



EVALUATION SUBJECT: JM Corbond® ocx SPF

REPORT HOLDER:
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CSI Division: 07 00 00 THERMAL AND MOISTURE PROTECTION

CSI Section: 07 21 00 Thermal Insulation

1.0 SCOPE OF EVALUATION

1.1 Compliance to the following codes & regulations:

- 2012, 2009 and 2006 International Building Code® (IBC®)
- 2012, 2009, 2006 International Residential Code® (IRC®)
- 2012, 2009 and 2006 International Energy Conservation Code® (IECC®)

1.2 Evaluated in accordance with:

- ICC-ES AC377, approved November 2012

1.3 Properties assessed:

- Surface-burning characteristics
- Physical properties
- Thermal resistance
- Use in attics and crawl spaces

2.0 PRODUCT USE

JM Corbond® ocx SPF spray foam plastic is used as a nonstructural thermal insulating material in Type VB construction under the IBC and dwellings under the IRC. The insulation complies with IBC Section 2603, IRC Section R316, and IECC Sections C402 and R402.

3.0 PRODUCT DESCRIPTION

3.1 JM Corbond® ocx SPF Insulation:

JM Corbond® ocx SPF is a spray-applied, open cell polyurethane foam plastic insulation having a nominal density of 0.5 pounds per cubic foot (8 kg/m³).

3.2 Surface Burning Characteristics

3.2.1 The JM Corbond® ocx SPF foam plastic insulation, at a maximum thickness of 4 inches (102 mm) and a nominal density of 0.5 pounds per cubic foot (8.0 kg/m³), has a flame

spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84.

3.2.2 Thicknesses are limited to 4 inches (102 mm) maximum for ceiling cavities and wall cavities when covered by a prescriptive thermal barrier (minimum ½ inch (12.7 mm) thick gypsum wallboard) installed in accordance with the IBC or IRC. Thicknesses of up to 11.5 inches (292 mm) for ceiling cavities and 7.5 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: For uses in accordance with the IECC or other codes, JM Corbond® ocx SPF foam plastic insulation has a thermal resistance, (R-value), at a mean temperature of 75° F (24° C) as shown in Table 1 of this report.

3.4 Intumescent Coatings: DC 315: DC 315 intumescent coating and DC315 Primer are manufactured by International Fireproof Technology Inc., and are water-based coatings supplied in 5-gallon (19 L) pails and 55-gallon (208 L) drums. The DC 315 coating and primer both have a maximum shelf life of 12 months when stored in factory-sealed containers at temperatures between 50°F (10°C) and 90°F (32°C).

4.0 DESIGN AND INSTALLATION

4.1 General: JM Corbond® ocx SPF spray-applied foam plastic insulation shall be installed in accordance with the manufacturer's published installation instructions and this report. A copy of these instructions and this evaluation report shall be available on the jobsite at all times during installation. Where conflicts occur, the more restrictive shall govern.

4.2 Application: JM Corbond® ocx SPF shall be applied using spray equipment specified by Johns Manville.

4.3 Thermal Barrier

4.3.1 Application with a Prescriptive Thermal Barrier: JM Corbond® ocx SPF insulation at a maximum 4-inch (102 mm) thickness in ceiling cavities and in wall cavities shall be separated from the interior of the building by a thermal barrier. The IBC and IRC specify an approved thermal barrier of 1/2 -inch thick (12.7 mm) gypsum wallboard or equivalent 15-minute thermal barrier complying with IBC Section 2603.4 or IRC Section R316.4 as applicable and installed in accordance with applicable code.

4.3.2 Application without a Prescriptive Thermal Barrier: JM Corbond® ocx SPF insulation shall permitted



to be installed without a prescriptive thermal barrier when coated on all exposed surfaces with DC315 Primer and DC315 intumescent coating. The DC315 Primer shall be applied to a minimum wet film thickness of 4 mils (0.102 mm) and allowed to cure in accordance with the International Fireproof Technology's installation instructions and this report.

The DC315 intumescent coating is applied to the primed insulation surface at a 1.0 gal/ 100 ft² (0.4 L/m²) theoretical application rate and shall yield a minimum of 16 mils wet film thickness, 11 mils dry film thickness. The maximum thickness of the spray foam insulation is limited to 7.5 inches (190 mm) on vertical surfaces and 11.5 inches (292 mm) on overhead surfaces. Primer and coating shall be applied in accordance with International Fireproof Technology's installation instructions and this report. Where conflicts occur, the more restrictive shall govern. Surfaces to be coated shall be dry, clean, and free of dirt, loose debris and other substances. The primer and coating shall be applied in one coat with low-pressure airless spray equipment.

4.4 Attics and Crawl Spaces

When installing JM Corbond[®] ocx SPF in attics and/or crawl spaces and a thermal barrier is not required in accordance with IBC Section 2603.4.1.6 or IRC Sections R316.5.3 or R316.5.4, installation shall comply with either Sections 4.4.1 or 4.4.2 of this report.

4.4.1 Application with a Prescriptive Ignition Barrier:

When JM Corbond[®] ocx SPF insulation is installed within attics and crawl spaces where entry is made only service of utilities, an ignition barrier shall be installed in accordance with IBC Section 2603.4.1.6 or IRC Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier shall be consistent with the construction type of the building.

