Johns Manville
A Berkshire Hathaway Company

BUILDING INSULATION

JM IV HFO

Corbond® Closed Cell SPF

ESR # IAPMO ER 980

DATA SHEET

DESCRIPTION

JM IV HFO closed-cell spray polyurethane foam (SPF) is a next generation HFO blown, two-component, medium-density, Class 1 rated, SPF insulation system. JM IV HFO is designed to insulate commercial, residential, and industrial buildings. The HFO technology allows JM IV HFO to be produced with a Global Warming Potential (GWP) of less than one and with an Ozone Depletion Potential (ODP) of zero.

RECOMMENDED USES

- Walls (exterior and interior)
- Floors
- Ceilings
- Unvented attics
- Vented attics
- Crawlspaces

PERFORMANCE ADVANTAGES

- Improves energy efficiency
- Provides an effective air barrier
- Increases racking strength
- Exceptional adhesion
- Minimizes sound transmission

PHYSICAL PROPERTIES

Property	Test Method	Value
R-Value per inch	ASTM C518	7.2 (°F•ft²•h/BTU)
R-Value at 3"		21 (°F•ft²•h/BTU)
Core Density	ASTM D1622	2.0 lb/ft³
Compressive Strength	ASTM D1621	>25 psi
Closed-cell Content	ASTM D2856	> 90%
Water Absorption	ASTM D2842	< 2% by volume
Water Vapor Permeance	ASTM E96	0.98 perms at 1.1"
Air Impermeable	ASTM E283	< 0.02 (L/s-m2) at 1"
Dimensional Stability	ASTM D2126	<9%
Tensile Strength	ASTM D1623	46 PSI
Fungal Resistance	ASTM C1338	Pass, no growth
Emissions	ASTM D8485	1 Hour re-entry for trades only.

FLAMMABILITY CHARACTERISTICS*

Property	Test Method	Value
Flame Spread Index	ASTM E84	Class I < 25
Smoke Developed Index		Class I < 450
Commercial Fire Resistance	NFPA 285	Assembly Passed
No Burn Spray Seal Thermal Barrier	NFPA 286	Assembly Passed
DC 315 Thermal Barrier		
Attics & Crawl Space Walls & Roof Uncoated Thickness	AC377 Appendix X	Pass

* These items are provided as general information only. They are approximate values and are not part of the product specifications.

HEALTH AND SAFETY

For information on Health and Safety, refer to Johns Manville Safety Data Sheets and the Spray Polyurethane Foam Alliance Health and Safety guidance documents at https://spraypolyurethane.org.

APPROVALS / COMPLIANCES

- International Building Code (IBC) Types V Construction
- 2024, 2021,2018, 2015, 2012, 2009 International Residential Code (IRC)
- 2024, 2021,2018, 2015, 2012, 2009 International Energy Conservation Code (IECC)
- IAPMO ER 980
- ASTM C1029 (Type II), Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation
- Appendix X approval for application in unoccupied attics and crawl spaces without a prescriptive ignition barrier or coating
- Meets ICC-ES AC377 Acceptance Criteria for Spray-Applied Foam Plastic Insulation VOC Emission Testing Compliance
- JM IV HFO has zero Ozone Depletion Potential (ODP) and less than one Global Warming Potential (GWP)

REOCCUPANCY

- All occupants must vacate the building or the spray area must be cordoned off and remain separated from the occupied space for 24 hours after application
- The application area should be properly ventilated during application and for 24 hours post application
- Re-entry time for non-SPF trade workers: 1 hour ventilated at 10 ACH
- Re-entry time for building occupants: 24 hours

PACKAGING

- 55 Gallon Drum (1,000 lbs per set)

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The Installation Guide and the Side A and Side B Safety Data Sheets must be read prior to product application.

SUGGESTED PROCESSING PARAMETERS

Drum Storage Temperature	50° – 80°F (10° – 27°C)
Drum Temperature During Application	60° – 80°F (16° – 27°C)
Proportioner Preheat Temperature	Side A 110° – 135°F (43° – 57°C) Side B 110° – 135°F (43° – 57°C)
Hose Temperature	110° – 140°F (43° – 60°C)
Surface Temperature (Summer)	50° – 120°F (9°– 49°C)
Surface Temperature (Winter)	30° – 70°F (-4° – 21°C)
Viscosity at 75°F	A: 180-200 cps B: 550-650 cps

The initial settings are a guideline and ambient and substrate temperatures may require settings outside of the suggested range. Under no circumstances should a temperature of 140°F be exceeded without first contacting a JM technical representative.

STORAGE AND SHELF LIFE

JM IV HFO Side A and Side B should be stored between 50 – 80°F. Side A has a 12-month shelf life, and Side B has a 6-month shelf life when properly stored.

DRUM TEMPERATURE

Material will perform better if applied when environmental temperatures fall between 65°– 80°F (18° – 27°C). If environmental temperatures fall outside this range, we recommend drums be placed in a room that is between 60°– 80°F (16° – 27°C) for two days to acclimate to ensure coverage is optimized. Drum temperatures should never exceed 90°F. Caution: Never attempt to open a B side drum that is above 85°F without first cooling back to the acceptable in-use temperatures.

MIXING / RECIRCULATION

JM IV HFO should NOT be mixed or recirculated. Mixing or recirculating JM IV HFO will lead to loss of blowing agent.

HUMIDITY

Care should be taken if the relative humidity is greater than 85%. Excessive humidity will adversely affect system performance and physical properties.

PRESSURE SETTINGS

The finished foam properties are affected by both temperature and pressure settings. The goal of 1100 psi minimum at the gun when the trigger is pulled is an important part of proper mix. If your equipment monitors the pressure at the gun, set the pressure to 1100 psi. If your equipment monitors the pressure at the machine, you will need to account for pressure drop as the material travels through the hose. This pressure drop can vary depending on several parameters, however, most installers use the rule of thumb that pressure drop is equal to 1 psi per foot of hose. Therefore, set the pressure at the machine so that when you pull the trigger, the pressure maintained is the target gun pressure (1100 psi) plus the pressure drop across the hose length. For example, a machine with 260 feet of hose should have a dynamic spray pressure of 1360 psi (1100 + 260).

PASS THICKNESS

JM IV HFO may be applied in a single pass from a minimum of 0.5" to a maximum of 3.0". Multiple immediate passes, with no wait time, may also be applied as follows:

R-Value	R-28	R-35	R-42
Number of Immediate Passes	2	3	4
Thickness per Pass (in)	2.0 / 2.0	1.7 / 1.7 / 1.7	1.5 / 1.5 / 1.5 / 1.5
Maximum Total Thickness (in)	4.0	5.0	6.0

Ambient temperature must be at least 40°F for multiple immediate pass installation. For application thicknesses above 6", wait 30 minutes between passes (e.g. for a 6" total thickness, install two 3" lifts waiting 30 minutes between the passes).

SHUT DOWN

For breaks in application longer than 60 minutes:

1. Park the proportioner according to the manufacturer's instructions.
2. Close the fluid shut off valves on the gun and grease the spray gun according to the manufacturer's instructions when applicable.

PARTIAL DRUM POUR-UP

Residual materials should be properly handled and transferred to a new drum immediately and used within 3-5 days. Collecting multiple partially full drums to combine later is not a recommended practice and may result in poor quality foam.