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### EVALUATION SUBJECT: JM CORBOND III® PERFORMANCE INSULATION SYSTEM®

### REPORT HOLDER:

Johns Manville  
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CSI DIVISION: 07 THERMAL AND MOISTURE  
PROTECTION

CSI Section: 07 21 00 Thermal Insulation

### 1.0 SCOPE OF EVALUATION

#### 1.1 Compliance to the following codes & regulations:

- 2015, 2012 and 2009 International Building Code® (IBC)
- 2015, 2012 and 2009 International Residential Code® (IRC)
- 2015, 2012 and 2009 International Energy Conservation Code® (IECC)
- 2015, 2012 and 2009 NFPA 5000 Building Construction and Safety Code™

#### 1.2 Evaluated in accordance with:

- ICC-ES AC377 Approved April 2016

#### 1.3 Properties assessed:

- Surface burning characteristics
- Thermal performance (R-value)
- Physical properties
- Air Infiltration
- Vapor Permeance
- Fungal Resistance
- Exterior walls of Types I, II, III, IV, and V construction
- Attic and crawl space applications

### 2.0 PRODUCT USE

JM Corbond III® is a non-structural, closed cell, spray applied, polyurethane foam plastic insulation for use in wall cavities, floor assemblies, ceiling assemblies, and attics and crawl spaces. The foam plastic insulation complies with Section 2603 of the IBC, Section R316 of the IRC, and Sections C402 and R402 of the IECC (2009 IECC Sections 303 and 402) and Section 4804 of NFPA 5000 for the

specific uses described in this report. The insulation may be used in buildings of Types I, II, III, IV, and V construction per the IBC, residential structures constructed in accordance with the IRC, and buildings of Type I, II, III, IV, and V construction per NFPA 5000.

### 3.0 PRODUCT DESCRIPTION

#### 3.1 General Description

**3.1.1** JM Corbond III® is a two-component, spray-applied, medium-density, closed-cell polyurethane foam plastic insulation system having a nominal core density of 2.0 pcf (32 kg/m³). The foam plastic is generated by combining the isocyanate (A-component) and a polymeric resin (B-component) through a dual component proportioner, on site, by SPFA certified or Johns Manville certified applicators. All materials shall be stored in their original containers, which shall be kept out of direct sunlight and away from heat and moisture. When stored unopened and indoors at a temperature between 50°F (10°C) and 80°F (27°C), the shelf life for A-component isocyanate is 12 months, and B-component polymeric resin is 6 months. Prior to use, both components (A and B) shall be conditioned in a manner that results in drum temperatures between 60°F (16°C) and 75°F (24°C).

**3.1.2** A-component isocyanate and B-component polymeric resin properly mixed and applied yields a Lavender® finished foam insulation product. The Lavender® color is a Federal Registered Trademark color of Johns Manville.

#### 3.2 Surface Burning Characteristics

**3.2.1** JM Corbond III®, when tested in accordance with ASTM E84, at a maximum thickness of 4 inches (102 mm), and a nominal core density of 2.0 pcf (32 kg/m³), has a flame spread index of less than 25 and a smoke developed index of not more than 450.

**3.2.2** Thicknesses are not limited for ceiling cavities and wall cavities when covered by a prescriptive thermal barrier (minimum ½-inch [12.7 mm] thick gypsum board) in accordance with Section 4.3.1 of this report. Thicknesses of up to 1½ inches (292 mm) for ceiling or floor cavities and 7½ inches (191 mm) for wall cavities are recognized based on testing in accordance with NFPA 286, when installed in accordance with Section 4.3.2 of this report.

**3.3 Thermal Resistance:** The R-value of JM Corbond III® is 7.0 per inch regardless of thickness. Table 1 of this report provides additional information on the values of thermal resistance (R-Value) for specific thicknesses.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provisions of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.

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**3.4 Water Vapor Resistance:** JM Corbond III<sup>®</sup>, when tested in accordance with Procedure A of ASTM E96, has a vapor permeance of less than 1 perm (57 ng/Pa-s-m<sup>2</sup>) at a minimum thickness of 1.5 inches (38 mm), and qualifies as a Class II vapor retarder as defined in IBC Section 202, IRC Section R202 and 2015 NFPA 5000 Section 3.3.662.1 (2012 and 2009 NFPA 5000 Section 3.3.644.1).

