IBC - Structural

2024 GROUP A PROPOSED CHANGES TO THE I-CODES

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S2-24

IBC: [BF] 1705.15, [BF] 1705.15.1, [BF] 1705.15.2, [BF] 1705.15.3, [BF] 1705.15.4, [BF] 1705.15.4.1, [BF] 1705.15.4.2, [BF] 1705.15.4.3, [BF] 1705.15.4.4, [BF] 1705.15.4.5, [BF] 1705.15.4.6, [BF] 1705.15.4.7, [BF] 1705.15.4.8, [BF] 1705.15.4.9, [BF] 1705.15.5, [BF] 1705.15.6, [BF] 1705.15.6.1, [BF] 1705.15.6.2, [BF] 1705.15.6.3, ASTM Chapter 35 (New)

Proposed Change as Submitted

Proponents: Bill McHugh, CM Services, National Fireproofing Contractors Association (bill@mc-hugh.us)

THIS CODE CHANGE WILL BE HEARD BY THE IBC - FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2024 International Building Code

Revise as follows:

[BF] 1705.15 Sprayed fire-resistive materials (SFRM). *Special inspections* and tests of *sprayed fire-resistive materials* (*SFRM*) applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.15.1 through 1705.15.6 and ASTM WK70851. *Special inspections* shall be based on the fire-resistance design. as designated in the *approved construction documents* The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. *Special inspections* and tests shall be performed during construction with an additional visual inspection after the rough installation of electrical, *automatic sprinkler systems* , mechanical and plumbing systems and suspension systems for ceilings, and before concealment where applicable. The required sample size shall not exceed 110 percent of that specified by the referenced standards in Sections 1705.15.4.1 through 1705.15.4.9.

[BF] 1705.15.1 Physical and visual tests. The *special inspections* and tests shall include the following to demonstrate compliance with the listing and the *fire-resistance rating*:

1. Condition of substrates.
2. Thickness of application.
3. Density in pounds per cubic foot (kg/m^3).
4. Bond strength adhesion/cohesion.
5. Condition of finished application.

[BF] 1705.15.2 Structural member surface conditions. The surfaces shall be prepared in accordance with the *approved* fire-resistance design and the written instructions of *approved* manufacturers. The prepared surface of structural members to be sprayed shall be inspected by the *special inspector* before the application of the *SFRM* .

Revise as follows:

[BF] 1705.15.3 ~~Application~~ Substrate temperature verification and ventilation. The substrate shall have a minimum ambient temperature before and after application as specified in the written instructions of *approved* manufacturers. The area for application shall be ventilated during and after application as required by the written instructions of *approved* manufacturers.

[BF] 1705.15.4 Thickness. *SFRM* thickness shall be no less than allowed by ASTM E605. Not more than 10 percent of the thickness measurements of the *SFRM* applied to floor, roof and wall assemblies and structural members shall be less than the thickness required by the *approved* fire-resistance design, and none shall be less than the minimum allowable thickness required by Section 1705.15.4.1.

[BF] 1705.15.4.1 Minimum allowable thickness. For design thicknesses 1 inch (25 mm) or greater, the minimum allowable individual thickness shall be the design thickness minus 1/4 inch (6.4 mm). For design thicknesses less than 1 inch (25 mm), the minimum allowable individual thickness shall be the design thickness minus 25 percent. Thickness shall be determined in accordance with ASTM

E605. Samples of the *SFRM* shall be selected in accordance with Sections 1705.15.4.2 and 1705.15.4.3.

[BF] 1705.15.4.2 Floor, roof and wall assemblies. The thickness of the *SFRM* applied to floor, roof and wall assemblies shall be determined in accordance with ASTM E605, making not less than four measurements for each 1,000 square feet (93 m^2) of the sprayed area, or portion thereof, in each *story*.

