

**TABLE 803.8  
FLAMMABILITY TESTING OF INTERIOR WALL AND CEILING FINISH MATERIALS**

Material	Test Method	Acceptance Criterion	Application Requirement	Section
Interior wall and ceiling finish materials, except as shown below in this table				
	ASTM E 84	Class A, in accordance with 803.1	Table 803.5	803.1
	ASTM E 84	Class B, in accordance with 803.1	Table 803.5	803.1
	ASTM E 84	Class C, in accordance with 803.1	Table 803.5	803.1
	NFPA 286	In accordance with 803.2.1	Permitted where Class A, B, or C is required by Table 803.5	803.5
Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls or ceilings				
	No testing required			801.1.1
Exposed portions of structural members complying with the requirements for buildings of Type IV construction in 602.4				
	No testing required			801.1.1
Foam plastics (exposed foam plastics and foam plastics used in conjunction with a textile or vinyl facing or cover)				
	NFPA 286	In accordance with 803.2.1	Permitted where Class A, B, or C is required by Table 803.5	801.2 & 2603.9
	FM 4880*	Pass	Table 803.5	801.2 & 2603.9
	UL 1040*	Pass	Table 803.5	801.2 & 2603.9
	UL 1715*	Pass	Table 803.5	801.2 & 2603.9
	* ASTM E 84, Class A, B or C in accordance with 803.1, is also required for use where permitted by Table 803.5			
Textile wall coverings				
	NFPA 286	In accordance with 803.2.1	Permitted where Class A, B, or C is required by Table 803.5	803.6.3
	NFPA 265 Method B	In accordance with 803.6.2.1	Permitted where Class A, B, or C is required by Table 803.5	803.6.2
	ASTM E 84	Class A, in accordance with 803.1	Permitted where Class A, B, or C is required by Table 803.5, but also requires sprinklers per 903.3.1.1 or 903.3.1.2	803.6.1
Textile ceiling coverings				
	NFPA 286	In accordance with 803.2.1	Permitted where Class A, B, or C is required by Table 803.5	803.6.3
	ASTM E 84	Class A, in accordance with 803.1	Permitted where Class A, B, or C is required by Table 803.5, but also requires sprinklers per 903.3.1.1 or 903.3.1.2	803.6.1
Expanded vinyl wall coverings				
	NFPA 286	In accordance with 803.2.1	Permitted where Class A, B, or C is required by Table 803.5	803.7
	NFPA 265 Method B	In accordance with 803.6.2.1	Permitted where Class A, B, or C is required by Table 803.5	803.7
	ASTM E 84	Class A, in accordance with 803.1	Permitted where Class A, B, or C is required by Table 803.5, but also requires sprinklers per 903.3.1.1 or 903.3.1.2	803.7
Expanded vinyl ceiling coverings				
	NFPA 286	In accordance with 803.2.1	Permitted where Class A, B, or C is required by Table 803.5	803.7
	ASTM E 84	Class A, in accordance with 803.1	Permitted where Class A, B, or C is required by Table 803.5, but also requires sprinklers per 903.3.1.1 or 903.3.1.2	803.7
Wood used for ornamental purposes, trusses, paneling, or chancel furnishing in Group A-3 places of religious worship				
	No testing required			Table 803.5

(Renumber existing Sections 803.8 and 803.9 accordingly)

**Reason:** The text of Chapter 8 contains requirements for various wall and ceiling finish materials, and they are not always immediately apparent. The new table will show the requirements in an easy to see way for the following materials: base requirements, very thin materials, structural members, foam plastic insulation, textile wall coverings, textile ceiling coverings, expanded vinyl wall coverings and expanded vinyl ceiling coverings, as well as wood used for ornamental purposes in places of religious worship. This proposal does not change any requirements.

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

**Analysis:** This proposal is based upon the current layout of Chapter 8. It is a similar proposal to that of a code change by this proponent which is based on a revised chapter layout. Therefore, code changes FS161-06/07 and FS162-06/07 should not both be approved. The action taken on code change FS2-06/07 will determine whether the format of FS161-06/07 or FS162-06/07 is appropriate. This proposal FS161-06/07 should not be approved if FS160-06/07 is approved.

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

## FS162-06/07

### 803.9.1 (New), Table 803.9.1 (New)

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

**Add new text and table as follows:**

**803.9.1 Test methods.** Table 803.9.1 shows the fire test methods and classification criteria that apply to different interior wall and ceiling finish materials.

**TABLE 803.9.1  
 FLAMMABILITY TESTING OF INTERIOR WALL AND CEILING FINISH MATERIALS**

<b>MATERIAL</b>	<b>TEST METHOD</b>	<b>ACCEPTANCE CRITERION</b>	<b>APPLICATION REQUIREMENT</b>	<b>NEW SECTION</b>
<u>Interior wall and ceiling finish materials, except as shown below in this table</u>				
	ASTM E 84	Class A, in accordance with 803.1.1	Table 803.9	803.1.1
	ASTM E 84	Class B, in accordance with 803.1.1	Table 803.9	803.1.1
	ASTM E 84	Class C, in accordance with 803.1.1	Table 803.9	803.1.1
	NFPA 286	In accordance with 803.1.2.1	Permitted where Class A, B, or C is required by Table 803.9	803.1.2 & 803.9
<u>Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls or ceilings</u>				
	No testing required			803.2
<u>Exposed portions of structural members complying with the requirements for buildings of Type IV construction in 602.4</u>				
	No testing required			803.3
<u>Foam plastics (exposed foam plastics and foam plastics used in conjunction with a textile or vinyl facing or cover)</u>				
	NFPA 286	In accordance with 803.1.2.1	Permitted where Class A, B, or C is required by Table 803.9	803.4 & 2603.9
	FM 4880*	Pass	Table 803.9	803.4 & 2603.9
	UL 1040*	Pass	Table 803.9	803.4 & 2603.9
	UL 1715*	Pass	Table 803.9	803.4 & 2603.9
	* ASTM E 84, Class A, B or C in accordance with 803.1, is also required for use where permitted by Table 803.9			
<u>Textile wall coverings</u>				
	NFPA 286	In accordance with 803.1.2.1	Permitted where Class A, B, or C is required by Table 803.9	803.5 & 803.1.2
	NFPA 265 Method B	In accordance with 803.1.3.1	Permitted where Class A, B, or C is required by Table 803.9	803.5 & 803.1.3
	ASTM E 84	Class A, in accordance with 803.1.1	Permitted where Class A, B, or C is required by Table 803.9, but also requires sprinklers per 903.3.1.1 or 903.3.1.2	803.5 & 803.1.4
<u>Textile ceiling coverings</u>				
	NFPA 286	In accordance with 803.1.2.1	Permitted where Class A, B, or C is required by Table 803.9	803.6 & 803.1.2
	ASTM E 84	Class A, in accordance with 803.1.1	Permitted where Class A, B, or C is required by Table 803.9, but also requires sprinklers per 903.3.1.1 or 903.3.1.2	803.6 & 803.1.4
<u>Expanded vinyl wall coverings</u>				

<b>MATERIAL</b>	<b>TEST METHOD</b>	<b>ACCEPTANCE CRITERION</b>	<b>APPLICATION REQUIREMENT</b>	<b>NEW SECTION</b>
	NFPA 286	In accordance with 803.1.2.1	Permitted where Class A, B, or C is required by Table 803.9	803.7 & 803.1.2
	NFPA 265 Method B	In accordance with 803.1.3.1	Permitted where Class A, B, or C is required by Table 803.9	803.7 & 803.1.3
	ASTM E 84	Class A, in accordance with 803.1.1	Permitted where Class A, B, or C is required by Table 803.9, but also requires sprinklers per 903.3.1.1 or 903.3.1.2	803.7 & 803.1.4
<u>Expanded vinyl ceiling coverings</u>				
	NFPA 286	In accordance with 803.1.2.1	Permitted where Class A, B, or C is required by Table 803.9	803.8 & 803.1.2
	ASTM E 84	Class A, in accordance with 803.1.1	Permitted where Class A, B, or C is required by Table 803.9, but also requires sprinklers per 903.3.1.1 or 903.3.1.2	803.8 & 803.1.4
<u>Interior trim, other than foam plastic</u>				
	ASTM E 84	Class C, in accordance with 803.1.1	Combustible trim, excluding handrails and guardrails, shall not exceed 10% of the aggregate wall or ceiling area in which it is located	806.5
	NFPA 286	In accordance with 803.1.2.1	Permitted where Class A, B, or C is required by Table 803.9	803.1.2 & 803.9
<u>Foam plastic used as interior trim</u>				
	ASTM E 84	Flame Spread Index ≤ 75	1. The minimum density of the interior trim shall be 20 pounds per cubic foot (320 kg/m <sup>3</sup> )	806.3 & 2604.2
			2. The maximum thickness of the interior trim shall be 0.5 inch (12.7 mm) and the maximum width shall be 8 inches (204 mm).	806.3 & 2604.2
			3. The interior trim shall not constitute more than 10% of the aggregate wall and ceiling area of a room or space.	806.3 & 2604.2
	NFPA 286	In accordance with 803.1.2.1	Permitted where Class A, B, or C is required by Table 803.9	803.1.2 & 803.9
<u>Wood used for ornamental purposes, trusses, paneling, or chancel furnishing in Group A-3 places of religious worship</u>				
	No testing required			Table 803.9

**Reason:** This proposal is based on the revised version of section 803, as proposed separately. The section numbers in the table for this proposal are different from the section numbers in the code. The text of Chapter 8, as proposed to be amended, contains requirements for various wall and ceiling finish materials, and they are not always immediately apparent, although the proposed amendment makes them clearer. The new table will show the requirements in an easy to see way for the following materials: base requirements, very thin materials, structural members, foam plastic insulation, textile wall coverings, textile ceiling coverings, expanded vinyl wall coverings and expanded vinyl ceiling coverings, as well as wood used for ornamental purposes in places of religious worship. This proposal does not change any requirements.

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

**Analysis:** This proposal is based upon the revised layout of Chapter 8 which is proposed by code change FS160-06/07. It is a similar proposal from this proponent which is based on the current chapter layout. Therefore, code changes FS161-06/07 and FS162-06/07 should not both be approved. The action taken on code change FS 160-06/07 will determine whether the format of FS161-06/07 or FS162-06/07 is appropriate. This proposal FS162-06/07 should not be approved unless FS160-06/07 is approved.

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

## **FS163-06/07**

### **901.6.2**

**Proponent:** Robert J Davidson, Davidson Code Concepts, Tinton Falls, NJ, representing himself

**Revise as follows:**

**901.6.2 Fire alarm systems.** Fire alarm systems required by the provisions of Section 907.2 of this code and Sections 907.2 and 907.3 of the *International Fire Code* shall be monitored by an approved supervising station in accordance with Section 907.14.

**Exceptions:**

1. Single- and multiple-station smoke alarms required by Section 907.2.10.
2. Smoke detectors in Group I-3 occupancies.
3. Supervisory service is not required for automatic sprinkler systems in one- and two-family dwellings.

**Reason:** Whether the required fire alarm system is being installed in new construction pursuant to Section 907.2 of the IBC and Section 907.2 of the IFC, or is being installed in an existing building or structure pursuant to Section 907.3 of the IFC, the need for alarm system supervision is the same. This proposal adds Section 907.3 of the IFC to the existing language of Section 901.6.2 of the IBC to ensure these required fire alarm systems have the same level of supervisory service.

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

**Analysis:** IFC Section 907.3 addresses where fire alarm and detection systems are required to be installed in existing buildings on a retroactive basis.

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

**FS164-06/07**  
**901.6, 901.6.1, 906.6.2**

**Proponent:** Greg Rogers, Kitsap Fire District 7, representing ICC Joint Fire Service Review Committee

**1. Delete without substitution as follows:**

~~**901.6 Supervisory service.** Where required, fire protection systems shall be monitored by an approved supervising station in accordance with NFPA 72.~~

~~**901.6.1 Automatic sprinkler systems.** Automatic sprinkler systems shall be monitored by an approved supervising station.~~

**Exceptions:**

- ~~1. A supervising station is not required for automatic sprinkler systems protecting one- and two-family dwellings.~~
- ~~2. Limited area systems serving fewer than 20 sprinklers.~~

~~**901.6.2 Fire alarm systems.** Fire alarm systems required by the provisions of Section 907.2 of this code and Section 907.2 of the *International Fire Code* shall be monitored by an approved supervising station in accordance with Section 907.14.~~

**Exceptions:**

- ~~1. Single- and multiple-station smoke alarms required by Section 907.2.10.~~
- ~~2. Smoke detectors in Group I-3 occupancies.~~
- ~~3. Supervisory service is not required for automatic sprinkler systems in one- and two-family dwellings.~~

**2. Add new text as follows:**

**901.6 Supervision and Monitoring.** Fire protection system supervision and monitoring shall be in accordance with the International Fire Code.

**Reason:** Eliminates unnecessary conflicts with the IFC. This level of detail is unnecessary in the IBC.

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

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

**FS165-06/07**

**906.1 (New), Table 906.1 (New), 906.2 (New), 906.3 (New), 906.3(1) (New), 906.3(2) (New), 906.4 (New), 906.5 (New), 906.6 (New), 906.7 (New), 906.8 (New), 906.9 (New), 906.10 (New)**

**Proponent:** Jerry R. Tepe, JRT-AIA Architect, Hopkinton, NH

**Delete and substitute as follows:**

~~**[F] 906.1 General.** Portable fire extinguishers shall be provided in occupancies and locations as required by the *International Fire Code*.~~

**SECTION 906  
PORTABLE FIRE EXTINGUISHERS**

**[F] 906.1 Where required.** Portable fire extinguishers shall be installed in the following locations.

1. In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies.

**Exception:** In new and existing Group A, B and E occupancies equipped throughout with quick response sprinklers, portable fire extinguishers shall be required only in locations specified in Items 2 through 6.

2. Within 30 feet (9144 mm) of commercial cooking equipment.

3. In areas where flammable or combustible liquids are stored, used or dispensed.

4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 1415.1 of the *International Fire Code*.

5. Where required by the *International Fire Code* sections indicated in Table 906.1.

6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.

**[F] TABLE 906.1  
ADDITIONAL REQUIRED PORTABLE FIRE EXTINGUISHERS**

<b>IFC SECTION</b>	<b>SUBJECT</b>
<u>303.5</u>	<u>Asphalt kettles</u>
<u>307.5</u>	<u>Open burning</u>
<u>308.4</u>	<u>Open flames—torches</u>
<u>309.4</u>	<u>Powered industrial trucks</u>
<u>1105.2</u>	<u>Aircraft towing vehicles</u>
<u>1105.3</u>	<u>Aircraft welding apparatus</u>
<u>1105.4</u>	<u>Aircraft fuel-servicing tank vehicles</u>
<u>1105.5</u>	<u>Aircraft hydrant fuel-servicing vehicles</u>
<u>1105.6</u>	<u>Aircraft fuel-dispensing stations</u>
<u>1107.7</u>	<u>Heliports and helistops</u>
<u>1208.4</u>	<u>Dry cleaning plants</u>
<u>1415.1</u>	<u>Buildings under construction or demolition</u>
<u>1417.3</u>	<u>Roofing operations</u>
<u>1504.4.1</u>	<u>Spray-finishing operations</u>
<u>1505.4.2</u>	<u>Dip-tank operations</u>
<u>1506.4.2</u>	<u>Powder-coating areas</u>
<u>1904.2</u>	<u>Lumberyards/woodworking facilities</u>
<u>1908.8</u>	<u>Recycling facilities</u>
<u>1909.5</u>	<u>Exterior lumber storage</u>
<u>2003.5</u>	<u>Organic-coating areas</u>
<u>2106.3</u>	<u>Industrial ovens</u>
<u>2205.5</u>	<u>Motor fuel-dispensing facilities</u>
<u>2210.6.4</u>	<u>Marine motor fuel-dispensing facilities</u>
<u>2211.6</u>	<u>Repair garages</u>
<u>2306.10</u>	<u>Rack storage</u>
<u>2404.12</u>	<u>Tents, canopies and membrane structures</u>
<u>2508.2</u>	<u>Tire rebuilding/storage</u>

<u>IFC SECTION</u>	<u>SUBJECT</u>
<u>2604.2.6</u>	<u>Welding and other hot work</u>
<u>2903.6</u>	<u>Combustible fibers</u>
<u>3308.11</u>	<u>Fireworks</u>
<u>3403.2.1</u>	<u>Flammable and combustible liquids, general</u>
<u>3404.3.3.1</u>	<u>Indoor storage of flammable and combustible liquids</u>
<u>3404.3.7.5.2</u>	<u>Liquid storage rooms for flammable and combustible liquids</u>
<u>3405.4.9</u>	<u>Solvent distillation units</u>
<u>3406.2.7</u>	<u>Farms and construction sites—flammable and combustible liquids storage</u>
<u>3406.4.10.1</u>	<u>Bulk plants and terminals for flammable and combustible liquids</u>
<u>3406.5.4.5</u>	<u>Commercial, industrial, governmental or manufacturing establishments—fuel dispensing</u>
<u>3406.6.4</u>	<u>Tank vehicles for flammable and combustible liquids</u>
<u>3606.5.7</u>	<u>Flammable solids</u>
<u>3808.2</u>	<u>LP-gas</u>

**[F] 906.2 General requirements.** Portable fire extinguishers shall be selected, installed and maintained in accordance with this section and NFPA 10.

