



Bayseal® CC Polar Spray Polyurethane Foam (SPF)

Installation Guidelines

Material storage and conditioning

The A and B-side raw material should be stored from 70°F to 85°F (21°C to 29°C) in a dry and well-ventilated area. Storage outside this range can affect shelf life and material performance.

The material will need to be conditioned to between 70°F and 80°F (21°C and 27°C) prior to use. It takes approximately 48 hours in a heated area to condition all the material in a drum to the correct temperature.

Mixing and recirculating

Mixing of Bayseal® CC Polar SPF is unnecessary and can lead to a loss of blowing agent which negatively affects yield. Heated recirculation is also not recommended for the same reason.

If a changeover from another product to Bayseal® CC Polar SPF is necessary, ensure all of the other product is flushed from the machine and lines prior to spraying. Contamination with another product will compromise the integrity of Bayseal® CC Polar SPF.

Environmental and Substrate Considerations

Applicators must recognize and adjust for ambient temperature and substrate conditions prior to application to ensure the highest quality foam and to maximize yield. It is the applicator's responsibility to assure the system is being applied appropriately for any given environmental conditions.

Variations in ambient air and substrate temperature will influence the chemical reaction of the two components, directly affecting yield, adhesion and the resultant physical properties of the foam insulation. Ambient and substrate temperatures should be a minimum of 15°F (-10°C) and a maximum of 75°F (24°C). If ambient temperatures and substrate temperatures are above or below the suggested temperature range, the foam applicator may attempt to manage the ambient and/or substrate temperatures via job site set up as well as adjusting material application temperatures and technique in order to apply the foam system effectively. In service temperature should not exceed 180°F (82°C).

Water in any form (rain, fog and ice for example) will react chemically with the foam and will adversely affect system performance and corresponding physical properties. The presence of any water in liquid form, such as condensation, on the substrate will affect adhesion and can create defects in the foam. Concrete less than 28 days old and wood with moisture content higher than 18% should not be sprayed onto per the International Code Council (ICC).

Substrates must be free of dirt, oil, grease, moisture or any other material that may affect adhesion or the chemical reaction prior to the application of Bayseal® CC Polar SPF. Substrates with excessive heat sink effect, such as concrete and metal may require additional preparation to achieve full reactivity of the foam.

Every application must be inspected periodically during installation of the product for proper cell structure and adhesion to ensure substrate and environmental conditions are not adversely affecting the quality of the installed foam.

For technical assistance or help, call (800) 221-3626 to speak with a technical representative.

Equipment

Bayseal® CC Polar SPF must be applied with a plural component proportioning pump that meters the components in a one to one (1:1) ratio. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that relates to acceptable combinations of gun chamber size, proportioner pre-heater capacity and material pressures at the gun. The relationship between chamber size and the capacity of the proportioner pre-heaters to add heat to the material is critical. If the output capacity of the mix chamber exceeds the proportioner pre-heater output, the material will move too quickly through the heaters and material will not have the correct temperature when it gets to the gun. The mismatch will also likely create an excessive pressure drop. Either or both of these conditions will not allow the two components to mix thoroughly inside the chamber and the finished foam will be substandard.

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Typical Processing Parameters

Table 1 lists typical parameters for best results when spraying Bayseal® CC Polar SPF. These parameters will provide a good starting point which will need to be adjusted for the site conditions at the time of spray. The primary goal is to ensure thorough mixing of the two components in the spray gun mix chamber for optimum foam performance. The pressure and temperature settings may vary depending on the type of equipment, hose length, chamber size, ambient and substrate conditions, and the specific application.

Applicators should limit Bayseal® CC Polar SPF foam thickness to 2 inches per lift for optimal processing and physical properties.

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

Table 1:

Conditioning:	Bayseal® CC Polar SPF must be conditioned to between 70°F and 80°F (21°C and 27°C) prior to use.
Shelf-life:	6 months when stored from 70°F to 85°F (21°C and 29°C). Storage outside the recommended range may affect shelf life.
Processing:	Pressure: 1000 - 1500 psi at the proportioner (during spray) or 800 psi minimum as measured at the gun (during spray) Preheaters: 120°F - 140°F (49°C -60°C) Hose: 120°F - 140°F (49°C -60°C) Substrate: 15°F - 75°F (-10°C -24°C)
In-service maximum:	180°F (82°C)
Maximum Lift:	2 inches per pass

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Thermal Barrier

International Residential Code (IRC) and International Building Code (IBC) codes require that SPF be separated from the occupied space 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. Be knowledgeable of the local code for thermal barrier requirements before installing the insulation product.

Vapor Retarder

Bayseal® CC Polar SPF at a depth of two inches meets the definition of the International Residential Code (IRC) for Class II Low Permeability Vapor Retarders. The applicator should be aware of the climate zone the jobsite is in as well as any special occupant behavior and refer to local code for vapor retarder requirements.

Handling and Safety

Personal protective equipment (PPE) is necessary for SPF workers to protect them from SPF chemical vapors and overspray particles (mist) generated from the spraying of heated A and B-side materials. Appropriate PPE is needed to protect the skin, eyes, and respiratory system.

Respiratory protection is MANDATORY during spray polyurethane foam application! Contact Bayseal for a copy of *Guidance for Developing a Written Respiratory Protection Program* developed by the Center for the Polyurethanes Industry (CPI) or visit their website at <https://polyurethane.americanchemistry.com/Resources-and-Document-Library/Guidance-for-Developing-a-Written-Respiratory-Protection-Program.pdf>. In addition to respiratory protection, SPF applicators should wear a disposable coverall with hood, and fabric gloves coated with nitrile, neoprene, butyl, or PVC.

Open A and B-side raw material drums carefully, allowing any pressure to be relieved slowly and safely. Wear chemical resistant coverall or jacket, safety goggles, nitrile, neoprene or butyl gloves when directly handling liquid raw materials. In case of eye contact, immediately flush with large amounts of water for at least fifteen minutes, consult a physician immediately. In case of skin contact, wash area with soap and water.

Fire Hazard

Applicators should ensure the safety of the jobsite and construction personnel by notifying the owner, all other construction trades on site, and posting appropriate signs warning that all "hot work" such as welding, soldering, and cutting with torches should take place no less than 35 feet from any exposed foam. If "hot work" must be performed closer than 35 feet, all spray polyurethane foam should be covered with an appropriate fire retardant cover or welder's blanket, and a fire watch shall be provided in accordance with 29 CFR 1910.252(a)(2)..

Fires involving either of these components may be extinguished with carbon dioxide, dry chemical, or inert gas. Application of large quantities of water spray is recommended for spill fires. Personnel fighting the fire must be equipped with NIOSH approved self-contained breathing apparatus.

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