4.4.2 Application without a Prescriptive Ignition

Barrier: Where the spray-applied insulation is installed in accordance with Section 4.4.2.1 or 4.4.2.2, the following conditions apply:

- a) Entry to the attic or crawl space is only to service utilities, and no storage is permitted.
- b) There are no interconnected attic or crawl space areas.
- c) Air in the attic or crawl space is not circulated to other parts of the building.
- d) 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 IRC. Under-floor (crawl space) ventilation is

provided when required by IBC Section 1203.3 or IRC Section R408.1, as applicable.

- e) The foam plastic insulation is limited to the maximum thickness and density tested as described in Section 3.2.1 of this report.
- f) Combustion air is provided in accordance with Sections 701 and 703 (2006 IMC) and Section 701 (2012 and 2009 IMC).
- g) The installed coverage rate or thickness of coatings, if part of the insulation system, shall be equal to or greater than that specified in Section 4.4.2.1.

4.4.2.1 Attics and Crawl Spaces: JM Corbond[®] ocx SPF

spray foam plastic insulation shall be permitted to be spray-applied without a prescriptive ignition barrier to the underside of the roof deck to thicknesses not exceeding 11.5 inches (292 mm) and/or vertical surfaces to thicknesses not exceeding 7.5 inches (190 mm), as described in this section. When JM Corbond[®] ocx SPF is installed as described in this section, no ignition barrier or coating is required.

Alternative: JM Corbond[®] ocx SPF insulation may be

covered on all exposed surfaces. The DC315 Primer shall be applied to a minimum wet film thickness of 4 mils (0.102 mm) and allowed to cure in accordance with the International Fireproof Technology's installation instructions and this report. The DC 315 intumescent coating has an application as described in Section 3.4 at a rate of 0.25 gal/100 ft² (0.10 L/m²) theoretical application rate, yielding a minimum of 16 mils (0.102 mm) wet film thickness and 11 mils (0.076 mm) dry film thickness. DC315 intumescent coating shall be applied in accordance with International Fireproof Technology's installation instructions and this report. Where conflicts occur, the more restrictive shall govern. Surfaces to be coated shall be dry, clean, and free of dirt, loose debris and other substances. The coating shall be applied in one-coat with low-pressure airless spray equipment.

4.4.2.2 Use on Attic Floors: JM Corbond[®] ocx SPF

insulation shall be permitted to be installed exposed (no coating), without an ignition barrier up to a maximum thickness of 11 ½ inches (292 mm) between and over the joist in attic floors. The insulation shall be separated from the interior of the building by an approved thermal barrier complying with IBC Section 2603.4 or IRC Section R306.4. The ignition barrier required by IBC Section 2603.4 and IRC Section R316.5.3 may be omitted in this case.

5.0 LIMITATIONS

The JM Corbond[®] ocx SPF spray foam 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 The insulation and coating products shall be installed in accordance with the manufacturer's published installation instructions, this evaluation report and the applicable code. Where conflicts occur, the more restrictive shall govern.

5.2 JM Corbond® ocx SPF insulation shall be protected by a 15 minute thermal barrier in accordance with Section 4.3.1 of this report except when installation complies with Sections 4.3.2 (Application without a Prescriptive Thermal Barrier) and/or 4.4 (Attics and Crawl Spaces) of this report.

5.3 The A and B components of the insulation are produced under a quality control program with inspections by IAPMO Uniform ES.

5.4 JM Corbond® ocx SPF insulation shall be installed by contractors certified by SPFA and/or Johns Manville.

5.5 When JM Corbond® ocx SPF insulation is used in areas where in the likelihood of termite infestation is "very heavy," it shall be installed in accordance with 2009 IBC Section 2603.8 or IRC Section R318.4, as applicable.

5.6 Jobsite labeling and certification of the insulation shall comply with IRC Sections N1101.4 and N1101.4.1 and IECC Sections 303.1.1 and 303.1.2 as applicable.

5.7 Where applicable, JM Corbond® ocx SPF shall be installed with a vapor retarder in accordance with the applicable code.

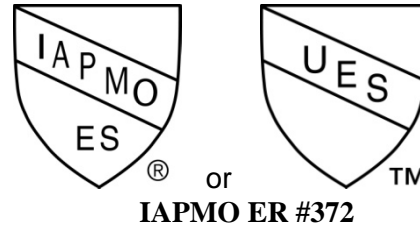
5.8 Use of JM Corbond® ocx SPF insulation under this report is limited to Construction Type VB.

6.0 SUBSTANTIATING DATA

6.1 Data and test reports submitted are from laboratories in compliance with ISO/IEC 17025 and in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation, (AC377), dated November 2012, including reports of tests in accordance with Appendix X of AC 377.

7.0 IDENTIFICATION

Containers of JM Corbond® ocx SPF components are identified with a label bearing the Johns Manville name, address; the product trade name (JM Corbond® ocx SPF, Grade S, W, AS or AW); the lot number; the flame spread and smoke developed indices; mixing instructions; density; the shelf life; the expiration date; and the IAPMO Uniform ES Evaluation Report number (UER-372).



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For additional information about this evaluation report please visit www.uniform-es.org or email at info@uniform-es.org

Table 1—Thermal Resistance (R-Values)¹

Thickness (inch)	R-Value (°F•ft ² •hr/Btu)
1.0	3.7
4.0	14
7.5	27
11.5	41

SI: 1 inch = 25.4 mm; 1 °F•ft²•hr/Btu = 0.176 °K•m²•hr/W

¹R-values are calculated based on tested k-factors at 1- and 4-inch thicknesses.