**Exceptions:**

1. The travel distance to reach an extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.
2. Thirty-day inspections shall not be required and maintenance shall be allowed to be once every three years for dry-chemical or halogenated agent portable fire extinguishers that are supervised by a listed and approved electronic monitoring device, provided that all of the following conditions are met:
  - 2.1. Electronic monitoring shall confirm that extinguishers are properly positioned, properly charged and unobstructed.
  - 2.2. Loss of power or circuit continuity to the electronic monitoring device shall initiate a trouble signal.
  - 2.3. The extinguishers shall be installed inside of a building or cabinet in a noncorrosive environment.
  - 2.4. Electronic monitoring devices and supervisory circuits shall be tested every three years when extinguisher maintenance is performed.
  - 2.5. A written log of required hydrostatic test dates for extinguishers shall be maintained by the owner to ensure that hydrostatic tests are conducted at the frequency required by NFPA 10.

**[F] 906.3 Size and distribution.** For occupancies that involve primarily Class A fire hazards, the minimum sizes and distribution shall comply with Table 906.3(1). Fire extinguishers for occupancies involving flammable or combustible liquids with depths of less than or equal to 0.25-inch (6.35 mm) shall be selected and placed in accordance with Table 906.3(2). Fire extinguishers for occupancies involving flammable or combustible liquids with a depth of greater than 0.25-inch (6.35 mm) or involving combustible metals shall be selected and placed in accordance with NFPA 10. Extinguishers for Class C fire hazards shall be selected and placed on the basis of the anticipated Class A or Class B hazard.

**[F] TABLE 906.3(1)  
FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS**

	<u>LIGHT (Low) HAZARD OCCUPANCY</u>	<u>ORDINARY (Moderate) HAZARD OCCUPANCY</u>	<u>EXTRA (High) HAZARD OCCUPANCY</u>
<u>Minimum Rated Single Extinguisher</u>	<u>2-A<sup>c</sup></u>	<u>2-A</u>	<u>4-Aa</u>
<u>Maximum Floor Area Per Unit of A</u>	<u>3,000 square feet</u>	<u>1,500 square feet</u>	<u>1,000 square feet</u>
<u>Maximum Floor Area For Extinguisher<sup>d</sup></u>	<u>11,250 square feet</u>	<u>11,250 square feet</u>	<u>11,250 square feet</u>
<u>Maximum Travel Distance to Extinguisher</u>	<u>75 feet</u>	<u>75 feet</u>	<u>75 feet</u>

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929m<sup>2</sup>, 1 gallon = 3.785 L.

- a. Two 2.5-gallon water-type extinguishers shall be deemed the equivalent of one 4-A rated extinguisher.
- b. Annex E.3.3 of NFPA10 provides more details concerning application of the maximum floor area criteria.
- c. Two water-type extinguishers each with a 1-A rating shall be deemed the equivalent of one 2-A rated extinguisher for Light (Low) Hazard Occupancies.

**[F] TABLE 906.3(2)**  
**FLAMMABLE OR COMBUSTIBLE LIQUIDS WITH DEPTHS**  
**OF LESS THAN OR EQUAL TO 0.25-INCH**

<b><u>TYPE OF HAZARD</u></b>	<b><u>BASIC MINIMUM EXTINGUISHER RATING</u></b>	<b><u>MAXIMUM TRAVEL DISTANCE TO EXTINGUISHERS (feet)</u></b>
<u>Light (Low)</u>	<u>5-B</u>	<u>30</u>
	<u>10-B</u>	<u>50</u>
<u>Ordinary (Moderate)</u>	<u>10-B</u>	<u>30</u>
	<u>20-B</u>	<u>50</u>
<u>Extra (High)</u>	<u>40-B</u>	<u>30</u>
	<u>80-B</u>	<u>50</u>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

**NOTE.** For requirements on water-soluble flammable liquids and alternative sizing criteria, see Section 4.3 of NFPA 10.

**[F] 906.4 Cooking grease fires.** Fire extinguishers provided for the protection of cooking grease fires shall be of an approved type compatible with the automatic fire-extinguishing system agent and in accordance with Section 904.11.5 of the *International Fire Code*.

**[F] 906.5 Conspicuous location.** Portable fire extinguishers shall be located in conspicuous locations where they will be readily accessible and immediately available for use. These locations shall be along normal paths of travel, unless the fire code official determines that the hazard posed indicates the need for placement away from normal paths of travel.

**[F] 906.6 Unobstructed and unobscured.** Portable fire extinguishers shall not be obstructed or obscured from view. In rooms or areas in which visual obstruction cannot be completely avoided, means shall be provided to indicate the locations of extinguishers.

**[F] 906.7 Hangers and brackets.** Hand-held portable fire extinguishers, not housed in cabinets, shall be installed on the hangers or brackets supplied. Hangers or brackets shall be securely anchored to the mounting surface in accordance with the manufacturer's installation instructions.

**[F] 906.8 Cabinets.** Cabinets used to house portable fire extinguishers shall not be locked.

**Exceptions:**

1. Where portable fire extinguishers subject to malicious use or damage are provided with a means of ready access.
2. In Group I-3 occupancies and in mental health areas in Group I-2 occupancies, access to portable fire extinguishers shall be permitted to be locked or to be located in staff locations provided the staff has keys.

**[F] 906.9 Height above floor.** Portable fire extinguishers having a gross weight not exceeding 40 pounds (18 kg) shall be installed so that its top is not more than 5 feet (1524 mm) above the floor. Hand-held portable fire extinguishers having a gross weight exceeding 40 pounds (18 kg) shall be installed so that its top is not more than 3.5 feet (1067 mm) above the floor. The clearance between the floor and the bottom of installed hand-held extinguishers shall not be less than 4 inches (102 mm).

**[F] 906.10 Wheeled units.** Wheeled fire extinguishers shall be conspicuously located in a designated location.

**Reason:** To ensure a method of requiring portable fire extinguishers. The *International Building Code* already includes verbatim the text from the *International Fire Code* for sprinkler systems, standpipes, fire alarm systems, etc. Portable fire extinguishers seem to be the only exception. Some jurisdictions do not adopt the *International Fire Code* and cannot get to other codes by reference. Without this change there is no method to require portable fire extinguishers in those jurisdictions without amending the *International Building Code* locally. If it has been deemed necessary to include the other systems, portable fire extinguishers should also be included. There is no intent to make any technical changes with this proposal and code development would remain with the Fire Code Committee.

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

**Analysis:** The maintenance of the technical content of Section 906 rests with the IFC Code Development Committee. The need for and suitability of duplicating the entire text of the IFC Section 906 into the IBC is a matter to be determined by the IBC-Fire Safety Code Development Committee. Note that this proposal does not include any technical modifications to the content of IFC Section 906.

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

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## FS166-06/07

### 913 (New)

**Proponent:** Robert J Davidson, Davidson Code Concepts, representing himself

#### 1. Add new text as follows:

#### SECTION 913 FIRE PUMPS

**913.1 General.** Where provided, fire pumps shall be installed in accordance with this section and NFPA 20.

**913.2 Protection against interruption of service.** The fire pump, driver, and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.

**913.3 Temperature of pump room.** Suitable means shall be provided for maintaining the temperature of a pump room or pump house, where required, above 40°F (5°C).

**913.3.1 Engine manufacturer's recommendation.** Temperature of the pump room, pump house or area where engines are installed shall never be less than the minimum recommended by the engine manufacturer. The engine manufacturer's recommendations for oil heaters shall be followed.

**913.4 Valve supervision.** Where provided, the fire pump suction, discharge and bypass valves, and the isolation valves on the backflow prevention device or assembly shall be supervised open by one of the following methods.

1. Central-station, proprietary, or remote-station signaling service.
2. Local signaling service that will cause the sounding of an audible signal at a constantly attended location.
3. Locking valves open.
4. Sealing of valves and approved weekly recorded inspection where valves are located within fenced enclosures under the control of the owner.

**913.4.1 Test outlet valve supervision.** Fire pump test outlet valves shall be supervised in the closed position.

**913.5. Acceptance test.** Acceptance testing shall be done in accordance with the requirements of NFPA 20.

#### 2. Add standard to Chapter 35 as follows:

#### NFPA

20-03 Installation of Stationary Pumps for Fire Protection

**Reason:** This proposal provides correlation between the *International Building Code* and the *International Fire Code* by copying existing language from the IFC into the IBC.

Since the standards for the installation of the water based fire protection systems are already in the IBC, the requirements for fire pumps currently in the IFC should also be located in the IBC for ease of use when the installation of fire pumps is required.

This addition to the IBC will also solve a problem that is occurring in jurisdictions that adopt the IBC as the only construction document and adopt the IFC or another code as a maintenance document. In some cases the plan reviewers and inspectors performing the construction related duties are not referring to the requirements found in the IFC at the time of construction.

Recognizing the multitude of different ways that the IBC, the IFC, or both are adopted and enforced, these codes must work either together or separately to accomplish the desired result.

This effort was initiated by an action item from ICC's Federal Agency Codes and Standards Forum. There is a need for this in jurisdictions without the IFC, and this change will streamline the design process in jurisdictions where both codes were in effect.

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

**Analysis:** The maintenance of the technical contents of IFC Section 913 (source of this proposal) rests with the IFC Code Development Committee. The need for and suitability of duplicating the text of these sections into the IBC is a matter to be determined by the IBC-Fire Safety Code Development Committee. Note that this proposed code change does not include any technical modifications to the content of IFC Section 913 but that the testing and maintenance issues are not being brought into the IBC. This proposal does not include the following items from the IFC: the testing and maintenance issues of IFC 913.5; the testing of generator sets in IFC 913.5.2; the testing of transfer switches in IFC 913.5.3 and the pump room environmental conditions of IFC 913.5.4. Results of the review of the proposed standard(s) will be posted on the ICC website by August 20, 2006.



## FS167-06/07 914 (New), Chapter 45

**Proponent:** Robert J Davidson, Davidson Code Concepts, representing himself

### 1. Add new text as follows:

#### **SECTION 914** **FIRE PROTECTION WATER SUPPLIES**

**914.1 Required water supply.** An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

**914.1.2 Construction documents.** Construction documents and hydraulic calculations for proposed fire hydrant systems shall be submitted to the fire department for review and approval prior to construction.

**914.1.3 Timing of installation.** When a water supply for fire protection is required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except when approved alternative methods of protection are provided.

**914.2 Type of water supply.** A water supply shall consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow.

**914.2.1 Private fire service mains.** Private fire service mains and appurtenances shall be installed in accordance with NFPA 24.

**914.2.2 Water tanks.** Water tanks for private fire protection shall be installed in accordance with NFPA 22.

**914.3 Fire flow.** Fire flow requirements for buildings or portions of buildings and facilities shall be determined by an approved method.

**914.4 Water supply test.** The fire code official shall be notified prior to the water supply test. Water supply tests shall be witnessed by the fire code official or approved documentation of the test shall be provided to the fire code official prior to final approval of the water supply system.

**914.5 Fire hydrant systems.** Fire hydrant systems shall comply with Sections 914.5.1 through 914.5.6.

**914.5.1 Where required.** Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.

#### **Exceptions:**

1. For Group R-3 and Group U occupancies, the distance requirement shall be 600 feet (183 m).
2. For buildings equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the distance requirement shall be 600 feet (183 m).

**914.5.2 Physical protection.** Where fire hydrants are subject to impact by a motor vehicle, guard posts or other approved means shall comply with Section 312 of the International Fire Code.

### 2. Add new standard to Chapter 35 as follows:

#### **NFPA**

22-03 Water Tanks for Private Fire Protection

24-04 Installation of Private Fire Service Mains and their Appurtenances

**Reason:** This proposal provides correlation between the *International Building Code* and the *International Fire Code* by copying existing language from the IFC into the IBC. References to the fire code official were maintained to designate the appropriate authority for these code requirements, recognizing that individual jurisdictions do modify the designation based upon their particular regulatory process.

Since the standards for the installation of the water based fire protection systems are already in the IBC, the requirements for the water supply to the systems currently in the IFC should also be located in the IBC for ease of use. In addition, fire hydrants are installed as part of new construction and the requirements for their installation belong in the IBC for application at that time.

The proposal addresses the issue of timing of installation by incorporating existing language found at 501.4 of the IFC.

This addition to the IBC will also solve a problem that is occurring in jurisdictions that adopt the IBC as the only construction document and adopt the IFC or another code as a maintenance document. In some cases the plan reviewers and inspectors performing the construction related

duties are not referring to the requirements found in the IFC at the time of construction. This is exacerbated by these particular sections being located in Chapter 5 of the IFC as compared to Chapter 9 where most experienced construction code officials would look for them.

Recognizing the multitude of different ways that the IBC, the IFC, or both are adopted and enforced, these codes must work either together or separately to accomplish the desired result.

This effort was initiated by an action item from ICC's Federal Agency Codes and Standards Forum. There is a need for this in jurisdictions without the IFC, and this change will streamline the design process in jurisdictions where both codes were in effect.

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

**Analysis:** The maintenance of the technical contents of IFC Sections 501 and 508 (source of this proposal) rests with the IFC Code Development Committee. The need for and suitability of duplicating the text of these sections into the IBC is a matter to be determined by the IBC-Fire Safety Code Development Committee. Note that this proposed code change does not include any technical modifications to the content of IFC Sections 501 and 508 but that the inspection, testing and maintenance issues are not being brought into the IBC. This proposal does not include the following items from the IFC: only portions of IFC 501.3 and 501.4 have been included in Section 914.1.2 and 914.1.3 of this proposal; the inspection, testing and maintenance issues of IFC 508.5.2 are not included; the private fire service mains and water tanks of IFC 508.5.3 are not included; the obstruction provisions of IFC 508.5.4 are not included and the clear space around hydrants of IFC 508.5.5 is not included. There is a request by this proponent to place some of this language (Section 914.1.3) in Chapter 33. The action of this proposal and that in Chapter 33 should be coordinated so that the requirements are not placed in two locations of the code. Results of the review of the proposed standard(s) will be posted on the ICC website by August 20, 2006.

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

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## FS168-06/07

### 915 (New)

**Proponent:** Robert J Davidson, Davidson Code Concepts, Tinton Falls, NJ, representing himself

**Add new text as follows:**

#### **SECTION 915** **EMERGENCY RESPONDER SAFETY FEATURES**

**915.1 Shaftway markings.** Vertical shafts shall be identified as required by this section.

**915.1.1 Exterior access to shaftways.** Outside openings accessible to the fire department and which open directly on a hoistway or shaftway communicating between two or more floors in a building shall be plainly marked with the word SHAFTWAY in red letters at least 6 inches (152 mm) high on a white background. Such warning signs shall be placed so as to be readily discernible from the outside of the building.

**915.1.2 Interior access to shaftways.** Door or window openings to a hoistway or shaftway from the interior of the building shall be plainly marked with the word SHAFTWAY in red letters at least 6 inches (152 mm) high on a white background. Such warning signs shall be placed so as to be readily discernible.

**Exception:** Marking shall not be required on shaftway openings which are readily discernible as openings onto a shaftway by the construction or arrangement.

**915.2 Pitfalls.** The intentional design or alteration of buildings to disable, injure, maim or kill intruders is prohibited. No person shall install and use firearms, sharp or pointed objects, razor wire, explosives, flammable or combustible liquid containers, or dispensers containing highly toxic, toxic, irritant or other hazardous materials in a manner which may passively or actively disable, injure, maim or kill an emergency responder who forcibly enters a building for the purpose of controlling or extinguishing a fire, rescuing trapped occupants or rendering other emergency assistance

**915.3 Equipment room identification.** Fire protection equipment shall be identified in an approved manner. Rooms containing controls for air-conditioning systems, sprinkler risers and valves, or other fire detection, suppression or control elements shall be identified for the use of the fire department. Approved signs required to identify fire protection equipment and equipment location, shall be constructed of durable materials, permanently installed and readily visible.

**Reason:** This proposal provides correlation between the International Building Code and the International Fire Code by copying existing language from the IFC into the IBC.

The IBC's stated intent in Section 101.3 includes the safety of emergency responders when operating in buildings and structures. Recognizing the multitude of different ways that the IBC, the IFC, or both are adopted and enforced, these codes must work either together or separately to accomplish the desired result. There are a number of construction (brick & mortar) provisions related to emergency responder safety which appear in the IFC but not the IBC. This potentially results in a gap in certain scenarios, especially jurisdictions which adopt the IBC but not the IFC, or where the IFC is enforced by a fire code official outside the building permitting and inspection process.

The labeling of shaft hazards, prohibition of pitfalls and the marking of equipment doors for identification of controls are important at all times and should be addressed by the IBC at the time of construction in addition to be identified and maintained during maintenance inspections under the IFC.

Certainly it is not the intent to build a structure without critical safety features necessary for Emergency responder activities that routinely occur before a maintenance inspection is scheduled at newly constructed buildings and structures.

Recognizing the multitude of different ways that the IBC, the IFC, or both are adopted and enforced, these codes must work either together or separately to accomplish the desired result.

This effort was initiated by an action item from ICC's Federal Agency Codes and Standards Forum. There is a need for this in jurisdictions without the IFC, and this change will streamline the design process in jurisdictions where both codes were in effect.

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

**Analysis:** The maintenance of the technical contents of IFC Sections 507.2, 507.3 and 510.1 (source of this proposal) rests with the IFC Code Development Committee. The need for and suitability of duplicating the text of these sections into the IBC is a matter to be determined by the IBC-Fire Safety Code Development Committee. Note that this proposed code change does not include any technical modifications to the content of IFC Sections 507.2, 507.3 and 510.1.

