



BAYSEAL™ 3.0

Div. 7-Thermal and Moisture Protection Closed-Cell Roofing Foam System

Product Description

Bayseal 3.0 is a two-component, closed-cell polyurethane foam system, designed for spray applications. This foam system offers high compressive strengths, smooth aesthetics and a broad application temperature window for extended project opportunities.

Foam made with the Bayseal 3.0 system provides seamless protection by sealing cracks, crevices and holes while insulating decks from temperature extremes. Polyurethane foam can also eliminate condensation reducing the possibility of mold growth, enhancing energy efficiency, and lowers lifecycle costs by providing a low maintenance deck solution.

Unique Properties

The Bayseal 3.0 SPF system used to produce Bayseal 3.0 SPF foam comprises an “A” component, which is a polymeric diisocyanate, and a “B” component, which is a combination of polyols, catalytic agents and HFC-245fa blowing agent.

Recommended Uses

Roofing Systems Agricultural Applications
Tank Insulation Air Barrier Systems

As with any product, use of foam made with the Bayseal 3.0 system in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

Environmental Consideration and Substrate Temperatures

Applicators must recognize and anticipate climatic conditions prior to application to ensure the highest quality foam and to maximize yield. Ambient air and substrate temperatures, moisture, and wind velocity are all critical determinants of foam quality and selection of the appropriate reactivity formulation. Variations in ambient air and substrate temperature will influence the chemical reaction of the two components, directly affecting the expansion rate, amount of rise, yield, adhesion and the resultant physical properties of the foam insulation.

To obtain optimum results, the Bayseal 3.0 system should only be spray-applied to substrates when ambient air and surface temperatures fall within the range of 50°F and 120°F. All substrates to be sprayed must be dry at the time of application. Moisture in the form of rain, fog, frost, dew, or high humidity (>85% R.H.), will react chemically with the mixed components, adversely affecting the polyurethane foam formation, dimensional stability and physical properties of the finished product. Wind velocities in excess of 12 miles per hour may result in excessive loss of exotherm and interfere with the mixing efficiency of the spray gun affecting foam surface texture, cure, and physical properties and will cause overspray. Precautions must be taken to prevent damage to adjacent areas from overspray.

Typical Physical Properties*

Properties	Test Method	Value
R Value (aged):	ASTM C-518	6.4 at 1 inch
Compressive Strength:	ASTM D-1621	50 psi
Core Density	ASTM D-1622	3.0 lbs/ft ³ (nominal)
Closed Cell Content:	ASTM D-2856	> 90%
Tensile Strength:	ASTM D-1623	90 psi
Water Vapor Transmission:	ASTM E-96, B	1.0 perm-in
Dimensional Stability:	ASTM D-2126	% of Volume Change
7 days @158°F, 100% RH		< 5 %
7 days @200°F, 100% RH		< 5 %
7 days @-20°F, 100% RH		< 5 %

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

Processing Parameters and Physical Characteristics	
Pre-heater Temperature:	"A" and "B" 120-130°F
Hose Temperature:	"A" and "B" 120-130°F
Pressures:	1000-1400 psi (dynamic)*
Mix Ratio Parts:	1 to 1 by volume "A" to "B"
Viscosity at 70°F:	500 - 650 cps "B" Component 150- 250 cps "A" Component

* Dependent upon hose length.

Product Reactivity

Processing Designation	Surface Temperature
Winter	50 - 75°F
Regular	60 - 90°F
Summer	Above 85°F

Note: Adhesion should not be tested within one hour of application.

Processing Equipment

Store at 65° to 85°F in a dry and well-ventilated area. Material in containers should be maintained at 65°F to 75°F while in use. Heated trailers, hotboxes, or heated tank storage may be necessary. Material temperature should be confirmed with a thermometer or an infrared gun.

The plural component proportioner must be capable of supplying each component within $\pm 2\%$ of the desired 1:1 mixing ratio by volume. Hose heaters should be set to deliver 120°F to 130°F materials to the spray gun. These settings will help provide thorough mixing in the spray gun mix chamber in typical applications. Optimum hose pressure and temperature will vary with equipment type and condition, ambient and substrate conditions, and the specific application. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that relates to the acceptable combinations of gun chamber size, proportioner output, and material pressures. The relationship between proper chamber size and the capacity of the proportioner's pre-heater is critical. Mechanical purge spray guns (specifically direct impingement or DI type) are recommended for highest foam quality. Contact your Bayer MaterialScience representative for specific recommendations, pricing, and availability of spray and auxiliary equipment.

CAUTION: Extreme care must be taken when removing and reinstalling drum transfer pumps so as NOT to reverse the "A" and "B" components.

Per Pass Limitations

For optimal physical properties, of the Bayseal 3.0 system pass thickness should be limited to 1.5" per pass. If subsequent passes are needed, applicators should wait 10 minutes between passes to allow reaction heat to dissipate. The exothermic reaction can cause temporary substrate thermal rises in excess of 150°F, which may result in substrate thermal expansion. If the substrate then contracts when the reaction heat dissipates, substrate deformation can occur.

Credentials/Certifications

Bayseal 3.0 system is available in a Class II formulation, as set forth under Underwriters Laboratories UL 723 (ASTM E84), and possesses the flammability characteristics shown below:

Underwriters Laboratories UL 723, Surface Burning Characteristics			
ASTM Method E84			
	Class I	Class II	Class III
Flame Spread	N/A	≤ 75	N/A
Smoke Development	N/A	≤ 450	N/A

Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling materials used to produce foam made with the Bayseal 3.0 system. Before working with this product, you must read and become familiar with the available information on its risks, proper use and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets and product labels. More resources are available at spraypolyurethane.com, polyurethane.org, sprayfoam.org, baycareonline.com, or by contacting the Bayer MaterialScience Product Safety and Regulatory Affairs Department in Pittsburgh, PA.



Note: The information contained in this bulletin is current as of December 2010. Please contact Bayer MaterialScience to determine whether this publication has been revised.

Bayer MaterialScience LLC

100 Bayer Road • Pittsburgh, PA 15205-9741 • Phone: 1-800-662-2927 • www.spf.bayermaterialscience.com

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Sales Offices

2400 Spring Stuebner Road West, Spring, TX 77389 • 1-800-221-3626 • Fax: 1-281-288-6450