**3.5 Air Permeability:** JM Corbond III<sup>®</sup>, when tested in accordance with ASTM E283 at a minimum thickness of 1.0 inches (25.4 mm) exhibits a maximum total air leakage rate of 0.02 L/s-m<sup>2</sup> (0.004 ft<sup>3</sup>/min-ft<sup>2</sup>) when tested at a 75 Pa pressure differential and qualifies as an air-impermeable insulation for use in attics in accordance with the applicable code.

**3.6 Fungal Resistance:** JM Corbond III<sup>®</sup>, when tested in accordance with ASTM C1338 exhibits no fungal growth.

### 3.7 Fire Protective Coatings

**3.7.1 JM IC (aka TPR<sup>2</sup> Fireshell<sup>®</sup> IB4):** JM IC ignition barrier coating is manufactured by Thermal Products Research (TPR2). The coating is water-based and available in both 5 gallon (18.9 L) and 55 gallon (208 L) containers and has a shelf life of 12 months when stored in factory-sealed containers above 45°C (7°C).

**3.7.2 JM TC (aka Fireshell<sup>®</sup> F10/E/TB):** JM TC thermal barrier coating is manufactured by Thermal Products Research (TPR2). The coating is water-based and available in both 5 gallon (18.9 L) and 55 gallon (208 L) containers and has a shelf life of 12 months when stored in factory-sealed containers above 45°C (7°C).

**3.7.3 DC315 Fireproof Paint:** DC315 Fireproof Paint is a water-based latex intumescent coating manufactured by International Fireproof Technology, Inc. and is supplied in 5-gallon (19 L) pails and 55-gallon (208 L) drums. When stored in factory-sealed containers at temperatures between 50°F (10°C) and 80°F (27°C), the coating has a shelf life of 12 months.

### 3.8 JM Spider<sup>®</sup> Ignition Barrier

**3.8.1 JM Spider<sup>®</sup> ignition barrier** is supplied by Johns Manville Corporation. The JM Spider<sup>®</sup> loose-fill glass fiber material is mixed with an adhesive during the spraying process and adheres to the foam plastic. The JM Spider<sup>®</sup> is available in 30 lb (13.6 kg) bags. The ignition barrier shall be kept clean and dry at all times. The spray-applied fiberglass product may be installed at variable thickness levels, and may be used for both wall and ceiling applications.

**3.8.2** The JM Spider<sup>®</sup> adhesive comes in totes and 55 gallon (208 L) drums. The adhesive shall be stored in a cool, dry area in original packaging and at temperatures above 40°F (4.4°C).

## 4.0 INSTALLATION

### 4.1 General

**4.1.1** JM Corbond III<sup>®</sup> shall be installed in accordance with the manufacturer's installation instructions, the applicable code and this report. Where conflicts occur the more restrictive shall govern. The installation instructions and this report shall be made available upon request.

### 4.2 Application

**4.2.1** JM Corbond III<sup>®</sup> shall be installed by spray application using a dual component, volumetric, positive displacement proportioner to combine A and B components in a one to one volumetric ratio, as specified in the manufacturer's installation instructions.

**4.2.2** JM Corbond III<sup>®</sup> shall not be applied to areas where the maximum service temperature is greater than 180°F (82°C). JM Corbond<sup>®</sup> III shall be applied to substrates that are clean, dry, and free from frost, ice, loose debris or contaminants that will interfere with the adhesion of the spray foam insulation. JM Corbond III<sup>®</sup> shall not be applied in electrical outlets, junction boxes, to substrates over 120°F (49°C), or in direct contact with water and shall be protected from the weather during application.

**4.2.3** JM Corbond III<sup>®</sup> may be applied in passes of uniform thickness from a minimum of ½ inch (13 mm) to a maximum of 3½ inches ( 89 mm) per pass. The total thickness shall be as specified in Sections 3.2.2, 4.3, 4.4, and 4.5. "Flash" passes or a thin pass of less than 1 inch (25 mm) on cold surfaces is to be avoided and may result in loss of adhesion of subsequent passes. Thicknesses over 3½ inches ( 89 mm) require multiple passes in accordance with manufacturers installation instructions.

**4.2.4** When JM Corbond III<sup>®</sup> is used in conjunction with wood construction, and where termite infestation is "very heavy" as determined in accordance with IBC Figure 2603.8 (2012 IBC Figure 2603.9) or IRC Figure 301.2(6), the foam plastic shall be installed in accordance with IBC Section 2603.8 (2012 IBC Section 2603.9) or IRC Section R318.4 as applicable.

**4.2.5** When JM Corbond III<sup>®</sup> is used in conjunction with wood construction, in jurisdictions that have adopted NFPA 5000, and where termite infestation is known to be heavy, the foam plastic shall be installed in accordance with NFPA 5000 Section 45.6.9.5.



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### 4.3 Thermal Barrier

**4.3.1 General:** JM Corbond III® shall be covered with a thermal barrier except as specifically excluded by the applicable code.

**4.3.2 Application with a Prescriptive Thermal Barrier:** JM Corbond® III may be applied at any thickness in ceiling cavities and in wall cavities when separated from the interior of the building by a prescriptive thermal barrier (minimum 1/2-inch [12.7 mm] thick gypsum board). The gypsum board shall be installed in accordance with the applicable provisions in Section 2508 of the IBC, Section R702.3 of the IRC or Section 47.2 of NFPA 5000 in such a manner that the foam plastic is not exposed.

**4.3.3 Application without a Prescriptive Thermal Barrier:** JM Corbond III® may be installed without a prescriptive thermal barrier when it has been installed in accordance with one of the assemblies in Table 2 of this report.

**4.4 Attics and Crawl Spaces:** When installing JM Corbond III® in attics and/or crawl spaces and a thermal barrier is omitted in accordance with IBC Section 2603.4.1.6, IRC Sections R316.5.3 or R316.5.4 or Section 48.3.3.4 of NFPA 5000, installation shall comply with either Sections 4.4.1 or 4.4.2 of this report.

JM Corbond® III spray-foam insulation qualifies as an air-impermeable insulation and, when installed in accordance with Sections 4.4.1 or 4.4.2 of this report, may be used to insulate unvented attics and/or unvented cathedral ceilings in accordance with 2015 IRC Section R806.5 (2012 and 2009 IRC Section R806.4).

**4.4.1 Application with a Prescriptive Ignition Barrier:** When JM Corbond III® insulation is installed within attics and crawl spaces where entry is made only service of utilities, the insulation shall be protected by an ignition barrier in accordance with IBC Section 2603.4.1.6, IRC Sections R316.5.3 and R316.5.4 or Section 48.3.3.4 of NFPA 5000, as applicable. The ignition barrier shall be consistent with the construction type of the building. The ignition barrier shall be installed in accordance with the provisions applicable to the material referenced in the IBC, IRC or NFPA 5000 in such a manner that the foam plastic is not exposed. The maximum thickness of JM Corbond® III is limited to 1 1/2 inches (292 mm) on overhead surfaces and floors and 9/4 inches (235 mm) on vertical surfaces.

**4.4.2 Application without a Prescriptive Ignition Barrier:** The spray-applied foam plastic insulation may be installed without a prescriptive ignition barrier in accordance with Section 4.4.2.1, 4.4.2.2 or 4.4.2.3 of this report, when all of the following conditions apply, as applicable:

- a) Entry to the attic or crawl space is only to service utilities, and no storage is permitted.
- b) Attic ventilation is provided when required by IBC Section 1203.2 or IRC Section R806, except when an air-impermeable insulation is permitted in unvented attics in accordance with Section R806.4 of the IRC. Under-floor (crawl space) ventilation is provided when required by 2015 IBC Section 1203.4 (2012 and 2009 IBC Section 1203.3) or IRC Section R408.1, as applicable.
- c) The foam plastic insulation is limited to the maximum thickness and density stated in this report.
- d) Combustion air is provided in accordance with Sections 701 and 703 (2006 IMC) and Section 701 (2009 IMC).
- e) The installed coverage rate or thickness of coatings, if part of the insulation system, shall be equal to or greater than that which was tested.
- f) Attic and crawl spaces do not have interconnected areas.
- g) Air in the attic or crawl space is not circulated to other parts of the building.

**4.4.2.1 Attic and Crawl Space Overhead and Vertical Surfaces Covered with an Alternative Ignition Barrier:** JM Corbond III® spray foam insulation may be spray-applied without a prescriptive ignition barrier to overhead surfaces and/or vertical surfaces when covered with an alternative ignition barrier as described in Sections 4.4.2.1.1, or 4.4.2.1.2 (and as summarized in Table 5).

**4.4.2.1.1 JM IC Ignition Barrier:** Surfaces to be coated shall be dry, clean, and free of dirt, loose particles and any other substances that could interfere with adhesion of the coating. Back-rolling of sprayed material may be necessary to fill pinholes in substrates. The JM IC Ignition Barrier shall be applied with a medium-size nap roller, soft brush or conventional airless spray equipment to a minimum dry film thickness of 3 mils (0.08 mm) (requiring an application rate of approximately 4 wet mils [0.10 mm] or 345 ft<sup>2</sup>/gal [8.3 m<sup>2</sup>/L]). The coating shall be applied in accordance with the JM IB Product Data Sheet and this report. The maximum thickness of JM Corbond® III is limited to 5 1/2 inches (140 mm) on overhead surfaces and 3 1/2 inches (89 mm) on vertical surfaces.

**4.4.2.1.2 JM Spider® with adhesive:** JM Spider® with adhesive shall be installed by insulation contractors who have been trained and certified by Johns Manville. Installers shall use only the JM Spider® Insulation Delivery System equipment engineered and specified by Johns Manville. JM Spider® with adhesive shall be applied in accordance with Johns Manville installation specifications. If the installation temperatures are below 50°F (10°C) the adhesive shall be heated and applied per Johns Manville specifications. JM Spider® with adhesive spray-on insulation shall be installed



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at a minimum 2½ inches (63.5 mm) thickness and a nominal density of 1.8 pcf (28.8 kg/m<sup>3</sup>). The maximum thickness of JM Corbond® III is limited to 10 inches (254 mm) on overhead surfaces and 8 inches (203 mm) on vertical surfaces.

**4.4.2.2 Attic Floors:** JM Corbond III® insulation may be installed exposed (no coating), without an ignition barrier up to a maximum thickness of 1½ inches (292 mm) between and over the joist in attic floors. The insulation shall be separated from the interior of the building by a minimum ½-inch (12.7 mm) thick gypsum board or an approved equivalent thermal barrier, which shall be installed in accordance with the provisions set forth in the IBC, IRC, or evaluation report. The ignition barrier required by IBC Section 2603.4 and IRC Section R316.5.3 may be omitted in this case.

**4.4.2.3 Attic and Crawl Space Overhead and Vertical Surfaces Without an Ignition Barrier:** The JM Corbond III® can be installed exposed (no coating), without an ignition barrier when installed as required in this section. JM Corbond III® insulation may be spray-applied in attics to the underside of roof sheathing, roof rafters and vertical surfaces, and in crawl spaces to the underside of floors and vertical surfaces. When applied to the underside of the top of the space, the thickness of the JM Corbond III® insulation shall not exceed 7½ inches (191 mm) and when applied to vertical surfaces, the maximum thickness shall not exceed 5½ inches (140 mm).

#### 4.5 Exterior Walls of Types I, II, III and IV Construction (IBC)

**4.5.1** When used on exterior walls of Type I, II, III and IV construction, JM Corbond III® spray-applied foam insulation shall comply with Section 2603.5 of the IBC or Section 48.4.1 of NFPA 500, as applicable and Section 4.5.2 of this report, and shall be installed at a maximum thickness of 3½ inches (88.9 mm). The potential heat of the JM Corbond III® is 1991 BTU/ft<sup>2</sup> (22.4 MJ/m<sup>2</sup>) per inch of thickness when tested in accordance with NFPA 259.

**4.5.2 Specific Wall Assemblies:** Wall assemblies shall be constructed as described in Tables 3 and 4 of this report.

#### 5.0 LIMITATIONS

The JM Corbond III® spray-applied foam plastic insulation described in this report complies with, or is a suitable alternative to what is specified in those codes listed in Section 1.0 of this report, subject to the following conditions:

**5.1 Installation:** The product shall be installed in accordance with the manufacturer's published installation instructions, this evaluation report and the applicable code. The more restrictive shall govern if there are any conflicts

between the manufacturer's published installation instructions and this report.

**5.2 Thermal Barrier:** JM Corbond III® insulation shall be protected by a 15-minute thermal barrier in accordance with Section 4.3 of this report except when installation complies with one or more of the following:

- (1) Exceptions specifically provided in the applicable code;
- (2) Section 4.3.2 (Application without a Prescriptive Thermal Barrier) of this report;
- (3) Section 4.4 (Attics and Crawl Spaces) of this report.

**5.3 Quality Assurance:** The A- and B-components of the insulation are produced by Johns Manville under a quality control program with inspections by IAPMO R & T Laboratory.

**5.4 Contractor Certification:** JM Corbond III® insulation shall be installed by contractors certified by SPFA or Johns Manville.

**5.5 Termite Protection:** When JM Corbond III® insulation is used in areas where the likelihood of termite infestation is "very heavy," it shall be installed in accordance with IBC Section 2603.9 (2009 IBC Section 2603.8) or IRC Section R318.4, as applicable.

**5.6 Jobsite Labeling:** Jobsite labeling and certification of the insulation shall comply with IRC Sections N1101.10 and 1101.10.1 (2012 IRC Sections 1101.12 and 1101.12.1 and 2009 IRC Sections N1101.4 and N1101.4.1) and IECC Sections C303.1.1 and C303.1.2, R303.1.1 and R303.1.2 as applicable.

**5.7 Water Vapor Retarder:** The JM Corbond III® qualifies as a Class II vapor retarder at thicknesses of 1.5 inches (38 mm) or greater as defined in IRC Section R202 and IECC Section 202.

**5.8 Construction Types:** When used in exterior walls of buildings of Type I, II, III or IV construction, application shall be as described in Section 4.5 of this report.

#### 6.0 SUBSTANTIATING DATA

**6.1** Data in accordance with ICC-ES Acceptance Criteria for Spray-Applied Foam Plastic Insulation (AC377) Approved April 2016.

**6.2** Reports on air leakage tests in accordance with ASTM E283.

**6.3** Reports on water vapor transmission tests in accordance with ASTM E96.

**6.4** Reports on Fungal Resistance tests in accordance with ASTM C1338.



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6.5 Reports on flame spread and heat release in accordance with NFPA 286.

6.6 Reports on Exterior Fire Propagation tests in accordance with NFPA 285.

6.7 Reports on Potential Heat tests in accordance with NFPA 259.

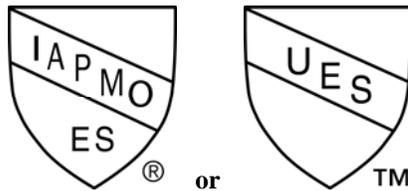
6.8 Reports on Heat Release and Flame Propagation in accordance with AC377 Appendix X.

### 7.0 IDENTIFICATION

7.1 Each component for the JM Corbond III® is identified with the following:

- Manufacturer's name (Johns Manville), address and telephone number,
- Product trade name (JM Corbond® III),
- Product density,
- Flame-spread and smoke-development indices and the name of the inspection agency (IAPMO R & T Laboratory),
- Evaluation report number (ER146), and the name of the inspection agency (IAPMO ES).

Either Mark of Conformity may be used as shown below:



IAPMO ER #146

**Brian Gerber, P.E., S.E.**  
Vice President, Technical Operations  
Uniform Evaluation Service

**Richard Beck, PE, CBO, MCP**  
Vice President, Uniform Evaluation Service

**GP Russ Chaney**  
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For additional information about this evaluation report please visit [www.uniform-es.org](http://www.uniform-es.org) or email at [info@uniform-es.org](mailto:info@uniform-es.org)



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**TABLE 1—THERMAL RESISTANCE (R-Value)<sup>1</sup>**

Thickness (Inch)	R-Value (°F.ft <sup>2</sup> .h/Btu)
1.0	7.0
2.0	14
3.0	21
3.5	24.5
4.0	28
5.0	35
5.5	38.5
6.0	42
7.0	49
8.0	56
9.0	63
10.0	70
11.0	77
12.0	84

For SI: 1 inch= 25.4 mm; 1 °F•ft<sup>2</sup>•hr/Btu =0.176110 °K•m<sup>2</sup>•hr/W.

