



Bayseal® OC Spray Polyurethane Foam (SPF) Installation Guidelines

Material storage and conditioning

The A and B-side raw material should be stored from 50°F to 80°F (10°C to 27°C) in a dry and well-ventilated area. Storage outside this range can affect shelf life and material performance. Do not allow the material to freeze.

The material will need to be conditioned to between 80°F and 100°F (27°C and 38°C) prior to use. Heated recirculation can be used to raise the temperature as long as there is continuous mixing. If heated recirculation isn't used, it will take approximately 48 hours in a heated room to condition all the material in a drum to the correct temperature.

Mixing and recirculating

Bayseal® OC SPF must be thoroughly mixed at the beginning of each work day with a high-speed mixer for a minimum of 45 minutes to ensure a homogenous mixture. **A thorough initial mix is an essential step in quality Bayseal® OC SPF production. Do not rush this process! Recirculation is not a form of mixing.** Lack of proper mix will result in substandard foam.

The use of a 1.5 horsepower air mixer (or equivalent) equipped with three (3) sets of mixing blades: (2) six inch and (1) eight inch will provide the proper mix in 45 minutes. Lack of sufficient mix speed may require extended mixing times.

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

Environmental and Substrate Considerations

Applicators must recognize and anticipate climatic conditions prior to application. Ambient air, substrate temperature and moisture are all critical determinants of foam quality. 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.

It is the foam applicator's responsibility to ensure the system is being applied within physical parameters. Proper applications may require adjustments to one or more of the following: spray techniques, substrate, application, or job site temperature.

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 to 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® OC SPF. Substrates with excessive heat sink effect such as concrete and metal may require additional preparation to get the best performance from the foam.

Every application must be inspected for proper cell structure and adhesion to ensure substrate and environmental conditions did not adversely affect the quality of the installed foam.

Cold weather temperature application may require changing of spray technique, material temperatures, application temperatures, substrate preparation and environmental conditioning. Consult a Bayseal Technical Representative for details.

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

Equipment

A 1.5 horsepower air mixer (or equivalent) equipped with three (3) sets of mixing blades: (2) six inch and (1) eight inch blade at the bottom is necessary to provide the correct amount of mix. Other configurations of mixer and blade may not be adequate or will require additional mix time to provide the correct amount of mix.

Bayseal® OC 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.

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

Typical Processing Parameters

Table 1 lists typical parameters for best results when spraying Bayseal® OC 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® OC SPF foam thickness to 6 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® OC SPF must be conditioned to between 80°F and 100°F (27°C and 38°C). Heated recirculation with continuous mix can be used to raise the temperature.
Mixing:	Bayseal® OC SPF must be mixed with 1.5 HP air mixer (or equivalent) using a 3 blade shaft for a minimum of 45 minutes before spraying. Do not over mix (entrain air) and do not contaminate with other material.*Recirculation only is not an adequate form of mixing.
Shelf-life:	6 months when stored from 50°F to 80°F (10°C and 27°C). Storage outside the recommended range may affect shelf life.
Processing:	Pressure: 1000 - 1600 psi at the proportioner (during spray) or 800 psi minimum as measured at the gun (during spray) Preheaters: 115°F - 140°F (46°C -60°C) Hose: 115°F - 140°F (46°C -60°C) Drum temperature in use: 80°F - 100°F (27°C - 37°C)
In-service maximum:	180°F (82°C)
Maximum Lift:	6 inches per pass

For more specific guidelines, call (800) 221-3626 to speak with a technical representative.

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® OC SPF is intended for indoor applications, and is not a vapor retarder. It is vapor permeable and will allow some diffusion of moisture through the insulation. 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.

For more information, refer to the product Safety Data Sheet (SDS).

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.

DISCLAIMER: To the best of our knowledge, all technical data contained herein is true and accurate as of the date of issuance and subject to change without prior notice. User must contact Bayseal to verify correctness before specifying or ordering. We guarantee our products to conform to the quality control standards established by Bayseal. We assume no responsibility for coverage, performance or injuries resulting from use. Liability, if any, is limited to replacement of the product. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY BAYSEAL EXPRESSED OR IMPLIED; STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE."