



TOWN OF TRUCKEE
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING AND SAFETY DIVISION

Corbond III Performance Insulation

PURPOSE: To approve the use of Corbond III Performance Insulation.

COMMENTS:

Corbond III is a spray applied closed cell polyurethane foam plastic insulation. At a minimum thickness of 1.5 inches, the insulation has a vapor permeance of less than one. For this reason, it may be used without a vapor retarder required by the code.

When installed in accessible attics and crawl spaces Corbond III shall be protected with a prescriptive ignition barrier such as 1.5 inches of mineral fiber insulation, 0.25 inch thick structural panels, particleboard or hardboard or gypsum wallboard.

Corbond III must be separated from interior occupied spaces by an approved thermal barrier.

When installed in accordance with IAPMO Evaluation Report 0146, Corbond III is an approved material for use within the Town of Truckee.

CORBOND® III

Spray Insulation System

Technical Data Sheet

Typical Physical Properties

	ASTM Method	CORBOND® III
Nominal Density	D-1622	2.0 lb/cu. ft.
Compressive strength (1")	D-1621	25 psi
Compressive Strength (3")	D-1621	20 psi
Closed Cell Content	D-1940	>90%
K Factor	C-518 (initial)	0.15
	(aged)	0.16 C-1029-07 (180 day)
R Factor	C-518 (initial)	6.6
	(aged)*	6.2 C-1029-07 (180 day)
Water Absorption	D-2842	0.020 (gm/cc)
Water Vapor Transmission	E-96	0.61 perms @ 1.5"
Air Infiltration	E-283-04	75 Pa 0.001 L/S/m ² (1.57 psf) (<0.001 cfm/ft ²) 300 Pa 0.001 L/S/m ² (6.24 psf) (<0.001 cfm/ft ²)
Air Permeance	E-2178-03	75 Pa 0.000055 L/S.m ² .Pa 0.000117 ft ³ /min.m ² .Pa 300 Pa 0.000024 L/S.m ² .Pa 0.000051 ft ³ /min.m ² .Pa
Sound Transmission Coefficient (STC) 2 x 4 wood stud, 16" on centers, 2.76" of CORBOND®, 15/32" exterior OSB sheathing, ½" gypsum wallboard.	E-90-90 & E413-87	36 (STC)
Recycled Content		16.5%

NOTES:

- This information is intended only as a guide for design purposes. The values shown are the average values obtained from sprayed laboratory samples. The test methods were performed per the ASTM Book of Standards.
- K Factor varies depending on age and use conditions.

* Aged 180 days per Federal Trade Commission 16CFR Part 460

The information herein is to assist customers in determining whether our products are suitable for their applications. We request that customers inspect and test our products before use and satisfy themselves as to content and suitability. Our products are intended for sale to industrial and commercial customers for processing. We warrant that our products will meet our written specifications. Nothing herein shall constitute any other warranty express or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. The exclusive remedy for all proven claims is replacement of raw materials and in no event shall we be liable for special, incidental or consequential damages.

EVALUATION REPORT



Report Number: 0146

Issued: 07/2009

Expires: 07/2010

DIVISION: 07—THERMAL AND MOISTURE PROTECTION

Section: 07210—Building Insulation

REPORT HOLDER:

CORBOND CORPORATION

32404 FRONTAGE ROAD

BOZEMAN, MT 59715

(406) 586-4585

www.corbond.com

EVALUATION SUBJECT:

CORBOND® III PERFORMANCE INSULATION®

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)
- 2006 *International Energy Conservation Code*® (IECC)

1.2 Evaluated in accordance with:

- ICC AC 377 Dated May 2008

Property evaluated:

- Surface burning characteristics
- Thermal performance (R-value)
- Physical properties
- Air Infiltration
- Vapor Permeance
- Fungal Resistance

2.0 USES

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. It may be used in buildings of Type V-B construction per the IBC, and residential structures constructed in accordance with the IRC.

3.0 DESCRIPTION

3.1 Product Information:

3.1.1 CORBOND® III is a two component, spray applied, medium-density, closed cell polyurethane foam plastic insulation system having a nominal density of 2.0 pcf (32 kg/m³). It is generated by combining the isocyanate (part A) and a polymeric resin (part B) through a dual component proportioner, on site, by factory trained and certified contractors. All materials should be stored in their original containers, kept out of direct sunlight and away from heat and moisture, especially after the seals have been broken and the containers have been opened. Shelf life is 3 months when unopened and stored indoors at a temperature between 60°F (16°C) and 70°F (21°C).

3.1.2 The part A isocyanate is red in color and the part B polymeric resin is blue in color which when properly mixed and applied yields a Lavender® finished foam insulation product. The Lavender® color is a Federal Registered Trademark color for CORBOND® III

3.2 Surface Burning Characteristics:

3.2.1 CORBOND® III, when tested in accordance with ASTM E-84, at a maximum thickness of 6 inches (152 mm), and a nominal 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.