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

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## **FS169-06/07**

### **916 (New), Chapter 35**

**Proponent:** Robert J Davidson, Davidson Code Concepts, representing himself

#### **1. Add new text as follows:**

### **SECTION 916** **FIRE APPARATUS ACCESS ROADS**

**916.1 Where required.** Fire apparatus access roads shall be provided and maintained in accordance with Sections 916.1.1 through 916.1.3.

**916.1.1 Buildings and facilities.** Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

**Exception:** The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

**916.1.2 Additional access.** The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

**916.1.3 High-piled storage.** Fire department vehicle access to buildings used for high-piled combustible storage shall comply with the applicable provisions of Chapter 23 of the International Fire Code.

**916.2 Specifications.** Fire apparatus access roads shall be installed and arranged in accordance with Sections 916.2.1 through 916.2.7.

**916.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates in accordance with Section 916.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

**916.2.2 Authority.** The fire code official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

**916.2.3 Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

**916.2.4 Turning radius.** The required turning radius of a fire apparatus access road shall be determined by the fire code official.

**916.2.5 Dead ends.** Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus.

**916.2.6 Bridges and elevated surfaces.** Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO Standard Specification for Highway Bridges. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the fire code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs or both shall be installed and maintained when required by the fire code official.

**916.2.7 Grade.** The grade of the fire apparatus access road shall be within the limits established by the fire code official based on the fire department's apparatus.

**916.3 Marking.** Where required by the fire code official, approved signs or other approved notices shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof.

**916.5 Required gates or barricades.** The fire code official is authorized to require the installation and maintenance of gates or other approved barricades across fire apparatus access roads, trails or other accessways, not including public streets, alleys or highways.

**916.5.1 Secured gates and barricades.** When required, gates and barricades shall be secured in an approved manner.

**916.6 Security gates.** The installation of security gates across a fire apparatus access road shall be approved by the fire chief. Where security gates are installed, they shall have an approved means of emergency operation.

## **2. Add new standard to Chapter 35 as follows:**

### **AASHTO**

HB-17—2002 Specification for Highway Bridges, 17th Edition 2002

**Reason:** This proposal provides correlation between the International Building Code and the International Fire Code by copying existing language from the IFC into the IBC. References to the fire code official were maintained to designate the appropriate authority for these code requirements, recognizing that individual jurisdictions do modify the designation based upon their particular regulatory process.

The IBC's stated intent in Section 101.3 includes the safety of emergency responders when operating in buildings and structures. Recognizing the multitude of different ways that the IBC, the IFC, or both are adopted and enforced, these codes must work either together or separately to accomplish the desired result. There are a number of construction (brick & mortar) provisions related to emergency responder safety which appear in the IFC but not the IBC. This potentially results in a gap in certain scenarios, especially jurisdictions which adopt the IBC but not the IFC, or where the IFC is enforced by a fire code official outside the building permitting and inspection process.

The provision of fire apparatus access roads is appropriately addressed at the same time the proposed building or structure is designed and permitted to be constructed. This proposal will reduce the cost of construction by coordinating the installation of the access roads at the time of design instead of after a site has been completed and occupied.

Certainly it is not the intent to build a structure without critical safety features such as access that are necessary for emergency responder activities that routinely occur before a maintenance inspection is scheduled at newly constructed buildings and structures.

Recognizing the multitude of different ways that the IBC, the IFC, or both are adopted and enforced, these codes must work either together or separately to accomplish the desired result.

This effort was initiated by an action item from ICC's Federal Agency Codes and Standards Forum. There is a need for this in jurisdictions without the IFC, and this change will streamline the design process in jurisdictions where both codes were in effect.

**Cost Impact:** The code change proposal will reduce the cost of construction

**Analysis:** The maintenance of the technical contents of IFC Section 503 (source of this proposal) rests with the IFC Code Development Committee. The need for and suitability of duplicating the text of these sections into the IBC is a matter to be determined by the IBC-Fire Safety Code Development Committee. Note that this proposed code change does not include any technical modifications to the content of IFC Section 503 but that the maintenance issues are not being brought into the IBC. This proposal does not include the following items from the IFC: the marking maintenance issues from IFC 503.3; the obstruction of the access roads from IFC 503.4; the trespass and use issue as well as the exception from IFC 503.5.1 and the maintenance issue for security gates from IFC 503.6. Results of the review of the proposed standard(s) will be posted on the ICC website by August 20, 2006.

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

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## **FS170-06/07**

### **1402.1; IRC R202**

**Proponent:** John Mulder, James Hardie Building Products, Inc.

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY AND THE IRC CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

Revise as follows:

## PART I – IBC FIRE SAFETY

**1402.1 General.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

**FIBER\_CEMENT SIDING.** A manufactured, fiber-reinforcing product made with an inorganic hydraulic or calcium silicate binder formed by chemical reaction and reinforced with discrete organic or inorganic nonasbestos fibers, or both. Additives that enhance manufacturing or product performance are permitted. Fiber\_cement siding products have either smooth or textured faces and are intended for exterior wall and related applications.

## PART II – IRC BUILDING/ENERGY

Revise as follows:

### SECTION R202 DEFINITIONS

**FIBER\_CEMENT SIDING.** A manufactured, fiber-reinforcing product made with an inorganic hydraulic or calcium silicate binder formed by chemical reaction and reinforced with discrete organic or inorganic non-asbestos fibers, or both. Additives which enhance manufacturing or product performance are permitted. Fiber\_cement siding products have either smooth or textured faces and are intended for exterior wall and related applications.

**Reason:** The purpose of this proposed code change is to clarify the definition of “fiber-cement” to be consistent with the current National Standard ASTM C 1154-02: “fiber-cement products, n – manufactured thin section composites of hydraulic matrices and discrete non-asbestos fibers.”

The current Code language fails to discriminate between “fiber-cement products” (see published definition above); “fiber-mat reinforced products, n – manufactured thin section composites of hydraulic cementitious matrices and non-asbestos fibers in two-dimensional scrim(s)” (published definition in C 1154-02); and “cement-bonded particle board, n – manufactured flat sheets of hydraulic cementitious matrices and fibrous wood particles” (published definition in C 1154-02). This change will clarify existing confusion in the marketplace by clearly describing the nature of the fiber.

ASTM C 1154-02, Standard Terminology for Non-Asbestos Fiber-Reinforced Cement Products.

**Bibliography:** ASTM International, C 1154-02, Standard Terminology for Non-Asbestos Fiber-Reinforced Cement Products.

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

**Analysis:** A copy of ASTM C 1154-02 was submitted as a supporting document for this proposal but has not been printed here. A copy of ASTM C 1154-02 is available for purchase directly from ASTM International at <http://www.astm.org>.

## 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

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## FS171–06/07

### 1403.2, 1403.2.1 (New)

**Proponent:** Lawrence Brown, CBO, National Association of Home Builders

Revise as follows:

**1403.2 Weather protection.** Exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing, as described in Section 1405.3. The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior veneer, as described in Section 1404.2, and a means for draining water that enters the assembly to the exterior. ~~Protection against condensation in the exterior wall assembly shall be provided in accordance with the *International Energy Conservation Code*.~~

#### Exceptions:

1. A weather-resistant exterior wall envelope shall not be required over concrete or masonry walls designed in accordance with Chapters 19 and 21, respectively.

2. Compliance with the requirements for a means of drainage, and the requirements of Sections 1404.2 and 1405.3, shall not be required for an exterior wall envelope that has been demonstrated through testing to resist wind-driven rain, including joints, penetrations and intersections with dissimilar materials, in accordance with ASTM E 331 under the following conditions:
  - 2.1. Exterior wall envelope test assemblies shall include at least one opening, one control joint, one wall/eave interface and one wall sill. All tested openings and penetrations shall be representative of the intended end-use configuration.
  - 2.2. Exterior wall envelope test assemblies shall be at least 4 feet by 8 feet (1219 mm by 2438 mm) in size.
  - 2.3. Exterior wall envelope assemblies shall be tested at a minimum differential pressure of 6.24 pounds per square foot (psf) (0.297 kN/m<sup>2</sup>).
  - 2.4. Exterior wall envelope assemblies shall be subjected to a minimum test exposure duration of 2 hours.

The exterior wall envelope design shall be considered to resist wind-driven rain where the results of testing indicate that water did not penetrate control joints in the exterior wall envelope, joints at the perimeter of openings or intersections of terminations with dissimilar materials.

**1403.2.1 Condensation.** Protection against condensation in the exterior wall assembly shall be as follows:

All framed walls, floors and ceilings not ventilated to allow moisture to escape shall be provided with an approved vapor retarder having a permeance rating of 1 perm ( $5.7 \times 10^{-11}$  kg/Pa · s · m<sup>2</sup>) or less, when tested in accordance with the desiccant method using Procedure A of ASTM E 96. The vapor retarder shall be installed on the warm-in-winter side of the insulation.

**Exceptions:**

1. Buildings located in Climate Zones 1 through 3 as indicated in Figure 301.1 and Table 301.1 of the International Energy Conservation Code.
2. In construction where moisture or its freezing will not damage the materials.
3. Where other approved means to avoid condensation in unventilated framed wall, floor, roof and ceiling cavities are provided.

**Reason:** The text in the 2003 IBC relating to vapor retarders was deleted by Proposal FS172-04/05. While not in disagreement with the intent of the proposal, that being the IECC provides the appropriate provisions, there is still a need for the IBC to also contain these provisions, extracted from the IECC, for those jurisdiction where the IECC is not adopted. The actual text to be extracted cannot be ascertained at this time due to the Proposal being submitted during this 2006-07 Code Development Cycle. The intent of this proposal is to extract the text relating to protection against condensation in exterior walls that will be contained in the next and all future editions of the IECC.

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

**Analysis:** Copies of and information about code changes from previous code change cycles can be obtained at <http://www.iccsafe.org/cs/codes>.

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

## FS172-06/07

### 1404.10

**Proponent:** John Mulder, James Hardie Building Products, Inc.

**Revise as follows:**

**1404.10 Fiber-cement siding.** Fiber-cement siding shall conform to the requirements of ASTM C 1186, Type A, and shall be so identified on labeling listing an approved quality control agency.

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

Revision of Section 1404.10

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 4.1 and 4.2). Exterior sidings must be suitable for use in exterior applications subject to the direct action of sun, rain or snow. "Type A" should be included in the material description

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.

**Bibliography:**

ASTM C1186-02, Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets.  
 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

**Analysis:** Copies of all items listed in the bibliography were submitted with this proposal but have not been printed here. To view or download copies of ICC-ES (AC90) Acceptance Criteria for Fiber Cement Siding used as Exterior Wall Siding; Certaineed Corporation ES Report ESR-1668; James Hardie Building Products Legacy Report NER-405; or Mexalit Industrial Legacy Report ER-5139 go to <http://www.icc-es.org> and then select either the "Evaluation Reports" or "Criteria/Guideline" links in the left margin. A copy of ASTM C 1186 is available for purchase directly from ASTM International at <http://www.astm.org>.

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

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

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## FS173-06/07

### 1405.3.2

**Proponent:** Charles Clark, Brick Industry Association (BIA), representing Masonry Alliance for Codes and Standards (MACS)

**Revise as follows:**

**1405.3 Flashing.** Flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect it to the exterior. Flashing shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built-in gutters and similar locations where moisture could enter the wall. Flashing with projecting flanges shall be installed on both sides and the ends of copings, under sills and continuously above projecting trim.

**1405.3.1 Exterior wall pockets.** In exterior walls of buildings or structures, wall pockets or crevices in which moisture can accumulate shall be avoided or protected with caps or drips, or other approved means shall be provided to prevent water damage.

**1405.3.2 Masonry.** Flashing and weep holes in anchored veneer shall be located in the first course of masonry above finished ground level above the foundation wall or slab, and other points of support, including structural floors, shelf angles and lintels where anchored veneers are designed in accordance with Section 1405.5.

**Reason:** To clarify the Code. This section has been incorrectly applied to masonry walls with anchored veneer. The intent of the section is to have the flashing and weep holes in the veneer, not in the masonry backup wall. This code change, although minor and editorial, provided the necessary clarification.

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

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

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## FS174-06/07

### 1405.4

**Proponent:** Gene Boecker, Code Consultants, Inc.

**Revise as follows:**

**1405.4 Wood veneers.** Wood veneers on exterior walls of buildings of Type I, II, III and IV construction shall be not less than 1 inch (25 mm) nominal thickness, 0.438-inch (11.1 mm) exterior hardboard siding or 0.375-inch (9.5 mm) exterior-type wood structural panels or particleboard and shall conform to the following:

1. The veneer shall not exceed three stories or 40 feet in height, ~~measured from the above grade plane.~~ Where fire-retardant-treated wood is used, the height shall not exceed four stories or 60 feet.
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.

**Reason:** This proposed change coordinates language and requirements between Section 1406.2.2 and this section for consistency. Also, because this proposal uses both feet and stories, this section has a height representative of that for the added story increase. A companion change to Section 1406.2.2 (FS182-06/07) will add text that coordinates the requirements for wood on exterior walls of buildings, and provides consistent language for both sections. No technical change will result from this code change, but the change is needed to bring consistency and clarity to these requirements.

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

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

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## FS175-06/07

### 1405.5.2

**Proponent:** Charles Clark, Brick Industry Association (BIA), representing Masonry Alliance for Codes and Standards (MACS)

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

**Revise as follows:**

**1405.5.2 Seismic requirements.** Anchored masonry veneer located in Seismic Design Category C, E or F shall conform to the requirements of Section 6.2.2.10 of ACI530/ASCE5/ TMS 402. Anchored masonry veneer located in Seismic Design Category D shall also conform to the requirements for Seismic Design Category E or F of Section 6.2.2.10.3.3 of ACI530/ ASCE5/ TMS 402.

**Reason:** To clarify the intent of the code. To align this section with the requirements of ASCE 7-05 Section 14.4.8.1.

In the last code change cycle, a floor modification and testimony was offered to S130-04/05 regarding the need to provide wire reinforcement in Seismic Design Category (SDC) D and above, and the need to tie this reinforcement to the anchor. The modified language however went beyond this reinforcement requirement. By requiring that all masonry veneer in SDC D conform to the requirements of SDC E or F, the gravity support of masonry veneer at every floor was triggered per 6.2.2.10.3.2 ACI 530/ ASCE 5/ TMS 402. However, it was not the intent of the proponent to modify the gravity support conditions. This code change proposal clarifies the code by aligning it with ASCE 7-05 and implementing the intent of the floor modification to S130-04/05.

**Cost Impact:** The code change proposal will not increase the cost of construction. This code change will help reduce the increased cost of construction that resulted from the unintended consequence of the floor modification of S130-04/05.

**Analysis:** Additional supporting information including *Out-of-Plane Shake-Table Testing of Brick Veneer With and Without Wire Joint Reinforcement*, Prepared by Martin Turek and Dr. Carlos E. Ventura, P.Eng., P.E. at the University of British Columbia; *Effect of Veneer Joint Reinforcement on Brick Tie Embedment* by William McEwen, Ari Wibowo, Perry Adebar and Donald Anderson for the 9<sup>th</sup> Canadian Masonry Symposium; and the *Proceedings of the British Masonry Society – No.9, November 2002* edited by G. Thompson and Published by the Society – Stoke-on-Trent were also submitted with this proposal.

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

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## FS176-06/07

### 1405.5.2

**Proponent:** Martin W. Johnson, ABS Consulting, representing NCSEA Seismic Code Advisory Committee

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

**Revise as follows:**

**1405.5.2 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 ACI530/ASCE5/ TMS 402. Anchored masonry veneer located in Seismic Design Category D shall also conform to the requirements for Seismic Design Category E or F of Section 6.2.2.10.3.3 of ACI530/ ASCE5/ TMS 402.

**Reason:** To clarify the intent of the code.

In the last code change cycle, a floor modification and testimony was offered to S130-04/05 regarding the need to provide wire reinforcement in Seismic Design Category (SDC) D and above, and the need to tie this reinforcement to the anchor. The modified language however went beyond this reinforcement requirement. By requiring that all masonry veneer in SDC D conform to the requirements of SDC E or F, the gravity support of masonry veneer at every floor was triggered per 6.2.2.10.3.2 ACI530/ ASCE5/ TMS 402. Extensive testimony was offered at the Code Change Hearings and at the Public comment Hearings regarding the wire reinforcement and tie requirements, however, no testimony was offered about the gravity support of masonry veneer at every floor. This code change proposal clarifies the code by implementing the intent of the floor modification to S130-04/05.

The proponent shall substantiate the proposed code change based on technical information and substantiation. Substantiation provided which is reviewed in accordance with Section 4.2 and determined as not germane to the technical issues addressed in the proposed code change shall be identified as such. The proponent shall be notified that the proposal is considered an incomplete proposal in accordance with Section 4.3, and the



proposal shall be held until the deficiencies are corrected. The proponent shall have the right to appeal this action in accordance with the policy of the ICC Board. The burden of providing substantiating material lies with the proponent of the code change proposal. A minimum of two copies of all substantiating information shall be submitted.

**Bibliography:** The proponent shall submit a bibliography of any substantiating material submitted with the code change proposal. The bibliography shall be published with the code change and the proponent shall make the substantiating materials available for review at the appropriate ICC office and during the public hearing.

