% of the wall area Where the fire separation distance is greater than 5 feet (1524 mm) there shall be no limit on the area of the exterior wall coverage using fiber reinforced polymer or the fiberglass reinforced polymer.

2.2. The fiber reinforced polymer or the fiberglass reinforced polymer shall have a flame-spread index of 200 or less. The flame-spread index requirement shall not be required for coatings or paints having a thickness of less than 0.036 inch (0.9 mm) that are applied directly to the surface of the fiber reinforced polymer or the fiberglass reinforced polymer

2.3. Fireblocking complying with Section 717.2.6 shall be installed.

2.4. The fiber reinforced polymer or the fiberglass reinforced polymer shall be designed for uniform live loads as required in Table 1607.1 as well as for snow loads, wind loads and earthquake loads as specified in Sections 1608, 1609 and 1613 respectively.

Reason: The composites industry, material suppliers and manufacturers are working together to introduce FRP composites into the International Building Code. This activity is being conducted under the auspices of the American Composites Manufacturers Association (ACMA), by a collective group of companies focused on the building and construction market. The proposed code change to the IBC in this submittal will help building officials recognize FRP composites and ensure they are being properly used in building construction.

ACMA, headquartered in Arlington, VA is the national trade association representing the composites Industry. ACMA is the world's largest composites trade association, with more than 850 member companies, comprising manufacturers, materials and equipment suppliers, distributors, consultants, academia, end-users and other industry stakeholders. Formed in 1979 to provide education and support for composites fabricators and their suppliers in the successful operation of their businesses, ACMA continues to offer leading-edge services that are instrumental in regulatory compliance and formulation, education, training, market development and expansion.

Fiber reinforced polymer (FRP) composites are materials consisting of reinforcement fibers (natural or man-made) impregnated with a fiber-binding polymer (thermoset or thermoplastic) and are then molded and hardened into the intended shape. The reinforcement fibers (such as boron, glass, carbon, aramid) impart strength and stiffness to the composite, while the polymer resin matrix bind the fibers, providing bulk stiffness and protects them from environmental exposure. Common terms associated with FRP composites include fiberglass or fiber reinforced plastic, GFRP (glass fiber) or CFRP (carbon fiber).

Since the mid-1950s, FRP has been adapted to building and construction uses. In historical sequence, these applications have appeared as opaque and translucent (light transmitting) sheet panels; space frame skin structures; structural forms for concrete; sandwich panel structures; and most recently a variety of highly-configured load-bearing and non-load bearing components. Since the early 1990's, FRP composites are being used to externally strengthen concrete and masonry buildings, as well as providing seismic strengthening to beams, columns, slabs, and walls.

Typical FRP architectural products are manufactured in an open mold. The mold surface, which imparts the finished appearance to the completed part, is first coated with a pigmented, specially formulated, durable polyester coating known as gel coat. Various plies of resin saturated fiber reinforcements are added by a technique known as hand lamination or by using spray equipment. Both processes deposits fibers and catalyzed resin onto the gel coated mold surface. The material is then hand compacted by hand rollers and is usually cured at room temperature.

Additives and various fillers, incorporated in the composites enable fabricators to provide finished products with special properties such as resistance to ultra-violet radiation, enhanced fire performance, corrosion-resistance, and color.

Principal markets served by the composites industry are architectural/construction such as replication of historic building ornamentation, bathware, marine, automotive/transportation, corrosion resistant products (tanks and piping) and many others. These products are increasingly being used as building materials and responsible Code guidance is imperative.

This proposed code change provides two definitions, one a generic definition for Fiber Reinforced Polymer and one for a Fiberglass Reinforced Polymer which is a subset of the generic definition. Both are included since both could be used in the applications under consideration. These definitions are industry standard descriptions for these types of materials.

The proposal also adds a new section to Chapter 26 that is specifically written for FRP. The proposal will require that the FRP be labeled and identified in a manner similar to the existing requirements for foam plastic insulation. This requirement will provide assurance to the Code Official that the product in the field is the same as that tested for compliance.

Proposal Sections 2612.3.through 2612.5 provide requirements wherein the FRP must meet existing Code requirements for materials to be used in these specific applications. No changes in required tests, usage, etc. are made for the FRP versus other materials used for these applications.

Section 2612.6 provides new requirements that specifically address the use of the FRP on the exterior of buildings. This Section would allow the FRP to be used on the exterior of buildings of all Types of Construction when it meets specific requirements.

The general charging requirements are that the FRP meet the requirements of Section 2603.5, the requirements for fireblocking per Section 717 and other structural requirements. Section 2603.5 addresses the use of foam plastics in exterior walls of all Types of Construction. By using the requirements in this Section, the FRP must meet tests such as NFPA 285 (Multi-story fire test), NFPA 268 (Radiant Heat test) and have Class A Flame-spread and Smoke-developed Indices as well as meeting other requirements specified in Section 2603.5. As with foam plastics, if a material can meet these requirements, it can be used as an exterior wall covering on buildings of any Type of Construction.

There are two exceptions to the general requirements. The first is for when the FRP is used as building ornamentation such as cornices. An example of this is provided in the picture below (The cornice is FRP installed on a masonry wall). This set of requirements limits the size of the ornamentation and its Flame-spread Index based on the percentage of the material on the wall. The area restrictions are based potential applications and the philosophy that when larger amounts of materials are installed, the fire properties shall be more restrictive. Requirements are also provided whereby the FRP shall be installed over noncombustible surfaces, fireblocking is required and the design of the installation meets required structural conditions. This set of requirements provides assurances that the materials to be used in this application are appropriate for use and do not create any undue hazard.

The second exception recognizes that the FRP can be used on building up to a height of 40 feet in a manner consistent with other combustible exterior wall coverings. Additionally limits with respect to fire separation distance are also provided in a manner similar to that for MCM panels. Further requirements for fireblocking and structural considerations have also been included.

In summary, this proposal provides recognition of FRP for many building applications and includes appropriate requirements to allow their use in a manner intended by the Code.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS197–07/08

IBC [F] 903.5, IBC Chapter 35 (New)

Proponent: Jeff Hugo, National Fire Sprinkler Association

THIS PROPOSAL IS ON THE AGENDA OF THE IFC CODE DEVELOPMENT COMMITTEE. SEE THE TANTATIVE HEARING ORDER FOR THIS COMMITTEE.

1. Revise as follows:

[F] 903.5 Testing and maintenance. Sprinkler systems shall be tested and maintained in accordance with ~~the *International Fire Code*~~ NFPA 25.

2. Add standard to Chapter 35 as follows:

NFPA

25-07 Inspection, Testing and Maintenance of Water-Based Fire Protection Systems

Reason: This change will allow the building official or the department to be able to enforce NFPA 25 in a direct way, in the cases where no fire official is present in the jurisdiction. While this section directly references the IFC to perform the same duty, this change will allow a more direct route for the building official.

The need for sprinkler maintenance after the installation is imperative. The installation of the sprinkler system initially had allowed for several trade ups and/or building size increase. Along with to insure occupant and fire fighter safety, along with property savings. While sprinkler systems have a high reliability rate (96% according to NFPA report) the need to maintain this system is no different than any other building system, with the exception of that no other installed system inside the building will give you so many benefits.

According to the USFA/NFPA report, "Four Years Later- A Second Needs Assessment of the U.S. Fire Service":

- There are roughly 1.1 million active firefighters in the US, of which just under three-fourths (73%) are volunteer firefighters. Nearly half the volunteers serve in communities with less than 2,500 population.
- An estimated 128.9 million (44%) are protected by departments that do not provide routine testing of active systems (e.g., fire sprinklers).
- An estimated 67.0 million people (23% of the US resident population in 2005) are protected by fire departments that do not provide plans review.
- An estimated 118.9 million (40%) are protected by departments that do not provide permit approval.
- An estimated 20.3 million people (7%) live in communities where no one conducts fire-code inspections. Two-fifths of this population lives in rural communities, with less than 2,500 population.

While some code officials may balk at this change, the purpose is to make them aware and have the ability to do something in their community about it. If we can assume according to the above data that ¾ of our fire service are volunteers then the chances that they having a fire prevention office are slimmer. In most rural cases, a jurisdiction has at least a building official and a fire department. With this code change a building with sprinklers could be enforced after the C of O by the building official through the IBC; the document where he or she feels the most comfortable.

This change is similar to F105-06/07 that altered 905.6.2 to allow a direct route to NFPA 14 for standpipes.

Bibliography

USFA/NFPA, Four Years Later- A Second Needs Assessment of the U.S. Fire Service , Oct. 2006
NFPA (Rohr, Hall), *U.S. EXPERIENCE WITH SPRINKLERS AND OTHER FIRE EXTINGUISHING EQUIPMENT*, Aug. 2005

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: If this code change is approved the maintenance of the language will be the responsibility of the IFC Committee.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

FS198–07/08
Chapter 35

Proponent: Standards writing organizations as listed below.

