

# FE 348 Series

## ROOFING SYSTEM

### PRODUCT DESCRIPTION

**FE 348** is an HFC-blown, Zero Ozone-Depleting (Zero-ODP), spray polyurethane foam (SPF) system designed for roofing applications.

### Approvals and Credentials:

#### UL723 / ASTM E-84

SPF Thickness – 2.0 inches  
Flame Spread Index – 55  
Smoke Development Index – >500

#### FM Global

Class 4470 / 4880

#### Florida Building Code

Approval# FL1493.1

#### Dade County Approvals

05-0201.02 Steel – 112.5 psf  
05-0201.03 Concrete – 495 psf  
05-0201.04 Recover – 135.0 psf

#### UL790

##### Non-Combustible Decks

Class A at any SPF thickness  
Silicone, acrylic or urethane coatings  
Up to 3 : 12 incline  
Granules at 35 lbs per square (100 ft<sup>2</sup>)  
depending on configuration

##### Combustible Decks

Class B at 1 inch SPF thickness  
Silicone, acrylic or urethane coatings  
½ : 12 incline  
Granules at 35 lbs per square (100 ft<sup>2</sup>)  
depending on configuration

For more detailed information on Approvals and Certifications with regard to specific roofing constructions and applications, please contact a BASF Polyurethane Foam Enterprise LLC technical service representative.

### TYPICAL PROPERTIES\*:

<u>PROPERTY</u>	<u>VALUE</u>	<u>TEST METHOD</u>
<b>As Supplied</b>		
Specific Gravity @ 70°F	1.18	ASTM D 1638
Viscosity @ 70°F (cps)	1300	Brookfield
<b>As Cured</b>		
Mix Ratio (volume:volume)	1:1	
Density (pcf)	2.8	ASTM D 1622
Compressive Strength (psi)	47	ASTM D 1621
Tensile Strength (psi)	85	ASTM D 1623
Closed Cell Content (%)	>90	ASTM D 6226
Initial k-factor (Btu in/ft <sup>2</sup> hr °F)	0.160	ASTM C 518
Permeance (perms)	1.97	ASTM E 96
Permeability (perm inch)	2.58	
Dimensional Stability (% Volume Change)		
Dry Age 28 Days (158°F)	<1.75%	ASTM D 2126
Freeze Age 14 Days (-20°F)	<-0.40%	ASTM D 2126

\* - These physical property values are typical for this material as applied at our development facility under controlled conditions. SPF performance and actual physical properties will vary with differences in application (i.e. ambient conditions, process equipment and settings, material throughput, etc). As a result, these published properties should be used as guidelines solely for the purpose of evaluation. Physical property specifications should be determined from actual production material.

The above data was collected from samples prepared using the following equipment configuration:

- Gusmer<sup>®</sup> H-2000 proportioner set at 1:1 volume ratio with 50 ft of heated delivery hose
- GX-7 spray-gun configured with a #1 mix module and #70 Pattern Control Disc (PCD)
- Process temperature settings: Isocyanate 120-125°F; Resin 130-135°F; Hose 130°F
- Process pressure: 1000 psig minimum during dispensation

\*\* - This numerical flame spread rating does not reflect hazards presented by this or any other material under actual fire conditions. Polyurethane foam systems should not be left exposed in interior applications and must be protected by a minimum of a 15-minute thermal barrier.

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**BASF**  
The Chemical Company

BASF Polyurethane  
Foam Enterprises LLC

## **GENERAL INFORMATION:**

**FE 348** is a technically advanced SPF system intended for use by qualified contractors trained in the processing and application SPF roofing systems as well as the plural-component polyurethane dispensing equipment required to do so. Contractors and applicators must comply with all applicable and appropriate storage, handling, processing and safety guidelines. BASF Polyurethane Foam Enterprises LLC technical service personnel should be consulted in all cases where application conditions are questionable.

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

In addition to reading and understanding the MSDS, all contractors and applicators must use appropriate respiratory, skin and eye Personal Protective Equipment (PPE) when handling and processing polyurethane chemical systems. Personnel should review the following documents published by Spray Polyurethane Foam Alliance (SPFA):

*AY-104 Spray Polyurethane Foam Systems for New and Remedial Roofing*  
*AX-171 Course 101-R Chapter 1: Health, Safety and Environmental Aspects of Spray Polyurethane Foam and Coverings.*

and the following document available from the Alliance for the Polyurethanes Industry (API):

*Model Respiratory Protection Program for Compliance with the Occupational Safety and Health Administration's Respiratory Protection Program Standard 29 C.F.R. §1910.134*

As with all SPF systems, improper application techniques such as:

EXCESSIVE THICKNESSES of SPF  
SPRAYING INTO OR UNDER RISING SPF  
OFF-RATIO

may result in:

DANGEROUSLY HIGH REACTION TEMPERATURES AND POSSIBLE FIRE  
OFFENSIVE ODORS THAT MAY OR MAY NOT DISSIPATE

LARGE MASSES of SPF should be removed to an outside safe area cut into smaller pieces and allowed to cool before discarding into any trash receptacle.

AIR INTAKE UNITS SHOULD BE SHUT DOWN AND VENTS SEALED DURING POLYURETHANE SPRAY APPLICATIONS.

High-intensity heat sources, i.e., welding or cutting torches, must not be used in contact with or in close proximity to FE 348 or any polyurethane foam.

## **SHELF LIFE AND STORAGE CONDITIONS:**

**FE 348** Series has a shelf life of approximately three months from the date of manufacture when stored in original, unopened containers at 50-80°F. As with all industrial chemicals this material should be stored in a covered, secure location and never in direct sunlight. Storage temperatures above the recommended range will shorten shelf life. Storage temperatures above the recommended range may also result in elevated headspace pressure within packages.

## **LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY:**

The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are only intended for sale to industrial and commercial customers. Customer assumes full responsibility for quality control, testing and determination of suitability of products for its intended application or use. We warrant that our products will meet our written liquid component specifications. We make no other warranty of any kind, either express or implied, by fact or law, including any warranty of merchantability of fitness for a particular purpose. Our total liability and customers' exclusive remedy for all proven claims is replacement of nonconforming product and in no event shall we be liable for any other damages, including without limitation special, incidental, punitive, or consequential damages.