**Cost Impact:** The code change proposal will not increase the cost of construction. This code change will help reduce the increased cost of construction that resulted from the unintended consequence of the floor modification of S130-04/05.

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

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## FS177–06/07

### 1405.5.2

**Proponent:** Charles Clark, Brick Industry Association (BIA)

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

**Revise as follows:**

**1405.5.2 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 ACI530/ASCE5/ TMS 402. ~~Anchored masonry veneer located in Seismic Design Category D shall conform to the requirements for Seismic Design Category E or F.~~

**Reason:** To have masonry veneer comply with the seismic requirements of Section 6.2.2.10 of ACI530/ ASCE5/ TMS 402.

Requiring anchored masonry veneer constructed in Seismic Design Category D to meet the same requirements as if constructed in Seismic Design Category E and F 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," 6<sup>th</sup> *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," 6<sup>th</sup> *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.

Two videos of University of British Columbia Test above.

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

**Analysis:** All of the items listed in the bibliography above were submitted along with this proposal.

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

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## FS178–06/07

### 1405.13

**Proponent:** Matthew Dobson, Vinyl Siding Institute, Washington, D.C.

**Revise as follows:**

**1405.13 Vinyl siding.** Vinyl siding conforming to the requirements of this section and complying with ASTM D 3679 Sections 1404.9 and 1406 shall be permitted on exterior walls of buildings of Type I, II, III, IV and 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.

**Reason :** This code change makes two changes:

1. The first change references the section of the code on material requirements verses the standard and is simply editorial.
2. The second change helps to clarify when vinyl siding can be used and with what type of construction. Like other types of cladding, vinyl siding can be used with all types of construction when it meets the provision of section 1406. This is not clear and the changes to this section will help to clarify this section.

Polyvinyl chloride (PVC or vinyl) materials and products have excellent fire performance properties. Rigid vinyl building products, such as vinyl siding, have the following characteristics.

- Limited combustibility
- Low energy release rate
- High self-ignition temperature
- High limited oxygen index
- Low flame spread index

Rigid vinyl siding has been in use for over 30 years. During this period of use, when structure fires have occurred, the presence of rigid vinyl siding has never been reported as producing an unreasonable fire hazard, or as preventing fire service personnel from effectively fighting the fire. Vinyl siding is an accepted product in fire resistive construction. • Vinyl is one of the few materials meeting the stringent National Fire Protection Association requirements for insulating electrical and data transmission cables including in plenum applications.

The proponent shall clearly state the purpose of the proposed code change (e.g., clarify the Code; revise outdated material; substitute new or revised material for current provision of the Code; add new requirements to the Code; delete current requirements, etc.)

The proponent shall justify changing the current code provisions, stating why the proposal is superior to the current provisions of the Code. Proposals that add or delete requirements shall be supported by a logical explanation which clearly shows why the current Code provisions are inadequate or overly restrictive, specifies the shortcomings of the current Code provisions and explains how such proposals will improve the Code.

The proponent shall substantiate the proposed code change based on technical information and substantiation. Substantiation provided which is reviewed in accordance with Section 4.2 and determined as not germane to the technical issues addressed in the proposed code change shall be identified as such. The proponent shall be notified that the proposal is considered an incomplete proposal in accordance with Section 4.3, and the proposal shall be held until the deficiencies are corrected. The proponent shall have the right to appeal this action in accordance with the policy of the ICC Board. The burden of providing substantiating material lies with the proponent of the code change proposal. A minimum of two copies of all substantiating information shall be submitted. (3.4)

**Bibliography:** The proponent shall submit a bibliography of any substantiating material submitted with the code change proposal. The bibliography shall be published with the code change and the proponent shall make the substantiating materials available for review at the appropriate ICC office and during the public hearing.

**Cost Impact:** The code change proposal will not increase the cost of construction as product is now being manufactured and used which meets these changed provisions.

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

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## FS179–06/07

**1405.13, 1405.13.1, 1405.13.1.1, 1405.13.1.1.1 (New), 1405.13.1.1.2 (New), 1405.13.1.1.3 (New), 1405.13.1.1.4 (New), 1405.13.1.2 (New),**

**Proponent:** Matthew Dobson, Vinyl Siding Institute

### Delete and substitute 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.~~

~~**1405.13.1 Application.** The siding shall be applied over sheathing or materials listed in Section 2304.6. Siding shall be applied to conform with the water resistive barrier requirements in Section 1403. Siding and accessories shall be installed in accordance with approved manufacturer's instructions. Unless otherwise specified in the approved manufacturer's instructions, nails used to fasten the siding and accessories shall have a minimum 0.313-inch (7.9 mm) head diameter and 0.125-inch (3.18 mm) shank diameter. The nails shall be corrosion resistant and shall be long enough to penetrate the studs or nailing strip at least 0.75-inch (19 mm). Where the siding is installed horizontally, the fastener spacing shall not exceed 16 inches (406 mm) horizontally and 12 inches (305 mm) vertically. Where the siding is installed vertically, the fastener spacing shall not exceed 12 inches (305 mm) horizontally and 12 inches (305 mm) vertically.~~

**1405.13 Vinyl siding.** Vinyl siding conforming to the requirements of this section and complying with 1404.9 shall be permitted on exterior walls of buildings of Type V construction.

**1405.13.1 Application.** The siding shall be applied over sheathing or materials listed in Section 2304.6. Siding shall be applied to conform with the weather-resistant barrier requirements in Section 1403. Siding and accessories shall be installed in accordance with approved manufacturer's instructions.

**1405.13.1.1** Unless otherwise specified in the approved manufacturer's instructions or test reports, siding located where the basic wind speed specified in Chapter 16 does not exceed 110 miles per hour (177 km/h) and the building height is less than 30 feet (12 192 mm) in Exposure B shall be installed as follows.

**1405.13.1.1.1** Nails used to fasten the siding and accessories shall have a minimum 0.313-inch (7.9 mm) head diameter and 0.125-inch (3.18 mm) shank diameter.

**1405.13.1.1.2** The nails shall be corrosion resistant and shall be long enough to penetrate the studs or nailing strip at least 0.75 inch (19 mm).

**1405.13.1.1.3** Where the siding is installed horizontally, the fastener spacing shall not exceed 16 inches (406 mm) horizontally and 12 inches (305 mm) vertically.

**1405.13.1.1.4** Where the siding is installed vertically, the fastener spacing shall not exceed 12 inches (305 mm) horizontally and 12 inches (305 mm) vertically.

**1403.13.1.2** Where construction is located in areas where the basic wind speed exceeds 110 miles per hour (161 km/h), or building heights are in excess of 30 feet (12 192 mm), tests or calculations indicating compliance with Chapter 16 shall be submitted.

**Reason:** This change improves several aspects of the code with regard to installation provisions for vinyl siding. The updated installation provisions bring the code in line with the current standards as noted in ASTM D 4756 –"Standard Practice for Installation of Rigid Poly(Vinyl Chloride) (PVC) Siding and Soffit".

1. The fastening type, spacing and penetration requirements were revised.
2. Upon approval by the building official the manufacturer can allow alternative installation methods.

Additionally changes to the manufacturing standard ASTM D3679, which is required by the code, have changed the performance ability of the product. Modifications to the height, base mph rating and structure exposure type are proposed to bring it in line with the current manufacturing standard provisions.

As a result of changes to the equations in ASCE 7 applicable to vinyl siding, the minimum test pressure required for compliance with ASTM D3679 has been changed to correspond to a design pressure derived for a 110mph 3-second gust wind speed in Exposure Category B with a maximum building height of 30 feet. All vinyl siding is required to meet the test pressure corresponding to these conditions. For conditions beyond these standard conditions, additional information, in the form of test reports corresponding to the anticipated conditions, would need to be submitted.

**Cost Impact:** The code change proposal will not increase the cost of construction as product is now being manufactured and used which meets these changed provisions.

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

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## FS180-06/07

### 1405.15

**Proponent:** Rick Curkeet, PE, Intertek Testing Services NA, Inc.

#### Revise as follows:

**1405.15 Fiber-cement siding.** Fiber-cement siding complying with Section 1404.10 shall be permitted on exterior walls of Type I, II, III, IV and V construction for wind pressure resistance or wind speed exposures as indicated in ~~by~~ by the manufacturer's ~~compliance report listing and label~~ and approved installation instructions. Where specified, the siding shall be installed over sheathing or materials listed in Section 2304.6 and shall be installed to conform to the water-resistive barrier requirements in Section 1403. Siding and accessories shall be installed in accordance with approved manufacturer's instructions. Unless otherwise specified in the approved manufacturer's instructions, nails used to fasten the siding to wood studs shall be corrosion-resistant round head smooth shank and shall be long enough to penetrate the studs at least 1 inch (25 mm). For metal framing, all-weather screws shall be used and shall penetrate the metal framing at least three full threads.

**Reason:** The purpose of this proposed Code change is to clarify and define agencies recognized to label and list compliant products for installation in accordance with applicable sections of this Code.

"Compliance Report" is not defined in the Code.

"Label" (IBC Section 1702.1) is defined as: "An identification applied to a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of the approved agency and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency (see Section 1703.5 and "Inspection certificate", "Manufacturer's designation" and "Mark")."

"Listed" (IBC Section 902.1) is defined as: "Equipment, materials or services included in a list published by an organization acceptable to the building official and concerned with evaluation of products or services that maintains periodic inspection of production or listed equipment or materials or periodic evaluation services and whose listing states either that the equipment, material or service meets identified standards or has been tested and found suitable for a specific purpose."

The proposed wording could include, but is not limited to, a "compliance report".

Since there is no definition for "compliance report" in the current IBC. The existing definitions for "label" and "listed" in IBC Sections 1702.1 and 902.1 should be referenced. The existing definitions for "label" and "listed" adequately describe both the intent of and the requirements for an approved agency capable of substantiating the performance of construction as indicated in a manufacturer's approved installation instructions that are also acceptable to the building official. It should not be necessary for a building products manufacturer whose products are already under a third-party "labeling and listing" program (that includes both product type and system testing as well as product and manufacturing facility quality assurance inspections) to also maintain an additional "compliance report" from another vendor. The comprehensive labeling and listing documentation makes a "compliance report" redundant.

#### **Bibliography:**

IBC Section 1702.1, "label"  
IBC Section 902.1, "listed"

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

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

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## **FS181-06/07**

**1405.15.1 (New), 1405.15.2 (New), 1405.17, 1405.17.1 and 1405.17.2, IRC R703.10.1, R703.10.2, Table R703.4**

**Proponent:** John Mulder, James Hardie Building Products, Inc.

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY AND THE IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES. 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 or covered with battens. Panel siding shall be installed with fasteners according to 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, 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 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 1¼ 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**

#### **1. Revise as follows:**

##### **R703.10 Fiber cement siding.**

**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. Panel siding shall be installed with fasteners according to Table R703.4 or approved manufacturer's installation instructions. Horizontal joints shall be flashed with Z flashing and blocked with solid wood framing.

**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 1<sup>1</sup>/<sub>4</sub> inches (32 mm) and lap siding not having tongue-and-groove end joints shall have the ends sealed with caulking, covered with an H-section joint cover, or located over a strip of flashing. Lap siding courses may be installed with the fastener heads exposed or concealed, according to Table R703.4 or approved manufacturers' installation instructions.

**2. Revise table as follows:**

**TABLE R703.4  
WEATHER-RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS**

SIDING MATERIAL	NOMINAL THICKNESS <sup>a</sup> (inches)	JOINT TREATMENT	WATER RESISTIVE BARRIER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS <sup>b,c,d</sup>					
				Wood or wood structural panel sheathing	Fiberboard sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud	Direct to studs	Number or spacing of fasteners
Fiber cement panel siding <sup>f,s</sup>	5/16	Note <del>s</del> <u>r</u>	Yes Note <del>x</del> <u>y</u>	6d <u>common</u> corrosion resistant nail <sup>t,s</sup>	6d <u>common</u> corrosion resistant nail <sup>t,s</sup>	6d <u>common</u> corrosion-resistant nail <sup>t,s</sup>	6d <u>common</u> corrosion-resistant nail <sup>t,y,s,w</sup>	4d <u>common</u> corrosion resistant nail <sup>u,i</sup>	6" o.c. on edges, 12" o.c. on intermed. studs
Fiber cement lap siding <sup>f,y</sup>	5/16	Note <del>v</del> <u>t</u>	Yes Note <del>x</del> <u>y</u>	6d <u>common</u> corrosion resistant nail <sup>t,s</sup>	6d <u>common</u> corrosion resistant nail <sup>t,s</sup>	6d <u>common</u> corrosion resistant nail <sup>t,s</sup>	6d <u>common</u> corrosion resistant nail <sup>t,y,s,w</sup>	6d <u>common</u> corrosion resistant nail <u>or 11 gauge roofing nail<sup>t</sup></u>	Note <del>w</del> <u>u</u>

For SI: 1 inch = 25.4 mm.

- a. Based on stud spacing of 16 inches on center where studs are spaced 24 inches, siding shall be applied to sheathing approved for that spacing.
- b. Nail is a general description and shall be T-head, modified round head, or round head with smooth or deformed shanks.
- c. Staples shall have a minimum crown width of <sup>7</sup>/<sub>16</sub>-inch outside diameter and be manufactured of minimum 16 gage wire.
- d. Nails or staples shall be aluminum, galvanized, or rust-preventative coated and shall be driven into the studs for fiberboard or gypsum backing.
- e. Aluminum nails shall be used to attach aluminum siding.
- f. Aluminum (0.019 inch) shall be unbacked only when the maximum panel width is 10 inches and the maximum flat area is 8 inches. The tolerance for aluminum siding shall be +0.002 inch of the nominal dimension.
- g. All attachments shall be coated with a corrosion-resistant coating.
- h. Shall be of approved type.
- i. Three-eighths-inch plywood shall not be applied directly to studs spaced more than 16 inches on center when long dimension is parallel to studs. Plywood <sup>1</sup>/<sub>2</sub>-inch or thinner shall not be applied directly to studs spaced more than 24 inches on center. The stud spacing shall not exceed the panel span rating provided by the manufacturer unless the panels are installed with the face grain perpendicular to the studs or over sheathing approved for that stud spacing.
- j. Wood board sidings applied vertically shall be nailed to horizontal nailing strips or blocking set 24 inches on center. Nails shall penetrate 1 1/2 inches into studs, studs and wood sheathing combined, or blocking. A weather-resistive membrane shall be installed weatherboard fashion under the vertical siding unless the siding boards are lapped or battens are used.
- k. Hardboard siding shall comply with AHA A135.6.
- l. For masonry veneer, a weather-resistive sheathing paper is not required over a sheathing that performs as a weather-resistive barrier when a 1-inch air space is provided between the veneer and the sheathing. When the 1-inch space is filled with mortar, a weather-resistive sheathing paper is required over studs or sheathing.
- m. Vinyl siding shall comply with ASTM D 3679.
- n. Minimum shank diameter of 0.092 inch, minimum head diameter of 0.225 inch, and nail length must accommodate sheathing and penetrate framing 1 1/2 inches.
- o. When used to resist shear forces, the spacing must be 4 inches at panel edges and 8 inches on interior supports.
- p. Minimum shank diameter of 0.099 inch, minimum head diameter of 0.240 inch, and nail length must accommodate sheathing and penetrate framing 1 1/2 inches.
- q. Vertical end joints shall occur at studs and shall be covered with a joint cover or shall be caulked.
- r. ~~Fiber cement siding shall comply with the requirements of ASTM C 1186.~~
- ~~s. r. See Section R703.10.1.~~
- ~~t. s. Fasteners shall comply with the nominal dimensions in ASTM F1667. Minimum 0.102" smooth shank, 0.255" round head.~~
- ~~u. Minimum 0.099" smooth shank, 0.250" round head.~~
- ~~v. t. See Section R703.10.2.~~
- ~~w. u. Face nailing: 2 nails one 6d common nail through the overlapping planks at each stud. Concealed nailing: one 11 gage 1 1/2 inch long galv. roofing nail through the top edge of each plank at each stud (0.371" head diameter, 0.120" shank) or 6d galv. box nail at each stud.~~
- ~~x. y. See Section R703.2 exceptions.~~
- ~~y. w. Minimum nail length must accommodate sheathing and penetrate framing 1 1/2 inches.~~
- ~~z. x. Adhered masonry veneer shall comply with the requirements in Sections 6.1 and 6.3 of ACI 530/ASCE 5/TMS-402.~~

**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.

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. 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.

ICC-ES Acceptance Criteria (AC-90), Section 3.1 supports the proposal for “Type A” sheets (see also evaluation reports for Certaineed 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 Certaineed 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.

(IRC) 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.

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.

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).

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.

Deletion of footnote “r” in Table R703.4

Fiber-cement is not correctly described in Sections R703.10.2 and R703.10.2

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 Certaineed 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).

ASTM C1186-02, Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets.

ICC-ES (AC90) Acceptance Criteria for Fiber Cement Siding used as Exterior Wall Siding.

Certaineed 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

#### Bibliography:

ICC-ES (AC90) Acceptance Criteria for Fiber Cement Siding used as Exterior Wall Siding.