Revise as follows:

ACI

American Concrete Institute
P. O. Box 9094
Farmington, MI 48333-9094

216.1— 07 ~~97~~	Standard Method for Determining Fire Resistance of Concrete and Masonry Construction Assemblies

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Standard reference number	Title
C 140—07 ~~05a~~	Test Method Sampling and Testing Concrete Masonry Units and Related Units
C 549— 06 ~~02~~	Specification for Perlite Loose Fill Insulation
C 578—07 ~~04~~	Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
C 636/C636M—06 ~~04~~	Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
C 1186—07 ~~02~~	Specification for Flat Nonasbestos Fiber Cement Sheets
C 1289—07 ~~05a~~	Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
D 43—00(2006) ~~94 (2000)~~	Specification for Coal Tar Primer Used in Roofing, Dampproofing and Waterproofing
D 3462-07 ~~05~~	Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules
D 3679-06a ~~05~~	Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding

E 108—07a ~~05~~	Test Methods for Fire Tests of Roof Coverings
E 84-07 05e01	Test Methods for Surface Burning Characteristics of Building Materials
E 96/E96M-05~~00e01~~	Test Method for Water Vapor Transmission of Materials
E 119-07 ~~00~~	Test Methods for Fire Tests of Building Construction and Materials
E 814—06 ~~02~~	Test Method of Fire Tests of Through-penetration Firestops
F 2090— 01a(2007)	Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms

DASMA

Door and Access Systems Manufacturers Association International
1300 Summer Avenue
Cleveland, OH 44115-2851

Standard reference number	Title
107—98 04 ~~(03)~~	Room Fire Test Standard for Garage Doors Using Foam Plastic Insulation

FM

Factory Mutual
Standards Laboratories Turnpike
1151 Boston-Providence
Norwood, MA 02062

Standard reference number	Title
4880 (2005~~1~~)	American National Standard for Evaluating Insulated Wall or Wall and Roof/Ceiling Assemblies, Plastic Interior Finish Materials, Plastic Exterior Building Panels, Wall/Ceiling Coating Systems, Interior and Exterior Finish Systems

GA

Gypsum Association
810 First Street, NE #510
Washington, DC 20002-4268

Standard reference number	Title
GA 600— 06 ~~03~~	Fire-Resistance Design Manual, 18 ~~17~~th Edition

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02269-9101

Standard reference number	Title
~~80—07 99~~	Fire Doors and Fire Windows
~~105—07 03~~	Standard for the Installation of Smoke Door Assemblies
~~257- 07 00~~	Standard on Fire Test for Window and Glass Block Assemblies
~~265—07 02~~	Method of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings on Full Height Panels and Walls
~~268—07 01~~	Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source
~~288-07 01~~	Standard Methods of Fire Tests of Floor Fire Door Assemblies Installed Horizontally in Fire-Resistance-Rated Floor Systems

UL	Underwriters Laboratories 333 Pfingsten Road Northbrook, IL 60062
Standard reference number	Title
14C—2006 ~~99~~	Swinging Hardware for Standard Tin Clad Fire Doors Mounted Singly and in Pairs
103—01	Factory-built Chimneys, for Residential Type and Building Heating Appliances with Revisions through ~~December 2005~~ June 2006
127—96	Factory-built Fireplaces—with Revisions through November 2006 ~~1999~~
~~555—~~ 2006 ~~99~~	Fire Dampers
555C—2006 ~~96~~	Ceiling Dampers
~~555S—~~ 99	Smoke Dampers—with Revisions through ~~April 2003~~ July 2006
710B—2004	Recirculating Systems with Revisions through April 2006
790—04 ~~98~~	Standard Test~~s~~ Methods for Fire Tests ~~Resistance~~ of Roof Coverings ~~Materials~~
1256—02	Fire Test of Roof Deck Construction – with Revisions through January 2007
1479—03	Fire Tests of Through-Penetration Fire stops—with Revisions through April 2007

Reason: The *CP 28 Code Development Policy,* Section 4.5* requires the updating of referenced standards to be accomplished administratively, and be processed as a Code Change Proposal. In May 2007, a letter was sent to each developer of standards that is referenced in the International Codes, asking them to provide ICC with a list of their standards in order to update to the current edition. Above is the received list of the referenced standards that are under the maintenance responsibility of the IBC Fire Safety Committee.

***4.5 Updating Standards:** The updating of standards referenced by the Codes shall be accomplished administratively by the appropriate code development committee in accordance with these full procedures except that multiple standards to be updated may be included in a single proposal.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF