



PRODUCT APPLICATION GUIDE

THERMOSEAL MEDIUM DENSITY CLOSED CELL ROOFING FOAM PRODUCT: THERMOSEAL 2500, 2700, 3000 Spray Polyurethane Foam

ThermoSeal 2500, 2700, or 3000 is suitable for application to most construction materials including wood, masonry, concrete, and metal. All surfaces to be sprayed with foam should be clean, dry, and free of dew or frost. All metal to which the foam is to be applied must be free of oil, grease, etc. One and one half (1-1/2) inches should be the maximum thickness of each pass. Allow ten minutes between each pass to allow for cooling. Multiple layers can be applied to reach the desired thickness and R-value. As with all spray polyurethane foam systems, improper application techniques should be avoided. Examples of improper techniques include, but are not limited to, excessive thickness of spray polyurethane foam, off ratio material and spraying into or under rising foam. Potential results of improperly installed spray polyurethane foam include: dangerously high reaction temperatures that may result in fire and offensive odors that may or may not dissipate. Improperly installed foam must be removed and replaced with properly installed spray polyurethane foam. It is the responsibility of the applicator to thoroughly understand all equipment technical information and safe operating procedures that pertain to a spray polyurethane foam application.

APPLICATION & STORAGE GUIDELINES

STORAGE TEMPERATURE	65°F - 80°F	
TEMPERATURE RANGE	REACTIVITY DESIGNATION	RECOMMENDED TEMPERATURE RANGE
	(R) Regular	65°F - 90°F
MAXIMUM LIFT PER PASS	1-1/2"	

PRE-HEATERS: (A) COMPONENT - ISO	125° - 130°	These are recommended "Initial" Settings. Settings may vary based on the type of equipment used and the substrate temps. at the time of application.
PRE-HEATERS: (B) COMPONENT - RESIN	125° - 130°	
HOSE HEAT	120° - 130°	
AIR PRESSURE	1,000-1,200 psi - Dynamic	
MIXING RATIO	1:1 By Volume	

APPLICATION GUIDELINES: Polyurethane foam systems should be processed through commercially available spray equipment designed for that purpose by a qualified professional applicator. The proportioning equipment must be capable of maintaining all designated ratios, temperature settings, etc. as shown in the settings chart. The gun should be of the internal mix type, which provides thorough blending of the two components. The equipment shall be of the heated airless type capable of maintaining 160°F at the gun by use of both primary heaters and heated hoses. The use of 2:1 transfer pumps is recommended for supplying the liquid components to the proportioner.

It is the responsibility of the professional applicator to thoroughly understand all equipment technical information and safe operating procedures that pertain to a spray polyurethane foam application.

PROPER STORAGE OF RAW MATERIALS: Shelf life is 12 months from date of manufacture when stored in original unopened containers at 65°F to 85°F. Store in a dry and well-ventilated area.

Raw materials must be kept warm. Cold chemicals can cause poor mixing, pump cavitation, or other process problems due to higher viscosity at lower temperatures. Storage temperatures should be 65°F to 85°F for several days before use, and should not exceed 90°F. Avoid storing drums on concrete or metal floors in cold (winter) conditions. Do not store in direct sunlight. Keep drums tightly closed when not in use and under dry air or nitrogen pressure of 2-3 psi after they have been opened.

MATERIAL HANDLING: Due to the reactive nature of these components respiratory protection is mandatory. The vapors and liquid aerosols present during application and for a short period thereafter must be considered – and appropriate protective measures taken – to minimize potential risks from overexposure through inhalation, skin, or eye contact. These protective measures include: adequate ventilation, safety training for installers and other workers, use of appropriate personal protective equipment, and a medical surveillance program. It is imperative that the applicator read and become familiar with all available information on proper use and handling of spray polyurethane foam. Additional Information is available at spraypolyurethane.org, polyurethane.org or by contacting the ThermoSeal, LLC Technical Services dept. 1.800.853.1577

PERSONAL PROTECTION EQUIPMENT: Spraying of polyurethane foam results in the atomizing of the components to a fine mist. Inhalation and exposure to the atomized particles must be avoided.