<sup>1</sup>R-values are calculated based on tested k-factors at 1- and 4-inch thicknesses

**TABLE 2: ALTERNATE ASSEMBLIES WITHOUT A PRESCRIPTIVE THERMAL BARRIER<sup>1,2</sup>**

Coating	Max. Insulation Thickness Overhead Surfaces	Max. Insulation Thickness Vertical Surfaces	Dry Film Thickness	Wet Film Thickness (nominal)	Application Rate <sup>1</sup> (theoretical)
JM TC (aka FIRESHELL® F10E)	11.5 in. 292 mm	7.5 in. 191 mm	12 mils 0.30 mm	18 mils 0.46 mm	86 ft <sup>2</sup> /gal 2.11 m <sup>2</sup> /L
DC315	11.5 inches 292 mm	7.5 inches 191 mm	12 mils 0.30 mm	18 mils 0.46 mm	89 ft <sup>2</sup> /gal 2.18 m <sup>2</sup> /L

**Notes:**

<sup>1</sup>Theoretical coating application rates are based strictly on minimum wet film thickness requirements and shall be increased for site-specific conditions such as foam plastic surface texture, overspray loss, container and other residues, application technique and environmental conditions.

<sup>2</sup> The coatings shall be applied in accordance with the Product Data Sheet and this report in such a manner that the foam plastic is not exposed.



**TABLE 3: JM Corbond III in Wall Cavity**

WALL COMPONENTS	MATERIALS
Base wall system <sup>1</sup> (Use either 1, 2 or 3)	<ol style="list-style-type: none"> <li>1. Concrete wall</li> <li>2. Concrete masonry wall</li> <li>3. 1 layer of 5/8-inch thick Type X gypsum wallboard installed on the interior side of minimum 3 5/8 - inch deep, minimum 25- gauge equivalent thick steel studs spaced a maximum of 24 inches on center. Lateral bracing installed minimum every 4 feet vertically or as required. Wall stud cavities shall be filled at each floor line with minimum 4 lb/ft<sup>3</sup> mineral wool (e.g. JM MinWool<sup>®</sup> Safing) friction fit between steel wall studs.</li> </ol>
Perimeter Fire Barrier System	Perimeter fire barrier system complying with Section 715.4 of the 2015 IBC shall be installed, as applicable, to fill the void between the edge of the concrete floor slab and the interior surface of the exterior wall assembly (see note 1).
Interior Insulation (Use either 1,2, 3, 4, 5 or 6	<ol style="list-style-type: none"> <li>1. None</li> <li>2. Maximum 3 5/8-inch thickness of Corbond III CC SPF applied to interior surface of Base Wall System 1 and 2 (See Note 1).</li> <li>3. Full wall stud cavity depth or less of Corbond III CC SPF applied using exterior gypsum sheathing of Base Wall System 3 as the substrate and covering the width of the cavity and the inside of the steel wall stud framing flange.</li> <li>4. Fiberglass batt insulation (faced or unfaced)</li> <li>5. Mineral wool insulation (faced or unfaced)</li> <li>6. Hybrid Systems: spray foam and/or fiberglass insulation or mineral wool insulation (flash and bat insulation systems)</li> </ol>
Exterior sheathing	5/8-inch thick Type X exterior gypsum sheathing (for Base Wall System 3 above)
Exterior Wall Covering <sup>2</sup>	Any non-combustible exterior wall covering material using any standard installation technique
Window Closure	Minimum 0.08-inch thick aluminum, or equivalent
Flashing of window, door and other exterior wall penetrations	As an option, flash around window, door and other exterior penetrations with limited amounts of maximum 12-inch wide flashing tape (acrylic, asphalt or butyl-based) or liquid applied membrane material with or without fiber mesh reinforcement.

For SI: 1 inch= 25.4 mm; 1.0 pcf =16 kg/m<sup>3</sup>

Notes:

<sup>1</sup> Fireblocking per IBC Section 718 (2009 IBC Section 717) and thermal barrier material requirements must be met for Base Wall Systems 1 and 2, as required by specific wall construction details when combustible concealed space is created on interior side of exterior wall assembly.

<sup>2</sup> Non-combustible exterior wall coverings shall be installed in accordance with manufacturer’s installation requirements.



**TABLE 4: CORBOND III INSTALLED ON THE EXTERIOR OF THE WALL ASSEMBLY**

WALL COMPONENTS	MATERIALS
Base wall system <sup>1</sup> (Use either 1, 2 or 3)	<ol style="list-style-type: none"> <li>1. Concrete wall</li> <li>2. Concrete masonry wall</li> <li>3. 1 layer of 5/8-inch thick Type X gypsum wallboard installed on the interior side of minimum 3 5/8 - inch deep, minimum 25-gauge equivalent thick steel studs spaced a maximum of 24 inches on center. Lateral bracing installed minimum every 4 feet vertically or as required. Wall stud cavities shall be filled at each floor line with minimum 4 lb/ft<sup>3</sup> mineral wool (e.g. JM MinWool<sup>®</sup> Safing) friction fit between steel wall studs.</li> </ol>
Perimeter Fire Barrier System	Perimeter fire barrier system complying with Section 715.4 of the 2015 IBC shall be installed, as applicable, to fill the void between the edge of the concrete floor slab and the interior surface of the exterior wall assembly (see note 1).
Interior Insulation (Use either 1,2, 3, 4, 5 or 6	<ol style="list-style-type: none"> <li>1. None</li> <li>2. Maximum 3 5/8-inch thickness of Corbond III CC SPF applied to interior surface of Base Wall System 1 and 2 (See Note 2).</li> <li>3. Full wall stud cavity depth or less of Corbond III CC SPF applied using exterior gypsum sheathing of Base Wall System 3 as the substrate and covering the width of the cavity ad the inside of the steel wall stud framing flange.</li> <li>4. Fiberglass batt insulation (faced or unfaced)</li> <li>5. Mineral wool insulation (faced or unfaced)</li> <li>6. Hybrid Systems: spray foam and/or fiberglass insulation or mineral wool insulation (flash and bat insulation systems)</li> </ol>
Exterior Sheathing (Use either 1, 2 or 3)	<ol style="list-style-type: none"> <li>1. None (for Base Wall Systems 1 or 2 above)</li> <li>2. 1/2-inch thick glass mat exterior gypsum sheathing complying with ASTM C1177 (for Base Wall System 3 above)</li> <li>3. 5/8-inch thick Type X exterior gypsum sheathing (for Base Wall System 3 above)</li> </ol>
Exterior Insulation	Maximum 3 1/2-inch thickness of Corbond III CC SPF
Exterior Wall Covering (Use either 1, 2, 3, 4 or 5)	<ol style="list-style-type: none"> <li>1. Brick – Standard type brick veneer anchors, installed a maximum of 24 inches on center, vertically on each stud with maximum 1-inch air gap between exterior insulation and brick. Brick to be standard nominal 4-inch thck clay brick installed in a running bond pattern using Type S mortar.</li> <li>2. Stucco – Minimum 3/4-inch thick, exterior cement plaster and lath. A secondary water-resistive barrier (WRB) can be installed between the exterior insulation and the lath. The secondary WRB shall not be full-coverage asphalt or butyl-based self-adhered membranes.</li> <li>3. Minimum 2-inch thick natual stone (granite, limestone, marble, sandstone). Any standard non-open jointed installation technique can be used.</li> <li>4. Minimum 1 1/2-inch thick concrete masonry unit (CMU), precast concrete, or artificial cast stone. Any standard non-open jointed installation technique can be used.</li> <li>5. Minimum 1 1/4-inch thick Terra Cotta non-opened jointed. Any standard non-open jointed installation technique can be used.</li> </ol>
Window Closure	Minimum 1-gauge steel flashing, or equivalent



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Flashing of window, door and other exterior wall penetrations	As an option, flash around window, door and other exterior penetrations with limited amounts of maximum 12-inch wide flashing tape (acrylic, asphalt or butyl-based) or liquid applied membrane material with or without fiber mesh reinforcement.
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For SI: 1 inch= 25.4 mm; 1.0 pcf =16 kg/m<sup>3</sup>

Note:

<sup>1</sup> Fireblocking per IBC Section 718 (2009 IBC Section 717) and thermal barrier material requirements must be met for Base Wall Systems 1 and 2, as required by specific wall construction details when combustible concealed space is created on interior side of exterior wall assembly.

**TABLE 5: ALTERNATE IGNITION BARRIERS**

Coating/Cover	Max. Insulation Thickness Overhead Surfaces	Max. Insulation Thickness Vertical Surfaces	Dry Film Thickness	Wet Film Thickness (nominal)	Application Rate (nominal)
JM IC Ignition Barrier Coating (aka Fireshell® IB4)	5½ inches 140 mm	3½ inches 89 mm	3 mils 0.08 mm	4 mils 0.1 mm	345 ft <sup>2</sup> /gal 8.3 m <sup>2</sup> /L
JM Spider®	10 inches 254 mm	8 inches 203 mm	2.5 inches 64 mm	NA	NA

Notes: NA = Not Applicable