3.3 Thermal Resistance, R-Values:

3.3.1 Refer to Table 1 for the values of thermal resistance (R-Value) for various thicknesses.

3.4 Vapor Retarder:

3.4.1 CORBOND® III, when tested in accordance with Procedure A of ASTM E96, has a vapor permeance of less than 1 perm (5.7 x 10⁻¹¹ kg/Pa-s-m²) at a minimum thickness of 1.5 inches (38.1 mm), and may be used where a vapor retarder is required by the code and qualifies as a vapor retarder as defined in IBC Section 202, IRC Section R202 and IECC Section 202.

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3.5 Air Permeability:

3.5.1 CORBOND® III, when tested in accordance with ASTM E283 is air-impermeable when installed at 1.5 inch (38.1 mm) thickness or greater.

3.6 Fungal Resistance:

3.6.1 CORBOND® III, when tested in accordance with ASTM C1338 exhibits no fungal growth.

4.0 INSTALLATION

4.1 General:

4.1.1 CORBOND® III shall be installed in accordance with the manufacturer's installation instructions, the applicable code and this report. The installation instructions and this report shall be available on the jobsite during installation.

4.2 Application:

4.2.1 CORBOND® III shall be installed by spray application using a dual component, volumetric, positive displacement pump to combine A and B components in a one to one volumetric ratio, as specified in the manufacturer's installation instructions.

4.2.2 CORBOND® III shall not be applied to areas where the maximum service temperature is greater than 180°F (82°C). CORBOND® 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. CORBOND® III shall not be applied in electrical outlets, junction boxes, to substrates over 110°F (43°C), or in direct contact with water and must be protected from the weather during and after application.

4.2.3 CORBOND® III may be applied in passes of uniform thickness from a minimum of ½ inch (13mm) to a maximum of 3 inches (76mm) per pass. The total thickness shall be as specified in Sections 3.2.1, 4.4, 4.5, 4.6, and 4.7. 'Flash' passes or a thin pass of less than 1" on cold surfaces is to be avoided and may result in loss of adhesion of subsequent passes. Thicknesses over 3 inches (76mm) require multiple passes.

CORBOND® III, must be allowed to cure and cool between each pass.

4.2.4 When CORBOND® III is used in conjunction with wood construction, in jurisdictions that have adopted the IRC, and where termite infestation is "very heavy" as determined in accordance with IRC figure 301.2(6), the foam plastic shall be installed in accordance with IRC section R320.4.

4.3 Thermal Barrier:

CORBOND® III shall be separated from the interior of the building by a 15 minute thermal barrier such as 1/2" thick gypsum wallboard or an equivalent approved thermal barrier. The thermal barrier shall comply with, and be installed in accordance with IRC Section R314.4, or IBC Section 2603.4, as appropriate. See Sections 4.4, 4.5, 4.6, and 4.7 for requirements when installed in attics, crawl spaces or sill plates and headers.

4.4 Attics:

4.4.1 CORBOND® III may be installed in unvented conditioned attics and unvented cathedral ceilings in accordance with IRC section R806.4 and IECC Section 502.5 provided the CORBOND® III is applied in a thickness of 1.5 inches (38.1 mm) or more, and is applied in direct contact with the underside/interior of the structural roof deck. The CORBOND® III must be separated from the interior occupied area of the building by an approved thermal barrier in accordance with Section 4.3.

4.4.2 Application with prescriptive ignition barrier:

4.4.2.1 CORBOND® III may be installed in attics at a maximum thickness of 6 inches (152mm) in accordance with IBC Section 2603.4.1.6 or IRC Sections R314.5.3 and, as applicable, with a prescriptive ignition barrier under the following conditions:

- Entry to the attic is limited to service of utilities, mechanical and electrical systems and the incidental access by the owner.
- The CORBOND® III shall be protected



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against ignition by 1.5-inch-thick (38mm) mineral fiber insulation; 0.25-inch-thick (6.4 mm) wood structural panel, particleboard or hardboard; 0.375-inch (9.5mm) gypsum wallboard, corrosion-resistant steel having a base metal thickness of 0.016 inch (0.4mm), or other approved material installed in such a manner that the CORBOND® III is not exposed. The protective covering shall be consistent with the requirements for the type of construction.

The CORBOND® III must be separated from the interior occupied area of the building by an approved thermal barrier in accordance with Section 4.3.

4.4.3 Application without a prescriptive ignition barrier:

4.4.3.1 CORBOND® III may be installed in inaccessible attics without an ignition barrier. The CORBOND® III must be separated from the interior occupied area of the building by an approved thermal barrier in accordance with Section 4.3.

4.5 Attic Floors:

4.5.1 Application with prescriptive ignition barrier:

4.5.1.1 CORBOND® III may be installed between and over joists in accessible attic floors at a maximum thickness of 6 inches (152mm) in accordance with IBC Section 2603.4.1.6 or IRC Sections R314.5.3 and, as applicable, with a prescriptive ignition barrier, under the following conditions:

- Entry to the attic is limited to service of utilities, mechanical and electrical systems and the incidental access by the owner.
- The CORBOND® III shall be protected against ignition by 1.5-inch-thick (38mm) mineral fiber insulation; 0.25-inch-thick (6.4 mm) wood structural panel, particleboard or hardboard; 0.375-inch (9.5mm) gypsum wallboard, corrosion-resistant steel having a base metal thickness of 0.016 inch (0.4mm), or other approved material installed in such a manner that the CORBOND® III is not exposed. The protective covering shall be

consistent with the requirements for the type of construction.

The CORBOND® III must be separated from the interior occupied area of the building by an approved thermal barrier in accordance with Section 4.3.

4.5.2 Application without a prescriptive ignition barrier or thermal barrier:

4.5.2.1 CORBOND® III may be installed exposed between and over joists in inaccessible attics and attic floors without an ignition barrier, at a maximum thickness of 6 inches (152mm). The CORBOND® III must be separated from the interior occupied area of the building by an approved thermal barrier in accordance with Section 4.3.

4.6 Crawl Spaces:

4.6.1 Application with prescriptive ignition barrier:

4.6.1.1 CORBOND® III may be installed in crawl spaces at a maximum thickness of 6 inches (152mm) in accordance with IBC Section 2603.4.1.6 or IRC Sections R314.5.4, as applicable, with a prescriptive ignition barrier under the following conditions:

- Entry to the crawl space is limited to service of utilities, mechanical and electrical systems and the incidental access by the owner.
- The CORBOND® III shall be protected against ignition by 1.5-inch-thick (38mm) mineral fiber insulation; 0.25-inch-thick (6.4mm) wood structural panel, particleboard or hardboard; 0.375-inch (9.5mm) gypsum wallboard, corrosion-resistant steel having a base metal thickness of 0.016 inch (0.4mm) or other approved material installed in such a manner that the CORBOND® III is not exposed. The protective covering shall be consistent with the requirements for the type of construction.

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The CORBOND® III must be separated from the interior occupied area of the building by an approved thermal barrier in accordance with Section 4.3.

4.6.2 Application without a prescriptive ignition barrier or thermal barrier:

4.6.2.1 CORBOND® III may be installed exposed in inaccessible crawl spaces without an ignition barrier, at a maximum thickness of 6 inches (152mm). The CORBOND® III must be separated from the interior occupied area of the building by an approved thermal barrier in accordance with Section 4.3.

4.7 Sill Plates and Headers:

4.7.1 Application without a prescriptive ignition barrier or thermal barrier:

4.7.1.1 CORBOND® III may be installed exposed on sill plates and headers without a thermal barrier, or ignition barrier, in accordance with IBC Section 2603.4.1.13 and IRC Section R314.5.11 subject to the following:

- The maximum thickness of the CORBOND® III shall be 3 ¼ inches (83mm).

5.0 CONDITIONS OF USE

5.1 The CORBOND® III Performance Insulation System® described in this report complies with, or is a suitable alternative to what is specified in the codes listed in Section 1.0 of this report.

5.1.1 When required by the code official, this evaluation report, and the manufacturers most recently published installation instructions shall be submitted at the time of permit application.

5.1.2 CORBOND® III must be installed in accordance with this report, the applicable codes, and the manufacturer's installation instructions. If there are any conflicts among these documents, this report shall prevail.

5.1.3 CORBOND® III shall be separated from interior living spaces of the building by an approved 15 minute thermal barrier.

5.1.4 The thickness of CORBOND® III as installed shall not exceed those noted in sections 3.2.1, 4.4, 4.5, 4.6, and 4.7 of this report.

5.1.5 CORBOND® III shall be protected from the weather after installation.

5.1.6 Installation of CORBOND® III in areas where the probability of termite infestation is "very Heavy" as determined in accordance with IBC Figure 2603.8 or IRC Figure R301.2, shall be in accordance with IBC Section 2603.8 or IRC Section R320.5 as applicable.

5.1.7 Installation of CORBOND® III shall be by contractors certified by CORBOND Corporation.

5.1.8 CORBOND® III is limited to use in dwellings under the IRC, and type V-B construction under the IBC.

5.1.9 CORBOND® III is produced by CORBOND Corporation under a quality control system, including periodic inspections.

5.1.10 Jobsite certification and labeling of the components A and B must comply with IRC Sections N1101.4 and N1101.4.1 and IECC sections 102.1.1 and 102.1.11 as applicable.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with ICC-ES Acceptance Criteria for Spray-Applied Foam Plastic Insulation (AC377), dated May 2008.

6.2 Reports on air leakage tests in accordance with ASTM E 283.

6.3 Reports on water vapor transmission tests in accordance with ASTM E 96.

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

7.0 IDENTIFICATION

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

- Manufacturer's name (CORBOND Corporation), address and telephone number,
- Product trade name (CORBOND® III),
- Product density,

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- Flame-spread and smoke-development indices and the name of the inspection agency (Quality Auditing Institute, Ltd.),
- Evaluation report number (IAPMO-0146), and the name of the inspection agency (IAPMO ES).



A handwritten signature in black ink, appearing to read 'Dennis Miller'.

Director of Evaluation Services

TABLE 1—THERMAL RESISTANCE (R-Value)

CORBOND [®] III	
Thickness (Inch)	R-Value (°F.ft ² .h/Btu)
1.0	5
2.0	11
3.0	19
3.5	22
4.0	25
5.0	31
5.5	34
6.0	38