Certaineed Corporation ES Report ESR-1668

James Hardie Building Products Legacy Report NER-405

Mexalit Industrial Legacy Report ER-5139

Mexalit Industrial flexural strength technical data sheet

ASTM C1186-02, Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets

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

**Analysis:** Copies of all items listed in the bibliography were submitted with this proposal and have not been printed here. To view or download copies of ICC-ES (AC90) Acceptance Criteria for Fiber Cement Siding used as Exterior Wall Siding; Certaineed Corporation ES Report ESR-1668; James Hardie Building Products Legacy Report NER-405; or Mexalit Industrial Legacy Report ER-5139 go to <http://www.icc-es.org> and then select either the "Evaluation Reports" or "Criteria/Guideline" links in the left margin. A copy of ASTM C 1186 is available for purchase directly from ASTM International at <http://www.astm.org>.

## 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

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# FS182–06/07

## 1406.2.2

**Proponent:** Gene Boecker, Code Consultants, Inc.

### Revise as follows:

**1406.2.2 Architectural trim.** In buildings of Type I, II, III and IV construction ~~that do not exceed three stories or 40 feet (12 192 mm) in height above grade plane~~, 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. ~~Architectural trim that exceeds 40 feet (12 192 mm) in height above grade plane shall be constructed of approved noncombustible materials and shall be secured to the wall with metal or other approved noncombustible brackets.~~ Combustible architectural trim shall be limited to three stories or 40 feet (12 192 mm) above grade plane.

## Exceptions:

1. Combustible architectural trim of fire-retardant treated wood shall be permitted up to four stories or 60 feet in height above grade plane.
2. 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.

**Reason:** This proposed change coordinates language and requirements between Section 1405.4 (FS174-06/07) and this section for consistency. A companion change to Section 1405.4 will add text that addresses the height in feet in addition to stories. Because Section 1406.2.2 uses both feet and stories, this section has a height representative of that for the added story increase. The exceptions are extracted from the code text and set out as such for clarity. Because of the limits which have existed in Section 1405.4, no technical change will result from this code change, but the change is needed to bring consistency and clarity to these requirements.

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

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

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## **FS183-06/07** **1407.2.4**

**Proponent:** Rick Thornberry, P.E., The Code Consortium, Inc., representing Alcan Composites USA, Inc

### **Revise as follows:**

**1406.2.4 Fireblocking.** Where the combustible exterior wall covering is furred from the wall and forms a solid surface, the distance between the back of the covering and the wall shall not exceed 1.625 inches (41 mm) ~~and~~ . Where required by Section 717, the space thereby created shall be fireblocked ~~in accordance with Section 717.~~

**Reason:** This is a clarification of the code requirements regarding fireblocking for combustible exterior wall coverings. During the previous code development cycles this section was revised and simplified and the exceptions deleted since the exceptions were already contained in Section 717 Concealed Spaces. They were considered superfluous since Section 717 was referenced in this section that we're proposing to revise. The purpose of this code change is to clearly indicate that the concealed space need only be fireblocked in the combustible exterior wall where Section 717 actually requires it to be so, since there are several cases which are exempt from the requirement based on the exceptions to Section 717.2.6 Architectural Trim. As currently worded, this Section 1406.2.4 could be interpreted to say that regardless of the type of combustible exterior wall covering used, the fireblocking would be required without regard to the exceptions. By restructuring the last part of this section, we believe it makes it much more clear that the concealed space in the combustible exterior wall covering is only required to be fireblocked where specifically required by Section 717. Because 717.2.6 contains exceptions to the fireblocking requirement for concealed spaces of exterior wall finish, then for those conditions fireblocking would not be triggered by Section 1406.2.4. That was certainly the intent of the rewrite of the section during the last set of code development cycles between the 2003 International Building Code (IBC) and the 2006 IBC.

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

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

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## **FS184-06/07** **1407.11, 1407.11.3 (New)**

**Proponent:** Rick Thornberry, P.E., The Code Consortium, Inc., representing Alcan Composites USA, Inc

### **1. Revise as follows:**

**1407.11 Alternate conditions.** MCM and MCM systems shall not be required to comply with Sections 1407.10.1 through 1407.10.4 provided such systems comply with Section 1407.11.1, ~~or~~ 1407.11.2 or 1407.11.3.

### **2. Add new text as follows:**

**1407.11.3 Installations greater than 50 feet in height.** MCM shall be permitted to be installed more than 50 feet (15 240 mm) in height above the grade plane where installed in accordance with one of the following:

1. Section 2607 for light-transmitting plastic wall panels where the MCM is substituted for the wall panels.
2. Section 2608 for light-transmitting plastic glazing where the MCM is substituted for the glazing.

**Reason:** This code change proposal provides for additional alternate conditions under which MCM and MCM systems could be installed on buildings greater than 50 feet in height. Two conditions are allowed which are based on the allowable use of light-transmitting plastics in the exterior walls of buildings in accordance with Section 2607 Light-transmitting Plastic Wall Panels and Section 2608 Light-transmitting Plastic Glazing. These



two sections have been in the International Building Code (IBC) since its inception and were basically contained in all three of the legacy model building codes for many years prior to the development of the IBC. Thus, they have a long history of successful fire performance under the previous legacy codes, as well as under the IBC.

It is our belief that if exposed light-transmitting plastics can be used on the exterior walls of buildings under the provisions indicated in those sections, it is reasonable to expect that MCMs which contain a solid plastic core covered by a metal skin, such as aluminum or steel, should perform as well or better. It should be noted that the MCM meet all the requirements necessary to be an approved plastic which is also the requirement for light-transmitting plastics. And the MCM must meet an even more stringent burning limitation than light-transmitting plastics since MCMs are required to be tested in accordance with ASTM E84 to demonstrate a flame spread index not greater than 75 and a smoke-developed index not greater than 450.

Furthermore, it should be noted that the legacy evaluation services evaluated several manufacturers of ACMs based on meeting the criteria for approved light-transmitting plastics and the applications for both wall panels and glazing under the conditions previously allowed for those plastics by the legacy model codes. Those evaluation reports were based on the same concept that the MCMs would perform as well or better under fire conditions than the light-transmitting plastics allowed to be used in the exterior applications indicated above.

Alcan Composites USA, Inc. has a history of over 20 years of experience installing MCMs to meet those code requirements for light-transmitting plastics. To our knowledge, there has not been a fire involving the installation of their products that has resulted in unacceptable performance when installed in accordance with the code. Therefore, we respectfully request the Committee approve this code change proposal to allow for additional applications of MCMs on buildings greater than 50 feet in height.

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

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

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## FS185-06/07

### 1502.1

**Proponent:** Mark S. Graham, James R. Kirby, National Roofing Contractors Association

#### Add new definition as follows:

**1502.1 General.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

**AGGREGATE:** In roofing, crushed stone, crushed slag or water-worn gravel used for surfacing a built-up roof covering or modified bitumen roof covering.

**Reason:** This proposed code change adds a new definition to the code.

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

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

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## FS186-06/07

### 1502 (New), Chapter 35

**Proponent:** David L. Roodvoets, DLR Consultants, representing Single-ply Roofing Institute, Inc. (SPRI)

#### 1. Add new definition as follows:

**BALLAST:** Ballast is any item having weight that is used to hold or steady an object. In roofing, ballast comes in the form of Large Stones (ASTM D448 #4 or larger) or paver systems or light-weight interlocking paver systems and is used to provide uplift resistance for roofing systems that are not adhered or mechanically attached to the roof deck.

#### 2. Add standard to Chapter 35 as follows:

##### ASTM

D448-03a Standard Classification for Sizes of Aggregate for Road and Bridge Construction

**Reason:** This addition to the code provides a definition that segregates ballast materials used for wind uplift resistance from other aggregates used on roofs.

There is no definition given for ballast in the standard therefore causing confusion for users of the code between the materials used to provide wind uplift on roofs and smaller aggregate that is used on adhered roofing systems to add fire and weather protection.

The term ballasted was adopted by the roofing industry in the 1970's to describe the use of large stones or pavers to provide wind resistance for roofing systems that were not adhered to the deck. These systems have had extensive use for over 25 years, and have had extensive wind tunnel testing and field evaluations, as well as an excellent track record for performance in high winds.

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

**Analysis:** Results of the review of the proposed standard(s) will be posted on the ICC website by August 20, 2006.

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

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## **FS187-06/07**

**1503.4, 1503.4.1 (New), 1503.4.2 (New), 1503.4.3 (New), 1611.1**

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL COMMITTEE.**

**Proponent:** Daniel J. Walker, P.E., Metal Building Manufacturers Association, Inc. (MBMA)

### **1. Revise as follows:**

**[P] 1503.4 Roof drainage.** Design and installation of roof drainage systems shall comply with Section 1503 and the International Plumbing Code.

**1503.4.1 Roof design.** Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drainage means shall be assumed to be blocked.

**1503.4.2 Secondary drainage required.** Secondary (emergency) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason.

**1503.4.3 Scuppers.** When scuppers are used for secondary (emergency overflow) roof drainage, the quantity, size, location and inlet elevation of the scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1503.4.1. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when locating and sizing scuppers.

(Renumber subsequent sections)

### **2. Revise as follows:**

**1611.1 Design rain loads.** Each portion of a roof shall be designed to sustain the load of rainwater that will accumulate on it if the primary drainage system for that portion is blocked plus the uniform load caused by water that rises above the inlet of the secondary drainage system at its design flow. The design rainfall shall be based on the 100-year hourly rainfall rate indicated in Figure 1611.1 or on other rainfall rates determined from approved local weather data.

### **3. Insert figure as shown:**

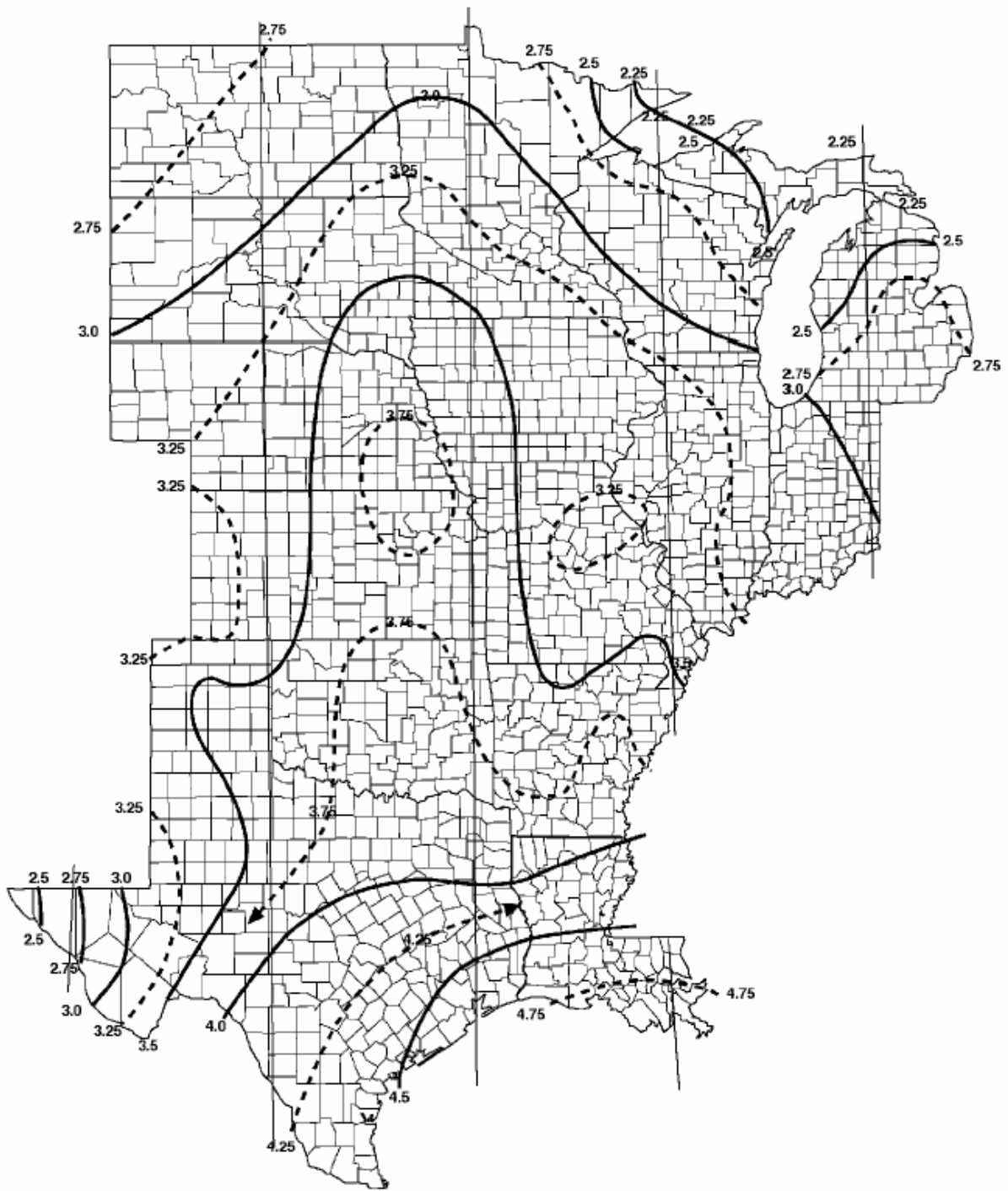
**Insert all of IPC Figure 1106.1 and renumber as shown**



**FIGURE 1611.1 IPC 1106.4  
100-YEAR, 1-HOUR RAINFALL (INCHES) EASTERN UNITED STATES**

For SI: 1 inch = 25.4 mm.

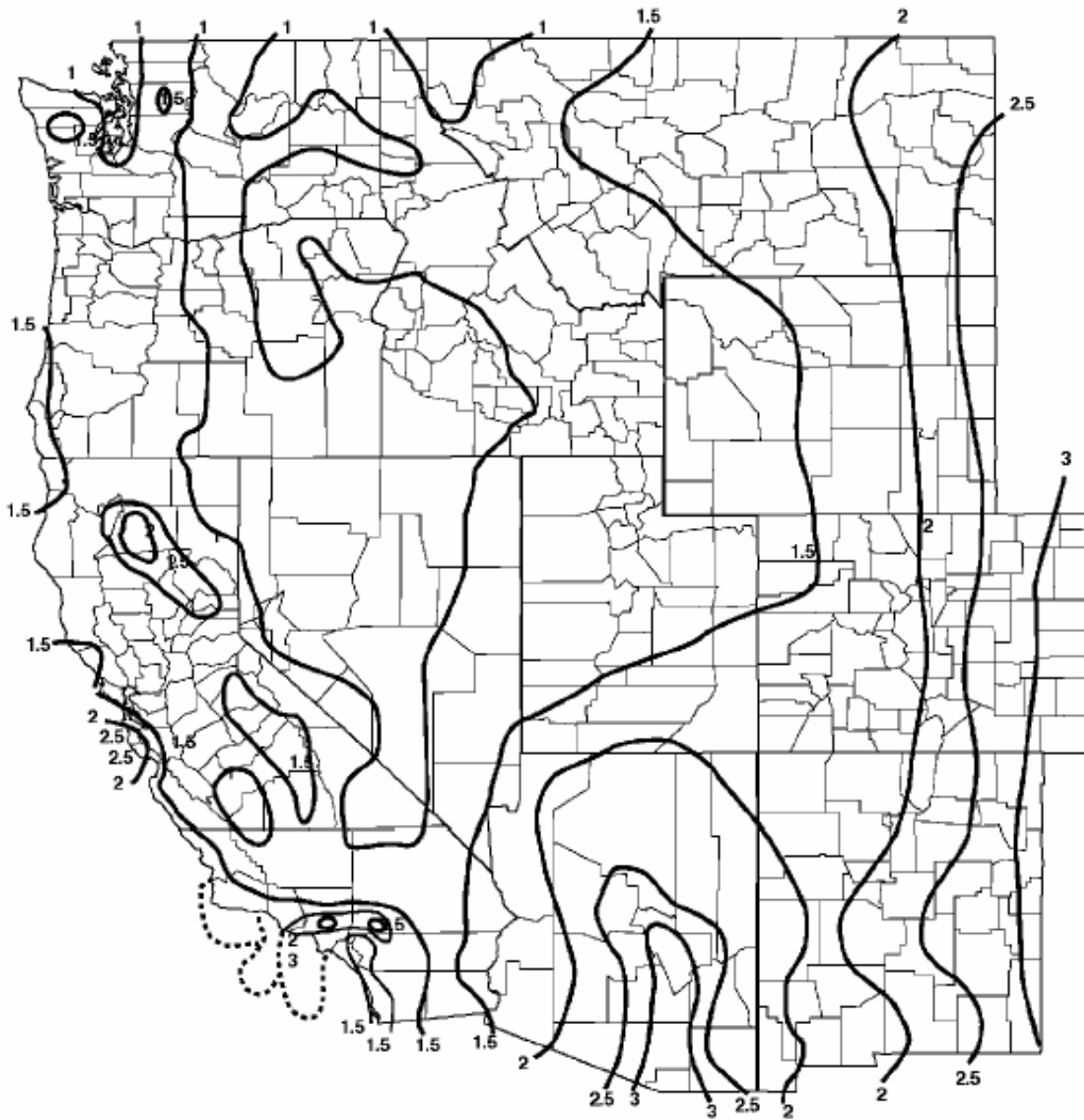
Source: National Weather Service, National Oceanic and Atmospheric Administration, Washington D.C.



**FIGURE 1611.1 IPC1106.1—continued**  
**100-YEAR, 1-HOUR RAINFALL (INCHES) CENTRAL UNITED STATES**

For SI: 1 inch = 25.4 mm.