Revise as follows:

[BF] ~~1705.15.4.3 Cellular decks.~~ ~~Thickness measurements shall be selected from a square area, 12 inches by 12 inches (305 mm by 305 mm) in size. Not fewer than four measurements shall be made, located symmetrically within the square area.~~

[BF] ~~1705.15.4.4 Fluted decks.~~ ~~Thickness measurements shall be selected from a square area, 12 inches by 12 inches (305 mm by 305 mm) in size. Not fewer than four measurements shall be made, located symmetrically within the square area, including one each of the following: valley, crest and sides. The average of the measurements shall be reported.~~

[BF] 1705.15.4.5 Structural members. The thickness of the *SFRM* applied to structural members shall be determined in accordance with ASTM E605. Thickness testing shall be performed in accordance with acceptance criteria in ASTM E605, or on not less than 25 percent of the structural members on each floor, whichever is greater.

[BF] ~~1705.15.4.6 Beams and girders.~~ ~~At beams and girders thickness measurements shall be made at nine locations around the beam or girder at each end of a 12-inch (305-mm) length.~~

[BF] ~~1705.15.4.7 Joists and trusses.~~ ~~At joists and trusses, thickness measurements shall be made at seven locations around the joist or truss at each end of a 12-inch (305-mm) length.~~

[BF] ~~1705.15.4.8 Wide-flanged columns.~~ ~~At wide-flanged columns, thickness measurements shall be made at 12 locations around the column at each end of a 12-inch (305-mm) length.~~

[BF] 1705.15.4.9 Hollow structural section and pipe columns. At hollow structural section and pipe columns, thickness measurements shall be made at not fewer than four locations around the column at each end of a 12-inch (305 mm) length.

[BF] 1705.15.5 Density. The density of the *SFRM* shall be not less than the density specified in the *approved* fire-resistance design. Density of the *SFRM* shall be determined in accordance with ASTM E605. The test ~~samples~~ sample quantities for determining the density of the *SFRM* shall be selected as follows:

1. From each floor, roof and wall assembly at the rate of not less than one sample for every 2,500 square feet (232 m^2) or portion thereof of the sprayed area in each *story*.
2. From beams, girders, trusses and columns at the rate of not less than one sample for each type of structural member for each 2,500 square feet (232 m^2) of floor area or portion thereof in each *story*.

[BF] 1705.15.6 Bond strength. The cohesive/adhesive bond strength of the cured *SFRM* applied to floor, roof and wall assemblies and structural members shall be not less than 150 pounds per square foot (psf) (7.18 kN/m^2) for buildings with occupied floors up to 75' (22.86 m) above lowest fire department access. For buildings greater with occupied floors equal to or greater than 75' (22.86 m) above lowest fire department access shall be installed in accordance with bond strengths as listed in Table 403.2.3. The cohesive/adhesive bond strength shall be determined in accordance with the field test specified in ASTM E736 by testing in-place samples of the *SFRM* selected in accordance with Sections 1705.15.6.1 through 1705.15.6.3.

[BF] 1705.15.6.1 Floor, roof and wall assemblies. The test samples for determining the cohesive/adhesive bond strength of the *SFRM* shall be selected from each floor, roof and wall assembly at the rate of not less than one sample for every 2,500 square feet (232 m^2) of the sprayed area, or portion thereof, in each *story*.

[BF] 1705.15.6.2 Structural members. The test samples for determining the cohesive/adhesive bond strength of the *SFRM* shall be

selected from beams, girders, trusses, columns and other structural members at the rate of not less than one sample for each type of structural member for each 2,500 square feet (232 m^2) of floor area or portion thereof in each *story* .

[BF] 1705.15.6.3 Primer, paint and encapsulant bond tests. Bond tests to qualify a primer, paint or encapsulant shall be conducted where the *SFRM* is applied to a primed, painted or encapsulated surface for which acceptable bond-strength performance between these coatings and the *SFRM* has not been determined. A bonding agent approved by the *SFRM* manufacturer shall be applied to a primed, painted or encapsulated surface where the bond strengths are found to be less than required values.

Add new standard(s) as follows:

ASTM

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

WK70851 New Practice for Standard Practice for the On-Site Inspection of Installed Spray-Applied Fire Resistive Materials

Reason: This change deals with Spray Fire-Resistive Material installation special inspections. The proposal's purpose is threefold.

1. Introduce a new ASTM document to SFRM Special Inspection, WK70851 Practice for On-Site Inspection of Installed Spray Fire-Resistive Materials.
2. Clean up the language so that it speaks more inspection than application.
3. Eliminate duplications from IBC 1705.15 code sections and ASTM E605 and E736, standards. Where there was duplicate language from ASTM E605 or ASTM E736, the duplications were deleted from the code. Where the code acceptance criteria is more stringent than the inspection practices/standards, the code requirement language is retained.

The ICC Adhoc Committee on Terrorism Resistant Buildings (ICC TRB) added several items to this section to provide performance of installed SFRM fireproofing during the building life cycle. In preparing this proposal, we respected that legacy and left the increased inspection over and above the ASTM E605 and ASTM E736 alone.

In the interest of making this review easier, we kept several sections in the proposal that had no changes for easy reference and comparison of the code change to existing text. We have also highlighted below the changes and a short reason for each change.

- 1705.15 – Inserted new ASTM Work Item, practice for SFRM inspections on jobsites.
- 1705.15.1 – No change. It's important charging language.
- 1705.15.2 – No change.
- 1705.15.3 – Changed title from Application to Substrate temperature verification and ventilation, to reflect that the inspection standard is an inspection standard, not an application standard.
- 1705.15.4 – Thickness, added in the charging language that the inspection thicknesses are not less than what is in ASTM E605, and left the rest of the section alone, which is not in E605.
- 1705.15.4.1 – Minimum allowable thickness. No change, as the code is more restrictive than the E605.
- 1705.15.4.2 – No change, as the code is more restrictive than the E605.
- 1705.15.4.3 – Cellular decks, deleted, the section is duplicated in E605.
- 1705.15.4.4 – Fluted Decks, deleted, the section is duplicated in E605.
- 1705.15.4.5 – Structural Members – Slight change, that the measurement is to be in accordance with E605 or the code, whichever is greater. The code is more restrictive than the E605.
- 1705.15.4.6 – Beams and girders, deleted, duplicated in E605
- 1705.15.4.7 – Joists and trusses, deleted, duplicated in E605
- 1705.15.4.8 – Wide Flanged Columns - deleted, duplicated in E605…a wide flange column is a column, and all thicknesses for columns regardless of size are measured the same.
- 1705.15.4.9 – Hollow Structural section and pipe columns – not in E605, no change.
- 1705.15.5 – Density – slight edit, 'sample quantities', and left sample quantity at the more stringent code mandated amount.
- 1705.15.6 – Bond Strength – Added reference to table 403.2.3 for inspection, highlighting differences of bond strength for buildings between 0-74', 75'-420' and 420'+ in height. The bond strength issue was found by the ICC TRB to be a significant factor in SFRM being able to stay on substrates for the life of the building, hence the 430 PSF and 1,000 PSF that exists in the code today.

- 1705.15.6.1 – Floor, roof and wall assy. - No change, code more stringent than E736 standard.
- 1705.15.6.2 – Structural members - No change, code more stringent than E736 standard.
- 1705.15.6.3 – Primer, paint and encapsulant bond strength - No change, this section is not in E736.

As the ASTM SFRM inspection practice evolves and creates more duplications between the code and the standards, we'll propose more deletions at that time.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This proposal is not a change in requirements to SFRM Special Inspection procedures. The new WK 70851 Practice for the On-Site Inspection of Installed Spray Fire-Resistive Materials actually adds text making the administration of the inspection easier for jurisdictions.

The result of the code change should be that the inspection requirements are easier to handle for all involved, inspection agency, building official and contractors involved with inspections.

S2-24

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: The committee disapproved as the proposed ASTM standard draft is not complete. The committee was glad to see the process has been started and recommends checking all new language. (Vote 11-1)

S2-24

Individual Consideration Agenda

Comment 1:

Proponents: Bill McHugh, CM Services, National Fireproofing Contractors Association (bill@mc-hugh.us) requests As Submitted

Reason: The Fire Safety Committee Disapproved S2-24 because the ASTM Inspection Standard was not complete at the time of the hearings. We expect that this standard will be completed by the public comment hearing, or before. As soon as the ASTM Standard is complete, we will modify the proposal with the correct ASTM Standard number.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Comment (CAH2)# 463

S4-24

IBC: 1705.17 (New), ASTM Chapter 35 (New)

Proposed Change as Submitted

Proponents: Bill McHugh, CM Services, National Fireproofing Contractors Association (bill@mc-hugh.us)

THIS CODE CHANGE WILL BE HEARD BY THE IBC - FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2024 International Building Code

Add new text as follows:

1705.17 Board and Wrap Fire-Resistive Materials. *Special inspections* and tests for board and wrap fire-resistive materials applied to structural elements and decks shall be performed in accordance with ASTM WK70807. *Special inspections* and tests shall be based on the fire-resistance design as designated in the *approved construction documents* and the manufacturers installation instructions. *Special inspections* and tests shall be performed during construction. Additional visual inspection shall be performed after the rough installation and, where applicable, prior to the concealment of electrical, automatic sprinkler, mechanical and plumbing systems.

Add new standard(s) as follows:

ASTM

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

WK70807	New Practice for the On-Site Inspection of Installed Board and Wrap Type Fireproofing

Reason: For decades, there has been special inspection for Spray Fire-Resistive Materials (SFRM) and Intumescent Fire-Resistive Materials (IFRM). However, board and wrap materials used for fireproofing structural building elements and assemblies have not been specifically named in their own section. The only place to find where special inspection for these materials might be is in section 1705.1 General. In 1705.1, General, it seems to assume that these items would get special inspections.

1705.1.1 Special cases. *Special inspections and tests shall be required for proposed work that is, in the opinion of the building official, unusual in its nature, such as, but not limited to, the following examples:*

1. Construction materials and systems that are alternatives to materials and systems prescribed by this

code.

2. Unusual design applications of materials described in this code.

3. Materials and systems required to be installed in accordance with additional manufacturer's instructions

that prescribe requirements not contained in this code or in standards referenced by this code

In section 1705.1.1(1) the IBC states 'alternatives to materials and systems prescribed in the code' should also get special inspections. Boards and wraps come in various types.

The board materials used can include gypsum panels, calcium silicate, mineral wool, composite metals with ceramic filling, or ceramic fiber type board protection. Wraps include ceramic fiber insulation, endothermic wraps. The common element of these is that they are installed in accordance with a listing and manufacturer's installation instructions to result in a fire-resistance-rated building element or assembly.

This new section is needed to assure fire-resistance and structural integrity is maintained during fire conditions regardless of material type.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This code change is adding a standard practice to the code that regulates how the inspection is conducted - that is already done. Based on section 1705.1.1, Special Cases, the materials are alternatives to materials and systems prescribed in the code.

S4-24

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: The committee disapproved, although they liked the idea of the proposal, they felt it has unintended consequences, is too broad, and needs to be cleaned up with more specific requirements. (Vote 12-0)

S4-24

Individual Consideration Agenda

Comment 1:

Proponents: Bill McHugh, CM Services, National Fireproofing Contractors Association (bill@mc-hugh.us) requests As Submitted

Reason: The Fire Safety Committee Disapproved S4-24 because the new ASTM Inspection Standard was not complete at the time of the hearings. We expect that this standard will be completed by the public comment hearing, or before. As soon as the ASTM Standard is complete, we will modify the proposal with the correct ASTM Standard number.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Comment (CAH2)# 465

S5-24

IBC: [BF] 1705.16, ASTM Chapter 35 (New)

Proposed Change as Submitted

Proponents: Bill McHugh, CM Services, National Fireproofing Contractors Association (bill@mc-hugh.us)

THIS CODE CHANGE WILL BE HEARD BY THE IBC - FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2024 International Building Code

Revise as follows:

[BF] 1705.16 Intumescent fire-resistive materials. *Special inspections* and tests for *intumescent fire-resistive materials* applied to structural elements and decks shall be performed in accordance with ASTM WK70852 ~~AWCI 12-B~~. *Special inspections* and tests shall be based on the fire-resistance design as designated in the *approved construction documents*. *Special inspections* and tests shall be performed during construction. Additional visual inspection shall be performed after the rough installation and, where applicable, prior to the concealment of electrical, automatic sprinkler, mechanical and plumbing systems.

