

GreenSeal 3.0 HFO



Overview

GreenSeal 3.0 HFO is a sprayed-in-place, nominal 70 psi compressive strength, rigid, HFO-blown, closed-cell spray polyurethane foam (SPF) roofing system. This two-component SPF consists of GreenSeal 3.0 HFO B Component resin and GreenSeal A Component. GreenSeal 3.0 HFO provides an R-value of 6.7 per inch and a continuous insulation without thermal breaks. GreenSeal 3.0 HFO SPF roofing systems provide excellent wind uplift resistance, are self-flashing and seamless, and the closed-cell nature provides a durable, leak-resistant roofing system.

Intended Uses

GreenSeal 3.0 HFO SPF roofing systems can be used in most retrofit and new construction roofing applications. This SPF insulation can also be used for exterior tank and vessel insulation applications. It is used as a roofing system in conjunction with coatings also available from Green Shield Products (GSP). This product is intended for use by qualified contractors trained in the processing and application of SPF.

Features and Benefits

- Closed-cell SPF provides a fully adhered, monolithic, sustainable air barrier and thermal insulation
- Lightweight
- Superior yield reduces cost and amount of material required
- Enhances wind uplift resistance
- Yields a smooth surface, reducing the need for extra coating
- Excellent adhesion to most surfaces
- Self-flashing, seamless application
- HFO-blown low global warming potential (LGWP)

Installation

1. SPF roofing systems should be processed through commercially available spray equipment designed for that purpose by a qualified professional applicator. It is the responsibility of the professional applicator to thoroughly understand all equipment technical information and safe operating procedures that pertain to SPF.
2. All surfaces to be sprayed with GreenSeal 3.0 HFO should be clean, dry, and free of all dirt and contaminants. All metal to which the SPF is applied must be free of oils, grease, etc.
3. Prior to application of the GreenSeal 3.0 HFO, the substrate should be between 45° – 120°F (7° – 49°C). Service temperatures for any surface to be sprayed with SPF should not exceed 180° – 200°F (82° – 93°C). Moisture in the form of rain, fog, frost, dew, or high humidity (>85%R.H.) will adversely affect the SPF formation and physical properties of the finished product. Wind velocities of excess of 15 mph may affect the foam surface texture, cure, and physical properties, as well as cause possible overspray problems.
4. A and B Component Preheater temperatures should be set according to ambient temperature and substrate conditions. A typical starting range is 125°–130°F (51°–54°C); hose heat should be set to maintain these temperatures. Set the dynamic fluid pressure at 1,000 to 1,200 psi. Mixing ratio through the Proportioner is 1:1 by volume. 2:1 Transfer Pumps are recommended to provide positive feedback from the material to the Proportioner. These are recommended initial settings and may vary based on specific conditions.
5. Each “pass” or layer of the SPF should be at least 0.5 inches (13mm) and no more than 1.5 inches (38 mm) thick. Allow at least 10 minutes between each pass for cure and cooling. Multiple layers can be applied to reach the desired thickness and insulation value, as well as to facilitate positive drainage.
6. The finished surface of the GreenSeal 3.0 HFO must be protected from the adverse effects of sunlight (UV), which can cause discoloration and degradation. The protective coating or covering should be applied over the SPF the same day as the application, or within 24 hours. A variety of protective coatings designed for use with GreenSeal 3.0 HFO are available from Green Shield Products.

Review Green Shield Product's specifications and details for complete installation information. Please contact Green Shield Products for more information.



Energy Efficient Building Product Solutions

877.476-7453

greenshieldproducts.com



GreenSeal 3.0 HFO



Reactivities

GS 3.0 HFO Reactivities	Recommended Ambient Temp Range
GS 3.0 HFO S (Slow)	85° – 110°F (29.5° – 43°C)
GS 3.0 HFO R (Regular)	65° – 90°F (18° – 32°C)
GS 3.0 HFO F (Fast)	50° – 75°F (10° – 24°C)

Precautions

- GreenSeal 3.0 HFO is not designed for interior insulation applications.
- In addition to reading and understanding the A and B Components Safety Data Sheet (SDS), all applicators must use appropriate respiratory protection as well as Personal Protective Equipment (PPE) when handling and processing polyurethane chemical systems.
- Large masses of SPF should be removed to outside safe area, cut into smaller pieces, and allowed to cool before discarding to prevent heat build-up and potential fire hazard.
- SPF is combustible. Heat sources such as welding, cutting, or roofing torches must not be used in contact with or in close proximity to GreenSeal 3.0 HFO or any SPF.
- Yields a smooth surface, reducing the need for extra coating
- Protect A and B Components from moisture contamination.
- Application should not take place within 5°F (-15°C) of the dew point.

Typical Physical Properties ¹

Property	Test Method	GS 3.0 HFO
Compressive Strength	ASTM D1621	60 – 70 psi
Tensile Strength	ASTM D1623	75 – 80 psi
Thermal Resistance (R-Value)	ASTM C518	0.148 k (6.7 per inch)
Dimensional Stability	ASTM D2126	<4%
Water Absorption	ASTM C2842	0.6%
Closed-Cell Content	ASTM D6226	94%
Core Density	ASTM D1622	2.9 – 3.0 lbs. / cu. ft.
Surface Burning Characteristics	ASTM E84	20 FSI

Liquid Properties and Characteristics

Packaging	A Component is packaged at 551 lbs. per 55-gallon drum B Component is packaged at 500 lbs. per 55-gallon drum
Shelf Life	12 months for A Component when stored in original unopened containers in dry area between 40°F (4.5°C) and 80°F (26.7°C) 6 months for B Component

Ratings and Approvals

Meets ASTM C1029 – Type III Standard criteria
UL 790 – R38137 Listings
UL 790 – R38137 Certified for Canada
Meets IBC/IRC requirements for Foam Plastic Roofing Systems
Meets TAS 110 Criteria
CA BEARHFTI Listed

LEED® Information

Pre-Consumer Recycled Content	1.3%
Post-Consumer Recycled Content	3.35%
Manufacturing Location	Cartersville, GA
Rapidly Renewable Resources	0.6%

Shipping Information

Container Size	Gross Weight	Class
55-gallon drum (208.2L) – 1,051 lbs. set A & B net	A Component – 551 lbs. (268 Kg) B Component – 500 lbs. (245 Kg)	55
D.O.T. Classification: Liquid Plastic Material - NOIBN	Protect from freezing (40°F/4.5°C) during shipping and storage.	

¹ - Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.



Energy Efficient Building Product Solutions

877.476-7453

greenshieldproducts.com