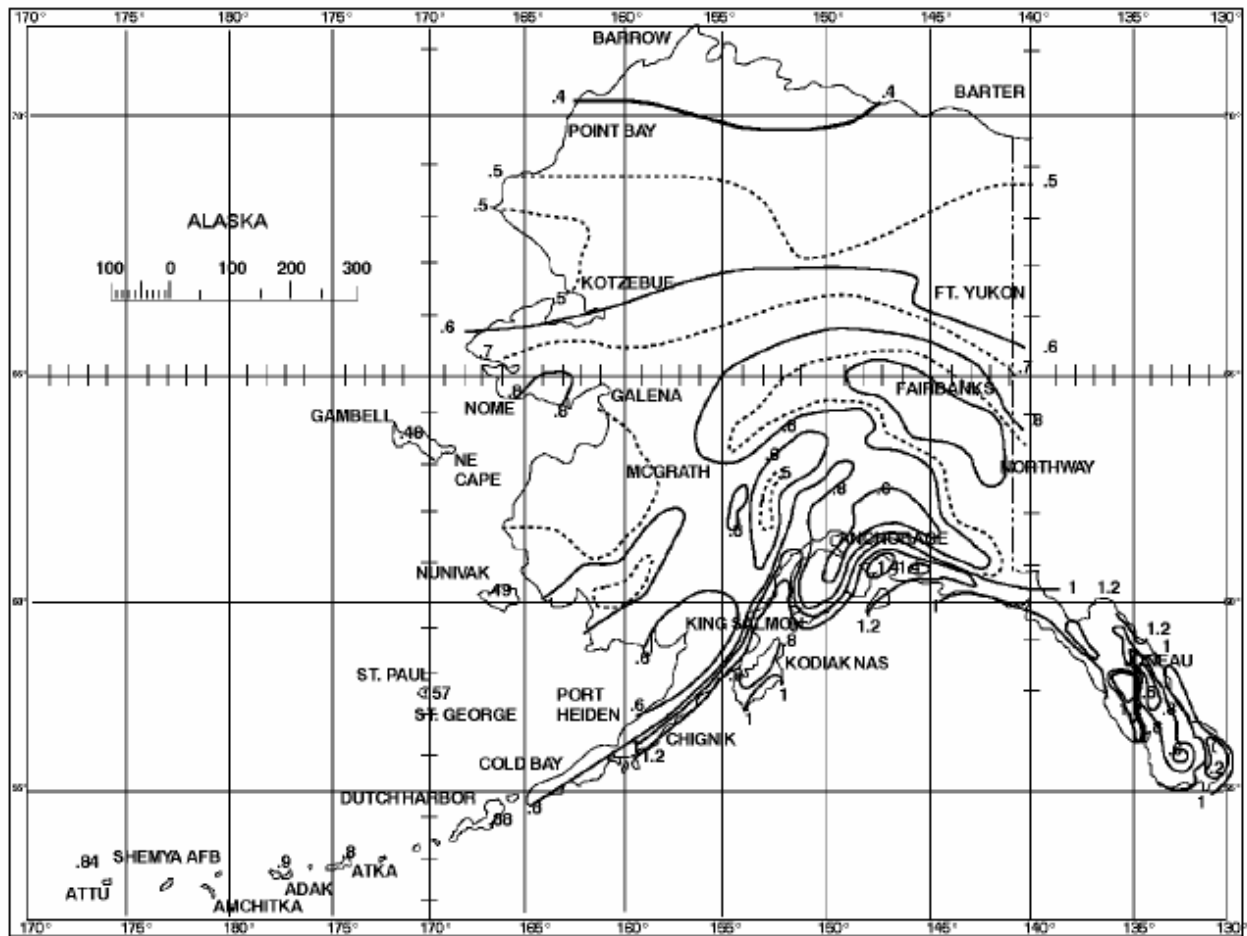
Source: National Weather Service, National Oceanic and Atmospheric Administration, Washington D.C.



**FIGURE 1611.1 IPC1106.1—continued**  
**100-YEAR, 1-HOUR RAINFALL (INCHES) WESTERN UNITED STATES**

For SI: 1 inch = 25.4 mm.

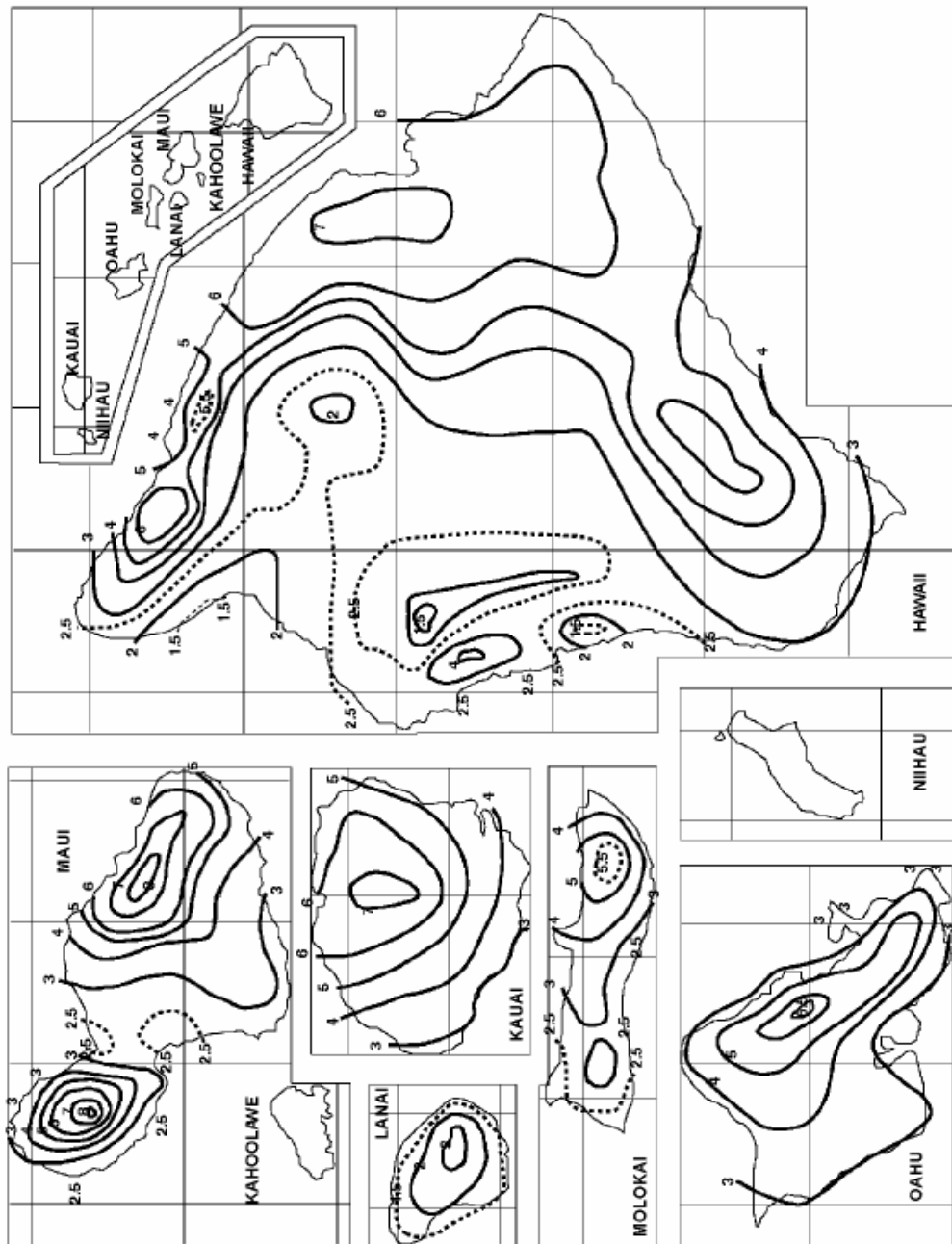
Source: National Weather Service, National Oceanic and Atmospheric Administration, Washington D.C.



**FIGURE 1611.1 IPC1106.1—continued  
100-YEAR, 1-HOUR RAINFALL (INCHES) ALASKA**

For SI: 1 inch = 25.4 mm.

Source: National Weather Service, National Oceanic and Atmospheric Administration, Washington D.C.



**FIGURE 1611.1 IPC1106.1—continued**  
**100-YEAR, 1-HOUR RAINFALL (INCHES) HAWAII**

For SI: 1 inch = 25.4 mm.

Source: National Weather Service, National Oceanic and Atmospheric Administration, Washington D.C.

**Reason:** To make the code more user friendly and to make sure that the structural designer is aware of these design requirements that currently only reside in the IPC.

This code change proposal copies the pertinent roof drainage requirements contained in International Plumbing Code (IPC) Chapter 11 into Chapter 15 of the International Building Code (IBC) to make it more readily available to designers who are responsible for the structural load carrying capacity of roofs. This code change also adds verbiage from the IPC to IBC Section 1611.1 for determining the design rainfall, and copies the rainfall intensity map found in the IPC (Figure 1106.1). Currently this information is only available in the International Plumbing Code.

Section 8.3 of ASCE 7 and IBC Section 1611.1 both state that "Each portion of a roof shall be designed to sustain the load of all rainwater that will accumulate on it if the primary drainage system for that portion is blocked plus the uniform load caused by water that rises above the inlet of the secondary drainage system at its design flow". This code change proposal copies the applicable sections of the IPC into the IBC and puts the information into the hands of those who are responsible for the structural adequacy of the roof for these loads. The design of scuppers as the only secondary roof overflow mechanism is typically the responsibility of the design professional of record, and this information should be copied from the IPC into the IBC to make this information more available. All of the provisions of the IPC will remain, as this proposal suggests only copying the applicable ones into the IBC.

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

**Analysis:** The text proposed for inclusion into Section 1503.4.1 is from IPC Section 1101.7 and is identical to it. The text proposed for Section 1503.4.2 is from IPC 1107.1 and is identical to it. The text proposed for Section 1503.4.3 is from IPC1107.3 with modifications since this proposed section only addresses scuppers. The changes that are being made to IPC 1107.3 for the new IBC Section 1503.4.3 are:

~~IPC 1107.3 Sizing of secondary drains. 1503.4.3 Scuppers. Secondary (emergency) roof drain systems shall be sized in accordance with Section 1106 based on the rainfall rate for which the primary system is sized in Tables 1106.2, 1106.3 and 1106.6. Where scuppers are used for secondary (emergency overflow) roof drainage, the quantity, size, location and inlet elevation of the S scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1101.7. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when locating and sizing the scuppers secondary roof drain system.~~

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

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## FS188-06/07

### 1503.6 (New), 1507.2.9.4; IRC R905.2.8.3, R903.2.2 (New)

**Proponent:** David Fizzell, City of Prescott, Arizona, representing Arizona Building Officials

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC-FIRE SAFETY AND THE IRC-BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

#### PART I – IBC FIRE SAFETY

##### 1. Delete without substitution:

~~**1507.2.9.4 Crickets and saddles.** A cricket or saddle shall be installed on the ridge side of any chimney or penetration greater than 30 inches (762 mm) wide as measured perpendicular to the slope. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering.~~

##### 2. Add new text as follows:

**1503.6 Crickets and saddles.** A cricket or saddle shall be installed on the ridge side of any chimney or penetration greater than 30 inches (762 mm) wide as measured perpendicular to the slope. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering.

#### PART II – IRC-BUILDING/ENERGY

##### 1. Delete without substitution:

~~**R905.2.8.3 Crickets and saddles.** A cricket or saddle shall be installed on the ridge side of any chimney or penetration more than 30 inches (762 mm) wide as measured perpendicular to the slope. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering.~~

##### 2. Add new text as follows:

**R903.2.2 Crickets and saddles.** A cricket or saddle shall be installed on the ridge side of any chimney or penetration greater than 30 inches (762 mm) wide as measured perpendicular to the slope. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering.

**Reason:** Currently this language is located under the requirements for asphalt shingle drip edge. The requirement should not be limited only to asphalt shingle roof coverings. Crickets and saddles are not related to drip edge. These requirements can be applied to all types of roof coverings and need to be located in a section that can be applied to all roofs. An identical code proposal is being presented to the IRC code change committee.

**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



# FS189-06/07

1503.6 (New), Figure 1503.6 (New), 1503.6.1 (New), 1503.6.2 (New), 1510.3

Proponent: T. Eric Stafford, Institute for Business and Home Safety

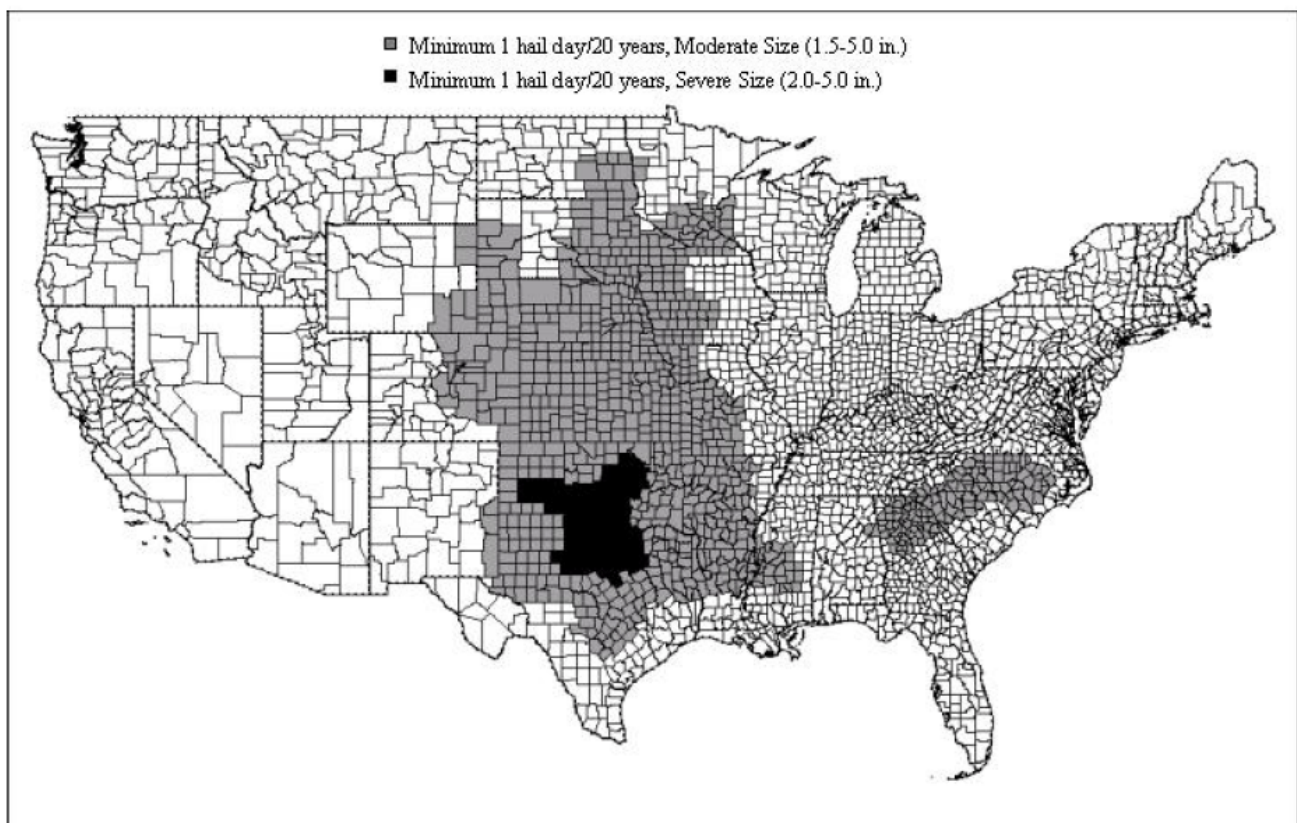
**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

## 1. Add new text and figure as follows:

**1503.6 Hail exposure.** Hail exposure, as specified in Sections 1503.6.1 and 1503.6.2, shall be determined using Figure 1503.6.

**1503.6.1 Moderate hail exposure.** One or more hail days with hail diameters greater than 1.5 in (38 mm) in a twenty (20) year period.

**1503.6.2 Severe hail exposure.** One or more hail days with hail diameters greater than or equal to 2.0 in (50 mm) in a twenty (20) year period.



**FIGURE 1503.6  
HAIL EXPOSURE**

## 2. Revise as follows:

**1510.3 Recovering versus replacement.** New roof coverings shall not be installed without first removing all existing layers of roof coverings where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. For asphalt shingles, when the building is located in an area subject to moderate or severe hail exposure according to Figure 1503.6.

### Exceptions:

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.

2. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with Section 1510.4.
3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.

**Reason:** This code change proposal would make the IBC consistent with the IRC with regard to reroofing with asphalt shingles in areas prone to hail damage. Code change proposal RB202-04/05 was approved as modified as shown in this proposal.

The stiffness of the roof deck plays an important role in hail resistance. Too much flexibility in the system reduces the effectiveness of the systems impact resistance. Recovering over an existing roof system significantly reduces the impact resistance of the roof. Hailstones impacting a roof with two or more layers of asphalt shingles results in a "sponge" effect with the top layer being more susceptible to penetration by the hailstone, thus increasing the potential for water penetration under the roof covering.