Add new standard(s) as follows:

ASTM

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

WK70852 New Practice for the On-Site Inspection of Installed Intumescent Fire Resistive Materials

Reason: For decades, there has been special inspection required in IBC's Chapter 17 for Intumescent Fire-Resistive Materials (IFRM). A new industry consensus standard is being balloted at E06 Main Committee, on its last few negatives. The consensus standard, ASTM, WK 70852, Practice for On-Site Inspection of Installed Intumescent Fire-Resistive Material, has been collaboratively developed with input from many stakeholders. When the standard is approved, we will submit a floor modification to insert the new standard number.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This code change will have no effect on the cost of construction. The methods used are similar to what is currently written in the code.

S5-24

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: The committee disapproved, and suggested the proposed ASTM standard needs to be complete (Vote 9-3)

S5-24

Individual Consideration Agenda

Comment 1:

Proponents: Bill McHugh, CM Services, National Fireproofing Contractors Association (bill@mc-hugh.us) requests As Submitted

Reason: The Fire Safety Committee Disapproved S5-24 because the ASTM Inspection Standard was not complete at the time of the hearings. We expect that this standard will be completed by the public comment hearing, or before. As soon as the ASTM Standard is complete, we will modify the proposal with the correct ASTM Standard number.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Comment (CAH2)# 467

S9-24

IBC: SECTION 202 (New), [BF] 2510.6, [BF] 2510.6.1, [BF] 2510.6.2, 2510.6.1 (New), 2510.6.2 (New), 2510.6.3 (New), TABLE 2510.6 (New)

Proposed Change as Submitted

Proponents: Jay Crandell, P.E., ABTG / ARES Consulting, Foam Sheathing Committee of the American Chemistry Council (jcrandell@aresconsulting.biz)

THIS CODE CHANGE WILL BE HEARD BY THE IBC - FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2024 International Building Code

Add new definition as follows:

STUCCO BOND BREAK. A substantially nonwater-absorbing layer placed directly behind stucco to prevent adhesion of the stucco to the surface of the *water-resistive barrier*, to serve as a protective layer over the *water-resistive barrier*, to provide a capillary break, and to promote drainage; examples include 10-min Grade D paper, No.15 felt, foam plastic insulating sheathing, polymeric building wraps, and other similar materials.

DRAINAGE PLANE. A continuous surface within a building assembly, such as created by a *water-resistive barrier* and flashing, installed in a manner that is capable of draining water by gravity flow downward and to the exterior.

DRAINAGE SPACE. A cavity in an *exterior wall* assembly, located between the *water-resistive barrier* and other exterior materials such as cladding or *stucco bond break*, used to enhance the drainage performance of the *drainage plane*.Examples include cavities formed by a furred gap, channels, a porous material or matrix, or other means to enhance drainage performance.

Revise as follows:

[BF] 2510.6 Water-resistive barriers. *A w*~~W~~*ater-resistive barrier*~~s~~,a *stucco bond break*, and a means of drainage shall be provided in accordance with one of the methods in Table 2510.6 or an *approved design* complying with Section 1402.2. ~~shall be installed as required in Section 1403.2 and shall comply with Section 2510.6.1 or 2510.6.2.~~ **Exception:** ~~Sections 2510.6.1 and 2510.6.2 shall not apply to c~~Construction where accumulation, condensation or freezing of moisture will not damage the materials.

Delete without substitution:

~~**[BF] 2510.6.1 Dry climates.** One of the following shall apply for dry (B) climate zones:~~

1. ~~The *water resistive barrier* shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of *water resistive barrier* complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing, installed in accordance with Section 1404.4 and intended to drain to the *water resistive barrier*, is directed between the layers.~~
2. ~~The *water resistive barrier* shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of *water resistive barrier* complying with ASTM E2556, Type II. The *water resistive barrier* shall be separated from the stucco by a layer of foam plastic insulating sheathing or other nonwater absorbing layer, or a drainage space or means of drainage complying with Section 2510.6.2. Flashing installed in accordance with Section 1404.4 and intended to drain to the *water resistive barrier* shall be directed to the exterior side of the *water resistive barrier*.~~

~~**[BF] 2510.6.2 Moist or marine climates.** In moist (A) or marine (C) climate zones, *water resistive barrier* shall comply with one of the following:~~

~~1. In addition to complying with Item 1 or 2 of Section 2510.6.1, a space or drainage material not less than 3/16 inch (4.8 mm) in depth shall be applied to the exterior side of the *water resistive barrier*.~~

~~2. In addition to complying with Item 2 of Section 2510.6.1, drainage on the exterior side of the *water resistive barrier* shall have a minimum drainage efficiency of 90 percent as measured in accordance with ASTM E2273 or Annex A2 of ASTM E2925.~~

Add new text as follows:

2510.6.1 Installation. The *water-resistive barrier* shall be installed in accordance with Section 1403.2. The *water-resistive barrier*, *stucco bond break*, and means of drainage as required by Table 2510.6 shall be installed such that a continuous *drainage plane* is maintained. Water shall be directed to the exterior at the base of the stucco application and at any transition between building stories or other conditions where the *drainage plane* or *drainage space* terminates.

2510.6.2 Combination of materials. Materials or systems that create a continuous plane and combine functions of *water-resistive barrier*, *stucco bond break*, or *drainage space* shall be permitted.

2510.6.3 Flashing. Flashing installed in accordance with Section 1404.4 and intended to drain to the *water-resistive barrier*, shall be directed to the *drainage plane* on the exterior side of the *water-resistive barrier*.

TABLE 2510.6 WATER-RESISTIVE BARRIER, STUCCO BOND BREAK, AND MEANS OF DRAINAGE FOR EXTERIOR PLASTER (STUCCO)

MOISTURE REGIME[a]	METHOD	WATER-RESISTIVE BARRIER (WRB)	STUCCO BOND BREAK (SBB)	MEANS OF DRAINAGE
Dry (B)	D1	10-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type I	10-minute Grade D paper or any material meeting definition of a *stucco bond break*	*Drainage plane* is located between adjacent WRB and SBB layers.
	D2	60-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type II	Foam plastic insulating sheathing or other nonwater-absorbing material meeting definition of a *stucco bond break*	*Drainage space* separating the layers not required
	D3		Not Required	*Drainage space* with means to separate stucco from direct contact with WRB
Moist (A) and Marine (C)[b]	M1	10-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type I	10-minute Grade D paper or any material meeting definition of a *stucco bond break*	*Drainage space* with min 3/16-inch (4.6 mm) depth
	M2	60-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type II	Foam plastic insulating sheathing or other nonwater-absorbing material meeting definition of a *stucco bond break*	
	M3		Not Required	*Drainage space* with min. 3/16-inch (4.6 mm) depth and means to separate stucco from direct contact with WRB
	M4	60-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type II	Foam plastic insulating sheathing or other nonwater-absorbing material meeting definition of a *stucco bond break*	Drainage plane or drainage space with drainage efficiency of at least 90% per ASTM E2273 or Annex A2 of ASTM E2925

a. The appropriate moisture regime shall be selected in accordance with Chapter 3 of the *International Energy Conservation Code*.

b. Requirements for Moist (A) and Marine (C) moisture regimes shall be permitted to be applied in the Dry (B) moisture regime.

Reason: The previous two code cycles resulted in technical improvements to Section 2510.6 to address water management of conventional 3-coat stucco installations in moist (A) and marine (C) climate regimes. However, these changes brought about increased complexity of the provisions that vary based on wall assembly conditions and climate conditions with options and requirements that are cross-referenced between the two subsections (existing 2510.6.1 and 2510.6.2 shown as deleted). This formatting approach made determining a particular solution difficult and confusing. Therefore, this proposal clarifies the existing technical requirements and options by making them more “visual” in a table format without changing the technical intent of the code. The multiple requirements and inter-related options of Sections 2510.6.1 and 2510.6.2 (deleted) are now incorporated in Table 2510.6 in a straightforward manner. Also, new definitions for “STUCCO BOND BREAK”, “DRAINAGE PLANE”, and “DRAINAGE SPACE” are provided to facilitate clarity and accuracy in code reading and understanding of different components (and their functions) currently required for 3-coat stucco

applications but vaguely described within the code text. The drainage plane and drainage space definitions can also be used for other exterior wall covering applications in the code.

Beyond the overall formatting changes and definitions described above, some specific clarifications addressed by this proposal are as follows:

Section 2510.6 Water-resistive barriers.