Spraying of polyurethane foam results in the atomizing of the components to a fine mist. Inhalation and exposure to the atomized droplets must be avoided. Applicators must use personal protective equipment recommended by the Center for Polyurethanes Industry for use in high-pressure spray foam application. Precautions include, but are not limited to:

- a. Full-face mask or hood with fresh air source
- b. Fabric coveralls
- c. Non-permeable gloves
- d. Solvent-resistant gloves when handling new materials and cleaning solvents.

WARNING: EXPOSURE MAY OCCUR EVEN WHEN NO NOTICEABLE ODOR IS ENCOUNTERED.

Applicators must use personal protective equipment recommended by the Center for Polyurethanes Industry for use in high-pressure spray foam application. Please visit www.spraypolyurethane.org for additional information on appropriate personal protection equipment selection and use.

SAFE HANDLING OF LIQUID COMPONENTS: When removing bungs from containers use caution, contents may be under pressure. Loosen the small bung first and let any built up gas escape before completely removing. Avoid prolonged breathing of vapors. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor. For further information refer to “MDI-Based Polyurethane Foam Systems: Guidelines for Safe Handling and Disposal” publication AX-119 published by the Alliance for the Polyurethanes Industry, Arlington, VA

DISSIMILAR RESINS: *When changing the “B” side (resin) to another type of spray polyurethane foam it is very important that the supply hoses and pumps are completely drained. Any resin on the drum pump must be completely removed prior to insertion into the drum of the new material. Mixing of dissimilar product types (particularly closed cell into open cell) will contaminate the resin in the new drum. It is the responsibility of the applicator to follow this guideline to avoid contaminating the resin.*

SPRAY PROCESS: ThermoSeal 2500, 2700, or 3000 maybe applied in passes of uniform thickness from a minimum of half inch (1/2”) inch to a maximum of one and a half (1-1/2) inches. ThermoSeal 2500, 2700, or 3000 must not be applied in a thickness exceeding one and a half (1-1/2) inches in a single pass. If this thickness is exceeded, it will adversely affect the quality and physical properties of the finished product and the internal temperature building up within the foam may cause charring or thermal degradation. Under certain conditions, applications exceeding this thickness may cause spontaneous combustion of the foam to occur, even hours after the product was applied.

One and a half (1-1/2) inches should be the maximum thickness of each pass. Allow ten minutes between each pass to allow for cooling. Multiple layers can be applied to reach the desired thickness and R-value.

As with all spray polyurethane foam systems, improper application techniques should be avoided. Examples of improper techniques include, but are not limited to, excessive thickness of spray polyurethane foam, off ratio material and spraying into or under rising foam. Potential results of improperly installed spray polyurethane foam include: dangerously high reaction temperatures that may result in fire and offensive odors that may or may not dissipate.

Polyurethane foam not applied at the correct equipment settings and application parameters (off-ratio) will result in polyurethane foam with poor physical and adhesion properties. Any polyurethane foam applied off-ratio must be completely removed and replaced with properly installed spray polyurethane foam.

It is the responsibility of the applicator to thoroughly understand all equipment technical information and safe operating procedures that pertain to a spray polyurethane foam application.

Spray polyurethane foam insulation is combustible. High intensity heat sources such as welding or cutting torches must not be used in close proximity to any polyurethane foam. Large masses of spray polyurethane foam should be removed to an outside safe area, cut into smaller pieces, and allowed to cool before discarding into a trash receptacle.

SUBSTRATES: ThermoSeal 2500, 2700, or 3000 is a roofing system designed for use in commercial and industrial applications. Use in lieu of more traditional forms of roofing systems. ThermoSeal 2500, 2700, or 3000 can be applied as a new system over most decking substrates or over an existing built up roofing system as a cost effective alternative to a complete tear off. ThermoSeal 2500, 2700, or 3000 is suitable for application to most construction materials including wood, masonry, concrete, metal and most roofing board stock materials. ThermoSeal 2500, 2700, or 3000 can be applied to clean, dry and sound roofing surfaces such as BUR, mod bit, metal, concrete, single-ply and other properly prepared roofing systems. This system will provide a seamless monolithic roof system with no joints, seams, cracks or mechanical fasteners that would allow moisture, heat or cold to enter. Additional uses of this product are as an exterior coating for industrial tanks, agricultural structures, air barrier system, etc.

ThermoSeal 2500, 2700, or 3000 is available in multiple reactivity formulations. ThermoSeal will assist the applicator to match the correct reactivity formula with the ambient and substrate temperatures.

Prior to application of the ThermoSeal 2500, 2700, or 3000 the substrate should be between 45°-120°F (7°-49°C). Service temperatures for any surface to be sprayed with polyurethane foam should not exceed 180°-200°F (82°- 93°C). Moisture in the form of rain, fog, frost, dew or high humidity (>85%R.H.) will adversely affect the polyurethane foam formation and physical properties of the finished product.

Wind velocities of excess of 15 mph may affect the foam surface texture, cure and physical properties as well as cause possible overspray problems.

The presence of moisture will greatly affect the physical characteristics of the polyurethane foam. Polyurethane foam cannot be applied to any substrate that has surface moisture such as rain, condensation, dew, frost, etc. The moisture acts as a blowing agent that will react with the "A" side of the system. This can result in off-ratio polyurethane foam with poor physical and adhesion properties. Any polyurethane foam applied during these conditions must be completely removed and the substrate allowed to thoroughly dry prior to a new application.

FINISHED FOAM PROTECTION: The finished surface of ThermoSeal 2500, 2700, or 3000 must be protected from the adverse effects of sunlight, which can cause discoloration and degradation. The protective coating or covering should be applied over the polyurethane foam the same day as the application or within 24 hours.

COMPANION PRODUCTS: To complete the ThermoSeal 2500, 2700, or 3000 roofing system requires the application of a top coating from our ThermoSeal ARC or SRC line of coatings. The ThermoSeal coatings are designed for specific use with the ThermoSeal 2500, 2700, or 3000 roof system. ThermoSeal ARC or SRC provides an additional weather-tight seal along with the UV light protection required for exterior spray polyurethane foam applications.

SKIN EXPOSURE: Immediately remove any clothing soiled by the product. Immediately wash skin with water and soap and rinse thoroughly. Remove breathing apparatus only after contaminated clothing have been completely removed. In case of irregular breathing or respiratory arrest provide artificial respiration. First Aid responders should pay attention to self-protection and use the recommended protective clothing.

INHALATION: Supply fresh air or oxygen; call for doctor.

EYE CONTACT: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

AFTER SWALLOWING: Immediately call a doctor. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

ENVIRONMENTAL PRECAUTIONS: Inform the relevant authorities if the product has caused environmental pollution. Do not allow material to enter sewers/ surface or ground water systems.

MATERIAL SPILL CONTAINMENT AND CLEAN UP: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause slipping hazard. Ensure adequate ventilation. Contain spilled material if possible. Absorb with materials such as: dirt, sand, sawdust. Collect in suitable and properly labeled containers. Wash the spill site with water.

WASTE DISPOSAL: Incinerate in a licensed facility. Do not discharge into waterways or sewer systems.

CONTAINER DISPOSAL: Steel drums must be emptied (as defined by RCRA, Section 261.7 or state regulations that may be more stringent) and can be sent to a licensed drum re-conditioner for reuse, a scrap metal dealer, or an approved landfill. Drums destined for a scrap dealer or landfill must be punctured or crushed to prevent reuse.

TECHNICAL ASSISTANCE: For additional assistance please contact the ThermoSeal Technical Services dept. 800.853.1577

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 ThermoSeal, LLC to verify correctness before specifying or ordering. We guarantee our products to conform to the quality control standards established by ThermoSeal, LLC. 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 THERMOSEAL, LLC. EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.