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

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

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## FS190-06/07

**1503.6 (New), Figure 1503.6 (New), 1507.2.6 (New), 1507.3.6 (New), 1507.4.4 (New), 1507.5.5 (New), 1507.7.6 (New), 1507.8.7 (New), 1507.9.8 (New), 1510.3, Chapter 35; IRC R905.2.5 (New), R905.3.6 (New), R905.4.6 (New), R905.6.6 (New), R905.7.6 (New), R905.8.8 (New), R905.10.5 (New), R907.3, Chapter 43**

**Proponent:** T. Eric Stafford, Institute for Business and Home Safety, Birmingham, AL

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL AND THE IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

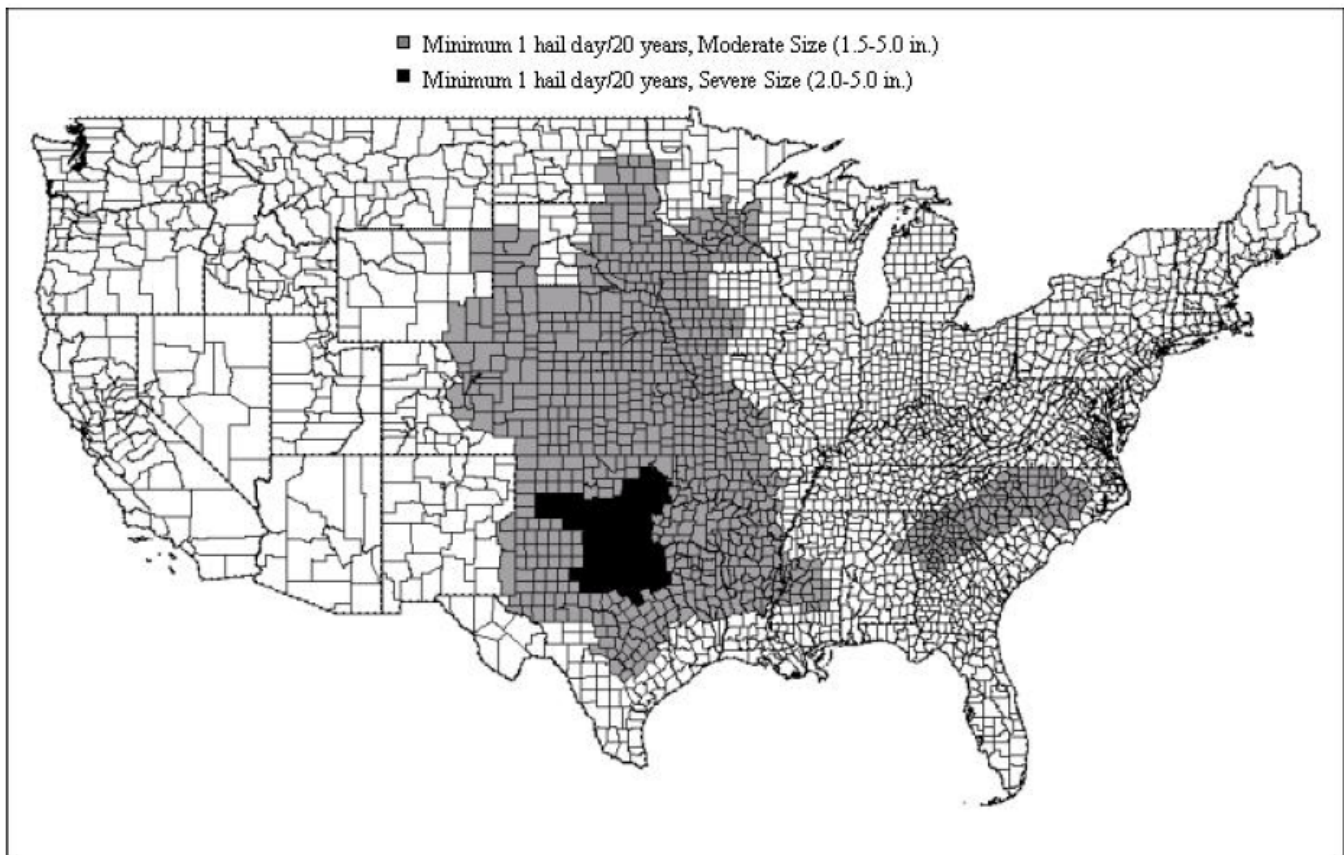
### PART I – IBC STRUCTURAL

#### 1. Add new text as follows:

**1503.6 Hail exposure.** Hail exposure, as specified in Sections 1503.6.1 and 1503.6.2, shall be determined using Figure 1503.6.

**1503.6.1 Moderate hail exposure.** One or more hail days with hail diameters greater than 1.5 in (38 mm) in a twenty (20) year period.

**1503.6.2 Severe hail exposure.** One or more hail days with hail diameters greater than or equal to 2.0 in (50 mm) in a twenty (20) year period.



**FIGURE 1503.6  
HAIL EXPOSURE**

**1507.2.6 Asphalt shingles subject to moderate or severe hail exposure.** Asphalt shingles used in regions where hail exposure is Moderate or Severe, as determined in Section 1503.6, shall comply with Section 1507.2.6.1 or 1507.2.6.2, respectively.

**1507.2.6.1 Moderate hail exposure.** Asphalt shingles used in regions here hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**1507.2.6.2 Severe hail exposure.** Asphalt shingles used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

**1507.3.6 Clay or concrete tile subject to moderate or severe hail exposure.** Clay or concrete tile used on roofs in regions where hail exposure is Moderate or Severe, as determined in Section 1503.6, shall comply with Section 1507.3.6.1 or 1507.3.6.2, respectively.

**1507.3.6.1 Moderate hail exposure.** Clay or concrete tile used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with FM 4473.

**1507.3.6.2 Severe hail exposure.** Clay or concrete tile used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with FM 4473.

**1507.4.4 Metal roof panels subject to Moderate or Severe hail exposure.** Metal roof panels used in regions where hail exposure is Moderate or Severe, as determined in Section 1503.6, shall comply with Section 1507.4.4.1 or 1507.4.4.2, respectively.

**1507.4.4.1 Moderate hail exposure.** Metal roof panels used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**1507.4.4.2 Severe hail exposure.** Metal roof panels used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

**1507.5.5 Metal roof shingles subject to Moderate or Severe hail exposure.** Metal roof shingles used in regions where hail exposure is Moderate or Severe, as determined in Section 1503.6, shall comply with Section 1507.5.5.1 or 1507.5.5.2, respectively.

**1507.5.5.1 Moderate hail exposure.** Metal roof shingles used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**1507.5.5.2 Severe hail exposure.** Metal roof shingles used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

**1507.7.6 Slate shingles subject to Moderate or Severe hail exposure.** Slate shingles used in regions where hail exposure is Moderate or Severe, as determined in Section 1503.6, shall comply with Section 1507.7.6.1 or 1507.7.6.2, respectively.

**1507.7.6.1 Moderate hail exposure.** Slate shingles used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with FM 4473.

**1507.7.6.2 Severe hail exposure.** Slate shingles used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with FM 4473.

**1507.8.7 Wood shingles subject to Moderate or Severe hail exposure.** Wood shingles used in regions where hail exposure is Moderate or Severe, as determined in Section 1503.6, shall comply with Section 1507.8.7.1 or 1507.8.7.2, respectively.

**1507.8.7.1 Moderate hail exposure.** Wood shingles used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**1507.8.7.2 Severe hail exposure.** Wood shingles used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

**1507.9.8 Wood shakes subject to Moderate or Severe hail exposure.** Wood shakes used in regions where hail exposure is Moderate or Severe, as determined in Section 1503.6, shall comply with Section 1507.9.8.1 or 1507.9.8.2, respectively.

**1507.9.8.1 Moderate hail exposure.** Wood shakes used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**1507.9.8.2 Severe hail exposure.** Wood shakes used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

## **2. Revise as follows:**

**1510.3 Recovering versus replacement.** New roof coverings shall not be installed without first removing all existing layers of roof coverings where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, ~~cement concrete~~ or asbestos-~~cement concrete~~ tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. For asphalt shingle roofs, metal roof panels, and metal roof shingles, when the building is located in an area subject to moderate or severe hail exposure according to Figure 1503.6 unless the roof covering has been successfully tested as required in Sections 1507.2.6, 1507.4.4, and 1507.5.5 for installation over an existing roof covering.

### **Exceptions:**

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with Section 1510.4.
3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.

### 3. Add standards to Chapter 35 as follows:

#### UL

2218-02 Standard for Impact Resistance of Prepared Roof Covering Materials

#### FM

4473(2005) Specification Test Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls

### PART II – IRC BUILDING/ENERGY

#### 1. Add new text as follows:

**R905.2.5 Asphalt shingles subject to Moderate or Severe hail exposure.** Asphalt shingles used in regions where hail exposure is Moderate or Severe, as determined in Section R903.5, shall comply with Section R905.2.5.1 or R905.2.5.2, respectively.

**R905.2.5.1 Moderate hail exposure.** Asphalt shingles used in regions here hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**R905.2.5.2 Severe hail exposure.** Asphalt shingles used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

**R905.3.6 Clay or concrete tile subject to Moderate or Severe hail exposure.** Clay or concrete tile used on roofs in regions where hail exposure is Moderate or Severe, as determined in Section R903.5, shall comply with Section R905.3.6.1 or R905.3.6.2, respectively.

**R905.3.6.1 Moderate hail exposure.** Clay or concrete tile used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with FM 4473.

**R905.3.6.2 Severe hail exposure.** Clay or concrete tile used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with FM 4473.

**R905.4.6 Metal roof shingles subject to Moderate or Severe hail exposure.** Metal roof shingles used in regions where hail exposure is Moderate or Severe, as determined in Section R903.5, shall comply with Section R905.4.6.1 or R905.4.6.2, respectively.

**R905.4.6.1 Moderate hail exposure.** Metal roof shingles used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**R905.4.6.2 Severe hail exposure.** Metal roof shingles used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

**R905.6.6 Slate and slate-type shingles subject to Moderate or Severe hail exposure.** Slate and slate-type shingles used in regions where hail exposure is Moderate or Severe, as determined in Section R903.5, shall comply with Section R905.6.6.1 or R905.6.6.2, respectively.

**R905.6.6.1 Moderate hail exposure.** Slate and slate-type shingles used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with FM 4473.

**R905.6.6.2 Severe hail exposure.** Slate and slate-type shingles used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with FM 4473.

**R905.7.6 Wood shingles subject to Moderate or Severe hail exposure.** Wood shingles used in regions where hail exposure is Moderate or Severe, as determined in Section R903.5, shall comply with Section R905.7.6.1 or R905.7.6.2, respectively.

**R905.7.6.1 Moderate hail exposure.** Wood shingles used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**R905.7.6.2 Severe hail exposure.** Wood shingles used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

**R905.8.8 Wood shakes subject to Moderate or Severe hail exposure.** Wood shingles used in regions where hail exposure is Moderate or Severe, as determined in Section R903.5, shall comply with Section R905.8.8.1 or R905.8.8.2, respectively.

**R905.8.8.1 Moderate hail exposure.** Wood shakes used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**R905.8.8.2 Severe hail exposure.** Wood shakes used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

**R905.10.5 Metal roof panels subject to Moderate or Severe hail exposure.** Metal roof panels used in regions where hail exposure is Moderate or Severe, as determined in Section R903.5, shall comply with Section R905.10.5.1 or R905.10.5.2, respectively.

**R905.10.5.1 Moderate hail exposure.** Metal roof panels used in regions where hail exposure is Moderate shall be tested, classified, and labeled as Class 2, Class 3, or Class 4 in accordance with UL 2218.

**R905.10.5.2 Severe hail exposure.** Metal roof panels used in regions where hail exposure is Severe shall be tested, classified, and labeled as Class 4 in accordance with UL 2218.

## 2. Revise as follows:

**R907.3 Re-covering versus replacement.** New roof coverings shall not be installed without first removing existing roof coverings where any of the following conditions occur:

1. Where the existing roof or roof covering is water-soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, ~~concrete cement~~ or asbestos- ~~concrete cement~~ tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. For asphalt shingles, metal roof shingles, and metal roof panels when the building is located in an area subject to moderate or severe hail exposure according to Figure R903.5 unless the roof covering has been successfully tested as required in Sections R905.2.5, R905.4.6, and R905.10.5 for installation over an existing roof covering.

## 3. Add standard to Chapter 43 as follows:

### UL

2218-02 Standard for Impact Resistance of Prepared Roof Covering Materials

### FM

4473(2005) Specification Test Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls

**Reason: (PART I)** Most types of residential roof coverings are especially susceptible to damage from hail. A recent study conducted by the Institute for Business and Home Safety (IBHS) has shown that approximately 44% of all "non-impact resistant" single family residential roofs investigated in the study needed repair or replacement after being struck by hailstones with diameters between 1.0" and 2.0". On a nationwide basis, this amounts to an average annual insured loss of about \$1.6 billion for all roof types combined.

The design life of residential roofing systems can generally be assumed to be at least 20 years. Although the lifespan of an asphalt shingle roof varies with respect to product line and environmental conditions, most are warranted (excluding damage from hail) for 20 years or more. The impact resistance of clay and concrete tile varies widely, but most are susceptible to damage from impacts by hailstones of 1.5" and larger. Most clay and concrete roofing tiles have a life expectancy of 20 years or more.

Another recent study conducted by the Institute for Business and Home Safety (IBHS) has shown that metal roofing is no exception to this rule: Approximately 27% of the "non-impact resistant" metal roofs investigated in the study needed repair or replacement after being struck by hailstones with diameters between 1.0" and 2.0". On a nationwide basis, this amounts to an average annual insured loss of about \$1.6 billion for all roof types combined. The loss rate for "impact resistant" metal roofs, on the other hand, was about 53% lower, at 13%. Although the lifespan of a metal roof varies with respect to product line and environmental conditions, most have life expectancies of 20 years or more.

Throughout large portions of the Great Plains and Southeastern US, hailstorms producing hail with diameters of 1.5" or larger are expected at mean recurrence intervals of 20 years or less. Thus, in such regions, damaging hail is expected within a period of time less than or equal to the lifetime of most residential roofing systems.

The IBC does not currently require the consideration of impact resistance in the selection of roofing materials. Products classified in accordance with UL 2218 have been shown to sustain significantly less damage after being impacted by hailstones with diameters between 1.0 and 2.0 inches. FM 4473, which uses ice balls as an impact medium, allows relative comparisons of impact resistance between rigid roofing materials. In areas of the country where damaging hail is expected within the design life of a roof covering, building codes should mandate that such impact resistant roofing systems be used.

This proposal will increase the cost of construction and reroofing in moderate and severe hail exposure areas. However, it will substantially reduce losses (about 50% reduction) from these events. Based on a recent hail-loss investigation of 320,000 homes in 115 zip codes, with 77,000 claims, the study showed that there were 40% fewer claims and losses were reduced by 55% for homes with impact resistant roofs. Homeowner savings were \$200 to \$300.

The change to Section 1510.3 simply requires that during a reroof, that the existing roof covering be removed unless the impact resistance test show the system can be successfully installed over an existing roof covering.

(PART II) Most types of residential roof coverings are especially susceptible to damage from hail. A recent study conducted by the Institute for Business and Home Safety (IBHS) has shown that approximately 44% of all "non-impact resistant" single family residential roofs investigated in the study needed repair or replacement after being struck by hailstones with diameters between 1.0" and 2.0". On a nationwide basis, this amounts to an average annual insured loss of about \$1.6 billion for all roof types combined.

The design life of residential roofing systems can generally be assumed to be at least 20 years. Although the lifespan of an asphalt shingle roof varies with respect to product line and environmental conditions, most are warranted (excluding damage from hail) for 20 years or more. The impact resistance of clay and concrete tile varies widely, but most are susceptible to damage from impacts by hailstones of 1.5" and larger. Most clay and concrete roofing tiles have a life expectancy of 20 years or more.

Another recent study conducted by the Institute for Business and Home Safety (IBHS) has shown that metal roofing is no exception to this rule: Approximately 27% of the "non-impact resistant" metal roofs investigated in the study needed repair or replacement after being struck by hailstones with diameters between 1.0" and 2.0". On a nationwide basis, this amounts to an average annual insured loss of about \$1.6 billion for all roof types combined. The loss rate for "impact resistant" metal roofs, on the other hand, was about 53% lower, at 13%. Although the lifespan of a metal roof varies with respect to product line and environmental conditions, most have life expectancies of 20 years or more.

Throughout large portions of the Great Plains and Southeastern US, hailstorms producing hail with diameters of 1.5" or larger are expected at mean recurrence intervals of 20 years or less. Thus, in such regions, damaging hail is expected within a period of time less than or equal to the lifetime of most residential roofing systems.

The IRC does not currently require the consideration of impact resistance in the selection of roofing materials. Products classified in accordance with UL 2218 have been shown to sustain significantly less damage after being impacted by hailstones with diameters between 1.0 and 2.0 inches. FM 4473, which uses ice balls as an impact medium, allows relative comparisons of impact resistance between rigid roofing materials. In areas of the country where damaging hail is expected within the design life of a roof covering, building codes should mandate that such impact resistant roofing systems be used.

This proposal will increase the cost of construction and reroofing in moderate and severe hail exposure areas. However, it will substantially reduce losses (about 50% reduction) from these events. Based on a recent hail-loss investigation of 320,000 homes in 115 zip codes, with 77,000 claims, the study showed that there were 40% fewer claims and losses were reduced by 55% for homes with impact resistant roofs. Homeowner savings were \$200 to \$300.