New Table 2510.6 is referenced for requirements instead of the existing two subsections (proposed for deletion). The ability to use an approved design is also provided as a clarification that other solutions than identified in this section and Table 2510.6 are possible.

Section 2510.6.1 Installation. This new subsection consolidates installation requirements that were not addressed consistently across the existing code subsections 2510.6.1 and 2510.6.2. Also, a sentence is added to require drainage to the exterior at the base of the stucco application and at transitions between stories or other conditions where the drainage plane or drainage space terminates. This was based on stucco performance field research in Florida (see Bibliography).

Section 2510.6.2 Combination of Materials. This new subsection clarifies that materials which combine the required functions into a single product can be used rather than having to provide each of the required functions by separate materials. While this may be implied, the intent is to clarify it for transparency and to avoid different interpretations on this matter.

Section 2510.6.3 Flashing. This new subsection simply captures existing code content related to installation of flashing and its integration with the intended drainage plane.

Table 2510.6. This new table replaces the inter-twined and cross-referenced requirements of existing subsections 2510.6.1 and 2510.6.2 (shown as deleted). The requirements of these subsections are now mapped in Table 2510.6 as distinctly different solutions or methods for combining the various required components and options for those components (one combination of components is shown for each row of the table). Therefore, the user simply determines the correct climate “moisture regime” (see footnote a) and then selects an appropriate (or preferred) method and follows the required combination of components in that row of the table. This eliminates the need for a user to decipher the existing code text and cross-referenced requirements between different subsections of code to determine what is required. Finally, a footnote ‘b’ is added to the table to clarify that the more stringent moist/marine solutions can also be applied to the less stringent dry climate moisture regime (something the code inadvertently did not enable but which was intended to be permitted).

Bibliography: Lstiburek, J.W. (2005). Rainwater Management Performance of Newly Constructed Residential Building Enclosures During August and Septemeber 2004. Prepared for Home Builders Association of Metro Orlando and the Florida Home Builders Association by: Building Science Corporation, Westord, MA. January 11, 2005

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This proposal strives to make no technical changes to the requirements in 2510.6 and focuses on formatting improvements and clarifications to better convey the various inter-related requirements and options in 2510.6 and particularly the cross-referenced requirements in subsections 2510.6.1 and 2510.6.2 for dry and moist/marine climates. The primary change is to reformat the subsections to address topics that apply regardless of the climate moisture regime and to place specific requirements and options (methods) in a table format where they can be easily visualized and selected without having to decipher the logic of the current code language.

S9-24

Public Hearing Results (CAH1)

Committee Action: **Disapproved**

Committee Reason: The committee disapproved per the request of the proponent, to allow the proponents of S8 & S9 to reach an agreement for a coordinated table. (Vote 12-0)

S9-24

Individual Consideration Agenda

Comment 1:

IBC: SECTION 202 (New), 2510.6 (New), 2510.6.1 (New), 2510.6.2 (New), TABLE 2510.6 (New), [BF] 2510.6, [BF] 2510.6.1, [BF] 2510.6.2

Proponents: Jay Crandell, P.E., ABTG / ARES Consulting, Foam Sheathing Committee of the American Chemistry Council (jcrandell@aresconsulting.biz) requests As Modified by Committee (AMC2)

Replace as follows:

2024 International Building Code

Add new definition as follows:

STUCCO BOND BREAK. A substantially nonwater-absorbing layer placed directly behind stucco to prevent adhesion of the stucco to the surface of the *water-resistive barrier*.

Add new text as follows:

2510.6 Weather protection. A *water-resistive barrier*, *stucco bond break*, means of drainage, and flashing shall be provided in accordance with Section 1402.2 and one of the methods in Table 2510.6. **Exceptions:**

1. The requirements for a means of drainage shall not apply to construction where accumulation, condensation or freezing of moisture will not damage the materials.
2. Masonry or concrete wall construction in accordance with exception 1 of Section 1402.2.
3. An *approved* design complying with exception 2 of Section 1402.2.

2510.6.1 Installation. The continuous *water-resistive barrier* shall be installed in accordance with Section 1403.2. The *water-resistive barrier*, *stucco bond break*, and means of drainage shall be installed in accordance with Table 2510.6. Water shall be directed to the exterior at the base of the stucco application and at any transition between building stories or other conditions where the means of drainage terminates.

