Bayer MaterialScience

Product Information

BAYSEAL™OC

Div. 7-Thermal and Moisture Protection
Open-Cell Foam Insulation
ESR 1655

Product Description

Bayseal OC open-cell spray applied polyurethane foam is produced with a two component, low density, non-structural insulation system designed for commercial, residential and industrial applications.

The low density nature of Bayseal OC foam allows for tremendous yield while still affording critical air sealing of the home, office space or classroom - resulting in increased energy savings and comfort for building occupants.

The system used to produce Bayseal OC SPF foam comprises an "A" component or aromatic diisocyanate and a blended "B" component which includes polyols, fire retarding materials, catalysts and blowing agent.

Recommended Uses

Walls	Unvented Attics	Ceilings
Floors	Vented Attics	

As with any product, use of Bayseal OC foam 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 highest quality foam and to maximize yield. Ambient air and substrate temperatures, humidity, and moisture are all critical determinants of foam quality. Extreme ambient air and substrate temperature will influence the chemical reaction of the two components, directly affecting the yield, adhesion and the resultant physical properties of the foam insulation. The system used to produce Bayseal OC foam should only be spray-applied to substrates when ambient air and surface temperatures fall within a range of 50°F and 120°F. All substrates to be sprayed must be free of dirt, soil, grease, oil and moisture prior to the application of Bayseal OC foam.. Moisture in any form: excessive humidity (>85%R.H.), rain, fog, or ice will react chemically and will adversely affect system performance and corresponding physical properties. Do not spray Bayseal OC foam if the substrate temperature is within 5°F of dew point. Precautions must be taken to prevent damage to adjacent areas from overspray.

Typical Physical Properties*

Properties	Test Method	Value
Fungi Resistance:	ASTM G-21	Zero Rating
R Value (aged):	ASTM C-518	3.9 at 1 inch 13 at 3.5 inches 19 at 5.5 inches
Air Leakage Rate:	ASTM E-283	< 0.02 (L/s)/m^2
Compressive Strength:	ASTM D-1621	< 5 psi
Apparent Density:	ASTM D-1622	0.5 pcf nominal
Open Cell Content:	ASTM D-2856	> 90%
Tensile Strength:	ASTM D-1623	< 5 psi
Water Vapor Permeability:	ASTM E-96	21 perm-in
Dimensional Stability: (158°F at 97 % R.H.)	ASTM D-2126	< 15% change in volume
Surface Burning Characteristics**	ASTM E-84 4-inches	Flame Spread Index < 25 Smoke Developed Index < 450

** These items are provided as general information only. They are approximate values and are not part of the product specifications.*
*** These numerical flame spread values are not a true reflection on how this or any material will perform in actual fire conditions.*

Processing Parameters

Store at 65° to 85°F in a dry and well-ventilated area. Material in containers should be maintained at 80°F to 90°F while in use. Heated trailers or conditioned storage may be necessary. Material temperature should be confirmed with a thermometer or an infrared gun if calibrated for drum material.

The components used to produce Bayseal OC foam should be mixed once a day with a high-speed mixer for 15 to 30 minutes prior to application. Bayer MaterialScience recommends the use of a minimum 1.5 HP through-bung, air-powered mixer equipped with three sets of mixing blades: two six inch blades on top and one eight inch blade on the bottom. To properly drive the mixer, 20 cfm of air is preferred. Using less air pressure may require extended mixing times. A thorough high-speed mix is an essential step in high quality foam production.

Do not recirculate or mix other suppliers' "A" or "B" component into the containers use to produce Bayseal OC foam. 2:1 transfer pumps are recommended for material transfer from container to the proportioner.

When converting from one SPF "B" system to another it is important to drain hoses and transfer pumps to minimize transitional material. SPF created during the transition should not be installed as insulation. This material should be discarded using an appropriate disposal method consistent with local codes and regulations.

The plural component proportioner must be capable of supplying each component within ± 2% of the desired 1:1 mixing ratio by volume.

Hose heaters should be set to deliver 115°F to 140°F materials to the spray gun. Proportioner dynamic pressures should be in the 1000 to 1500 psi range. 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.

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

Processing Parameters and Physical Characteristics	
Pre-heater Temperature:	"A" and "B" 115-140°F
Hose Temperature:	"A" and "B" 115-140°F
Pressures:	1000-1500 psi (dynamic)*
Mix Ratio Parts:	1 to 1 by volume "A" to "B"
Viscosity at 75°F:	225 cps "B" Component
Shelf Life:	6 months @ 65° - 85°F

** Dependent upon hose length.*

Thermal Barrier

The Model Building Codes require that SPF be separated from the interior of a building by an approved fifteen (15) minute thermal barrier, such as 1/2" gypsum wall board or equivalent, installed per manufacturer's instructions and corresponding code requirements. The Model Building Codes allow for omission of the prescribed thermal barrier in certain instances by way of diversified testing, such as:

- attics and crawlspaces with limited access.
- successful testing in accordance with room corner protocols.

Local building codes may vary and must be consulted for applicability of thermal barrier exceptions.

Handling Information

Applicators should ensure the safety of the jobsite and construction personnel by posting appropriate signs warning that all "hot work" such as welding, soldering, and cutting with torches should not take place until a thermal barrier or approved equivalent is installed over any exposed polyurethane foam.

Vapor Retarder

Bayseal OC foam is intended for indoor applications, and is not a vapor retarder. It is vapor permeable and will allow for some diffusion of moisture through the insulation. The following considerations are needed: (1) A vapor retarder needs to be considered in the design of the building envelope in cold climates, such as zones 4 and higher in the U.S., as defined in 2004 Supplement To The IRC, Table N 1101.2; (2) A vapor retarder also needs to be considered where high interior humidity conditions exist. Refer to local codes and manufacturer's written specifications to ensure compliance.

Application Thickness

Applicators should limit Bayseal OC foam thickness to 6" per lift for optimal processing and physical properties.

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 Bayseal OC foam. 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 May 2010. Please contact Bayer MaterialScience to determine whether this publication has been revised.

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