The change to Section R907.3 simply requires that during a reroof, that the existing roof covering be removed unless the impact resistance tests show the system can be successfully installed over an existing roof covering.

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

**Analysis:** Results of the review of the proposed standard(s) will be posted on the ICC website by August 20, 2006.

## PART I – IBC STRUCTURAL

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

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## FS191–06/07

**1504.1.1, 1507.2.7 (New), 1507.2.7.1 (New), Table 1507.2.7.1 (New), 1609.5.2, Chapter 35; IRC R905.2.4.1 (New), Table R905.2.4.1 (New), R905.2.6, Chapter 43**

**Proponent:** Michael D. Fischer, The Kellen Company, representing the Asphalt Roofing Manufacturers Association

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC-STRUCTURAL AND THE IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

## PART I – IBC STRUCTURAL

### 1. Revise as follows.

**1504.1.1 Wind resistance of asphalt shingles.** Asphalt shingles shall be installed in accordance with Section 1507.2.7. For roofs located where the basic wind speed in accordance with Figure 1609 is 110 mph or greater, asphalt shingles shall be tested in accordance with ASTM D 3161, Class F. As an alternative, load and wind resistance of asphalt shingle roof coverings shall be determined in accordance with Section 1609.5.2.

### 2. Delete and substitute as follows.

**1507.2.7 Attachment.** Asphalt shingles shall have the minimum number of fasteners required by the manufacturer and Section 1504.1. Asphalt shingles shall be secured to the roof with not less than four fasteners per strip shingle or two fasteners per individual shingle. Where the roof slope exceeds 20 units vertical in 12 units horizontal (166 percent slope), asphalt shingles shall be installed in accordance with the manufacturer's printed installation instructions for steep-slope roof applications.

**1507.2.7 Attachment.** Asphalt shingles shall have the minimum number of fasteners required by the manufacturer, but not less than four fasteners per strip shingle or two fasteners per individual shingle. Where the roof slope, exceeds 21 units vertical in 12 units horizontal (21:12), shingles shall be installed as required by the manufacturer.

**1507.2.7.1 Wind Resistance.** Asphalt shingles shall be tested in accordance with either ASTM D3161 or ASTM D7158 for wind resistance. Asphalt shingles shall be meet the classification requirements of Table 1507.2.7 for the appropriate Maximum Basic Wind Speed. Asphalt shingle packaging shall indicate compliance with the required classification in Table 1507.2.7.

3. Add new table as follows:

**TABLE 1507.2.7  
CLASSIFICATION OF ASPHALT ROOF SHINGLES <sup>a</sup>**

<u>MAXIMUM BASIC WIND SPEED FROM FIGURE 1609</u>	<u>ASTM D 3161</u>	<u>ASTM D 7158 b</u>
<u>85</u>	<u>A,D, or F</u>	<u>D,G or H</u>
<u>90</u>	<u>A,D, or F</u>	<u>D,G or H</u>
<u>100</u>	<u>A,D, or F</u>	<u>G or H</u>
<u>110</u>	<u>F</u>	<u>G or H</u>
<u>120</u>	<u>F</u>	<u>G or H</u>
<u>130</u>	<u>F</u>	<u>H</u>
<u>140</u>	<u>F</u>	<u>H</u>
<u>150</u>	<u>F</u>	<u>H</u>

- a. Asphalt Shingles shall be tested in accordance with ASTM D 3161 or ASTM D 7158. Refer to this table for selection of the appropriate product classification(s).
- b. The standard calculations contained in ASTM D 7158 assume exposure category B or C and building height of 60 feet or less. Additional calculations are required for conditions outside of these assumptions.

4. Revise as follows:

**1609.5 Roof systems.**

**1609.5.1 Roof deck.** The roof deck shall be designed to withstand the wind pressures determined in accordance with ASCE 7.

**1609.5.2 Roof coverings.** Roof coverings shall comply with Section 1609.5.1.

**Exception:** Rigid tile roof coverings that are air permeable and installed over a roof deck complying with Section 1609.5.1 are permitted to be designed in accordance with Section 1609.5.3.

~~Asphalt shingles installed over a roof deck complying with Section 1609.5.1 shall be tested to determine the resistance of the sealant to uplift forces using ASTM D 6381.~~

~~Asphalt shingles installed over a roof deck complying with Section 1609.5.1 are permitted to be designed using UL 2390 to determine appropriate uplift and force coefficients applied to the shingle.~~

Asphalt Shingles installed over a roof deck complying with 1609.5.1 shall be permitted to be designed using ASTM D 7158 to determine wind resistance.

5. Add standard to Chapter 35 as follows:

**ASTM**

D7158-05 Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method)

**PART II – IRC BUILDING/ENERGY**

1. Revise as follows:

**R905.2.4.1 Wind resistance of asphalt shingles.** Asphalt shingles shall be installed in accordance with Section R905.2.6. ~~Shingles classified using ASTM D 3161 are acceptable for use in wind zones less than 110 mph (49 m/s). Shingles classified using ASTM D 3161, Class F, are acceptable for use in all cases were special fastening is required.~~ Asphalt shingles shall be tested for wind resistance in accordance with one of the following test standards:

1. ASTM D 3161
2. ASTM D 7158



Asphalt shingles shall meet the classification requirement of Table 905.2.4.1 for the applicable maximum basic wind speed. Asphalt shingle packaging shall bear a label to indicate compliance with one of the above ASTM test standards and the appropriate classification from Table 905.2.4.1.

**2. Add new table as follows:**

**TABLE R905.2.4.1  
CLASSIFICATION OF ASPHALT ROOF SHINGLES <sup>a</sup>**

<u>MAXIMUM BASIC WIND SPEED FROM TABLE R301.2(1)</u>	<u>ASTM D 3161</u>	<u>ASTM D 7158 b</u>
<u>85</u>	<u>A,D, or F</u>	<u>D,G or H</u>
<u>90</u>	<u>A,D, or F</u>	<u>D,G or H</u>
<u>100</u>	<u>A,D, or F</u>	<u>G or H</u>
<u>110</u>	<u>F</u>	<u>G or H</u>
<u>120</u>	<u>F</u>	<u>G or H</u>
<u>130</u>	<u>F</u>	<u>H</u>
<u>140</u>	<u>F</u>	<u>H</u>
<u>150</u>	<u>F</u>	<u>H</u>

- a. Asphalt Shingles shall be tested in accordance with ASTM D 3161 or ASTM D 7158. Refer to this table for selection of the appropriate product classification(s).
- b. The standard calculations contained in ASTM D 7158 assume exposure category B or C and building height of 60 feet or less. Additional calculations are required for conditions outside of these assumptions.

**3. Revise as follows.**

**R905.2.6 Attachment.** ~~Asphalt shingles shall have the minimum number of fasteners required by the manufacturer, but not less than four fasteners per strip shingle or two fasteners per individual shingle. For normal application, asphalt shingles shall be secured to the roof with not less than four fasteners per strip shingle or two fasteners per individual shingle. Where the roof slope exceeds 20 21 units vertical in 12 units horizontal (467 21:12, 175 percent slope), shingles shall be installed as required by the manufacturer. special methods of fastening are required. For roofs located where the basic wind speed per Figure 301.2(4) is 140 mph (49 m/s) or higher, special methods of fastening are required. Special fastening methods shall be tested in accordance with ASTM D 3161 Class F. Asphalt shingle wrappers shall bear a label indicating compliance with ASTM D 3161 Class F.~~

**4. Add standard to Chapter 43 as follows:**

**ASTM**

D7158-05 Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method)

**Reason:** This proposal will revise requirements for the testing of asphalt shingles to demonstrate resistance to wind forces, and provide clarifications to the attachment requirements for steep slope conditions. The IBC and IRC lack a reference to ASTM D 7158, which provides a method of testing that is appropriate for sealed asphalt shingles. The current reference to ASTM D 3161 is necessary for unsealed shingles, so that reference remains in this proposal. In order to clearly communicate the proper application of the two standards, the proponent is adding Table 1507.2.7 (IRC Table 905.2.4.1). The table will assist in the proper selection of asphalt shingles based upon the appropriate basic wind speed and the applicable standard.

Changes in the attachment section provide consistency with the industry installation guidelines, but continue to provide minimum fastener quantities. Reformatting the code sections provides a clear line of compliance. The shingle shall be tested, labeled, selected, and attached, and the code will now follow that sequence in the requirements.

The referenced standard has been accepted by the Florida Building Commission Structural TAC, for adoption into the Florida Building Code and Florida Building Code Residential. The clarification to Section 1609.5.2 provides consistency to the reference of ASTM D 7158.

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

**Analysis:** Results of the review of the proposed standard(s) will be posted on the ICC website by August 20, 2006.

**PART I – IBC STRUCTURAL**

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

# FS192-06/07

## 1504.2, 1504.3, 1504.8 and Table 1508.4

Proponent: Philip Brazil, P.E., Reid Middleton, Inc., representing himself

**THIS PROPOSAL IS ON THE AGENDA OF THE STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.**

Revise as follows:

**1504.2 Wind resistance of clay and concrete tile.** ~~Wind loads on~~ Clay and concrete tile roof coverings shall be ~~connected to the roof deck~~ in accordance with ~~Chapter 16~~ Section 1609.5.

**1504.3 Wind resistance of nonballasted roofs.** Roof coverings installed on roofs in accordance with Section 1507 that are mechanically attached or adhered to the roof deck shall be designed to resist the design wind load pressures for components and cladding in Chapter 16 accordance with Section 1609.

**1504.8 Gravel and stone.** Gravel or stone shall not be used on the roof of a building located in a hurricane-prone region as defined in Section 1609.2, or on any other building with a mean roof height exceeding that permitted by Table 1504.8 based on the exposure category and basic wind speed at the ~~building~~ site.

**TABLE 1504.8  
MAXIMUM ALLOWABLE MEAN ROOF HEIGHT PERMITTED FOR BUILDINGS  
WITH GRAVEL OR STONE ON THE ROOF IN AREAS OUTSIDE A HURRICANE-PRONE REGION**

BASIC WIND SPEED FROM FIGURE 1609 (mph) <sup>b</sup>	MAXIMUM MEAN ROOF HEIGHT (ft) <sup>a,c</sup>		
	Exposure category		
	B	C	D
85	170	60	30
90	110	35	15
95	75	20	NP
100	55	15	NP
105	40	NP	NP
110	30	NP	NP
115	20	NP	NP
120	15	NP	NP
Greater than 120	NP	NP	NP

For SI: 1 foot = 304.8 mm; 1 mile per hour = 0.447 m/s.

- Mean roof height ~~in accordance with Section 1609.2~~ as defined in ASCE 7.
- For intermediate values of basic wind speed, the height associated with the next higher value of wind speed shall be used, or direct interpolation is permitted.
- NP = gravel and stone not permitted for any roof height.

**Reason:** The purpose for the proposal is to update the provisions of Section 1504 on performance requirements for roof decks and roof covering to be more consistent with current structural provisions in Chapter 16. Section 1504.2 on clay and concrete tile roof coverings is revised from a requirement to be connected in accordance with Chapter 16 to a determination of wind loads in accordance with Section 1609.5 because the only identified reference to clay and concrete tile roof coverings in Chapter 16 is in Section 1609.5, which specifies how to determine wind loads (Section 1609.5.3) and wind pressures (Section 1609.5.1) but does not specify required connections.

Section 1609.5.1 requires the roof deck to be designed to withstand the wind pressures determined in accordance with ASCE 7. Section 1609.5.2 requires roof coverings to comply with Section 1609.5.1 except for rigid tile roof coverings that are air permeable and installed over a roof deck complying with Section 1609.5.1, which are permitted to comply with Section 1609.5.3.

A change to the title of Section 1504.2 is not proposed in order to maintain consistency with the titles to Sections 1504.1 (wind resistance of roofs) and 1504.3 (wind resistance of ballasted roofs), and with the subject of Section 1504.2.1, which refers to the resistance of shingles to uplift forces.

The proposed changes to Section 1504.3 are editorial. The deletion of "building" from Section 1504.8 is being done because the provisions of the IBC apply to structures as well as buildings. The revision to Footnote (a) of Table 1504.8 is being done because Section 1609.2 does not define mean roof height but that definition is found in Section 6.2 of ASCE 7-05.

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

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

# FS193-06/07

## 1504.3.1

**Proponent:** Mark S. Graham, James R. Kirby, National Roofing Contractors Association

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY AND THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

### PART I – IBC FIRE SAFETY

**Revise as follows:**

**1508.1 General.** The use of above-deck thermal insulation shall be permitted provided such insulation is covered with an approved roof covering and passes the tests of ~~FM 4450~~ or UL 1256 when tested as an assembly.

#### Exceptions:

1. Foam plastic roof insulation shall conform to the material and installation requirements of Chapter 26.
2. Where a concrete roof deck is used and the above-deck thermal insulation is covered with an approved roof covering.

### PART II – IBC STRUCTURAL

**Revise as follows:**

**1504.3.1 Other Roof Systems.** Roof systems with built-up, modified bitumen, fully adhered or mechanically attached single-ply through fastened metal panel roof systems, and other types of membrane roof coverings shall also be tested in accordance with ~~FM 4450~~, FM 4470, UL 580 or UL 1897.

**Reason:** This proposal omits from the Code a reference standard that does not appear to comply with ICC's criteria for reference standards. FM 4450 was added to the Code's initial development before ICC's guidelines for reference standards were as strict. Omission of FM 4450 does not change the code's requirements in that other acceptable reference standards are already included in this section.

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

**Analysis:** This standard appears at several sections in the code. See Chapter 35 for a list of sections.

### PART I – IBC FIRE SAFETY

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

### PART II – IBC STRUCTURAL

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

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# FS194-06/07

## 1504.7

**Proponent:** Mark S. Graham, James R. Kirby, National Roofing Contractors Association

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**1504.3.1 Other Roof Systems.** Roof systems with built-up, modified bitumen, fully adhered or mechanically attached single-ply through fastened metal panel roof systems, and other types of membrane roof coverings shall also be tested in accordance with FM 4450, ~~FM 4470~~, UL 580 or UL 1897.

**1504.7 Impact Resistance.** Roof coverings installed on low-slope roofs (roof slope < 2:12) in accordance with Section 1507 shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, and CGSB 37-GP-52M or the "Resistance to Foot Traffic Test" in Section 5.5 of FM 4470.

**Reason:** This proposal omits from the Code a reference standard that does not appear to comply with ICC's criteria for reference standards. FM 4470 was added to the Code's initial development before ICC's guidelines for reference standards were as strict. Omission of FM 4470 does not change the code's requirements in that other acceptable reference standards are already included in these sections.

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

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

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## FS195-06/07

### 1504.3.2

**Proponent:** Daniel J. Walker, P.E., Metal Building Manufacturers Association, Inc. (MBMA)

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.**

**Delete and substitute as follows:**

~~**1504.3.2 Metal panel roof systems.** Metal panel roof systems through fastened or standing seam shall be tested in accordance with UL 580 or ASTM E 1592.~~

~~**Exception:** Metal roofs constructed of cold-formed steel, where the roof deck acts as the roof covering and provides both weather protection and support for structural loads, shall be permitted to be designed and tested in accordance with the applicable referenced structural design standard in Section 2209.1.~~

**1504.3.2** Metal roofs constructed of cold-formed steel, where the roof deck acts as the roof covering and provides both weather protection and support for structural loads, shall be designed and tested in accordance with the applicable referenced structural design standard in Section 2209.1.

**1504.3.3** Metal panel roof systems not defined in 1504.3.2 shall be tested in accordance with UL 580 or ASTM E1592.

**Reason:** The purpose of this change is to clarify the Code.

The current language is contradictory to the testing requirements for standing seam roofs in the North American Specification for the Design of Cold-formed Steel Structural Members (NAS-01) that is specified in Section 2209.1. NAS-01 requires that standing seam roofs constructed of cold-formed steel must be tested according to ASTM E1592 (UL580 is not an acceptable test method for these roof systems). Therefore, the proposed change eliminates this contradiction by making the existing exception a requirement and defaulting to NAS-01.

The AISI Specification is clear that steel standing seam metal roofs shall be tested using ASTM E1592 only. Through-fastened metal roofs constructed of any material, and standing seam metal roofs constructed of materials other than steel, can be tested using either UL 580 or ASTM E1592. This code change makes the testing requirements consistent with NAS-01.

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

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

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## FS196-06/07

### 1504.4

**Proponent:** David L. Roodvoets, DLR Consultants, representing Single-ply Roofing Institute, Inc. (SPRI)

**THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.**

**Revise as follows:**

**1504.4 Ballasted low-slope roof systems.** Ballasted low-slope (roof slope < 2:12) single-ply roof system coverings installed in accordance with Sections ~~4507~~ 1507.12 and 1507.13 shall be designed in accordance with ~~Section 1504.8~~ and ANSI/SPRI RP-4.

**Reason:** Clarify which specific sections in 1507 - Requirements for Roof Coverings, involve low slope Ballasted systems and that the ballast used is large stone.

There is confusion by users of the code between the materials used to provide wind uplift on roofs and smaller aggregate that is used on adhered roofing systems to add fire and weather protection.

Ballasted single ply membranes performed very well in the recent hurricanes, see examples from the RICOWI report, again verifying that ANSI/SPRI RP-4 provides the design tools to install roofing systems that meet the required design. This change clearly separates the requirements for systems that use ballast for wind resistance from those systems that use smaller aggregate for fire and weather protection.