2510.6.2 Flashing. Flashing installed in accordance with Section 1404.4 and intended to drain to the *water-resistive barrier* shall be directed to the exterior side of the *water-resistive barrier*.

TABLE 2510.6 WEATHER PROTECTION REQUIREMENTS FOR EXTERIOR PLASTER (STUCCO)

Method	Moisture Regime[a]	Water-Resistive Barrier (WRB)	Stucco Bond Break (SBB)	Means of Drainage
1	Moist (A), Dry (B), or Marine (C) (any moisture	10-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type I	10-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type I	Drainage cavity with min. 3/16-inch (4.6 mm) depth between WRB and SBB layers
2		60-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type II	Foam plastic insulating sheathing or other *stucco bond break*	

3	regime)		Foam plastic insulating sheathing or other *stucco bond break*	Drainage between WRB and SBB layers with drainage efficiency of at least 90% per ASTM E2273 or Annex A2 of ASTM E2925
4	Dry (B)	10-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type I	10-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type I	Drainage is between WRB and SBB layers
5		60-minute Grade D paper or WRB with water resistance equal to or greater than one layer of ASTM E2556, Type II	Foam plastic insulating sheathing or other *stucco bond break*	
6			Not Required	Means of drainage in accordance with Method 1, 2, or 3 with means to separate stucco from direct contact with WRB

a. The appropriate moisture regime shall be selected in accordance with Chapter 3 of the *International Energy Conservation Code* commercial or residential provisions.

Delete without substitution:

[BF] ~~2510.6~~ ~~Water-resistive barriers.~~ ~~*Water-resistive barriers* shall be installed as required in Section 1403.2 and shall comply with Section 2510.6.1 or 2510.6.2.~~ **~~Exception:~~** ~~Sections 2510.6.1 and 2510.6.2 shall not apply to construction where accumulation, condensation or freezing of moisture will not damage the materials.~~

[BF] ~~2510.6.1~~ ~~Dry climates.~~ ~~One of the following shall apply for dry (B) climate zones:~~

1. ~~The *water-resistive barrier* shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of *water-resistive barrier* complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing, installed in accordance with Section 1404.4 and intended to drain to the *water-resistive barrier*, is directed between the layers.~~
2. ~~The *water-resistive barrier* shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of *water-resistive barrier* complying with ASTM E2556, Type II. The *water-resistive barrier* shall be separated from the stucco by a layer of foam plastic insulating sheathing or other nonwater absorbing layer, or a drainage space or means of drainage complying with Section 2510.6.2. Flashing installed in accordance with Section 1404.4 and intended to drain to the *water-resistive barrier* shall be directed to the exterior side of the *water-resistive barrier*.~~

[BF] ~~2510.6.2~~ ~~Moist or marine climates.~~ ~~In moist (A) or marine (C) climate zones, *water-resistive barrier* shall comply with one of the following:~~

1. ~~In addition to complying with Item 1 or 2 of Section 2510.6.1, a space or drainage material not less than $^{3}/_{16}$ inch (4.8 mm) in depth shall be applied to the exterior side of the *water-resistive barrier*.~~
2. ~~In addition to complying with Item 2 of Section 2510.6.1, drainage on the exterior side of the *water-resistive barrier* shall have a minimum drainage efficiency of 90 percent as measured in accordance with ASTM E2273 or Annex A2 of ASTM E2925.~~

Reason: At CAH1 the proponents of S8-24 and S9-24 requested disapproval to allow time to work with various stakeholders to resolve differences between the two similar proposals. The proponents and stakeholders have met and resolved those differences as represented in this replacement proposal for S9-24. The main goal of the proposal remains the same -- to clarify the current code requirements and clearly identify acceptable methods of installation for stucco applications on exterior walls. The proposal framework places the existing code requirements in a table format with listed methods that are appropriate for the respective climate regimes. The proposal also coordinates with requirements in Chapter 14 related to weather protection of exterior walls, including the exceptions provided in 2510.6.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This proposal is a reformat and clarification of existing requirements without impact to cost of construction.