PREMIUM SPRAY PRODUCTS™

# FOAMSULATE™ 210 TECHNICAL DATA

*Spray Polyurethane Foam*
*Foamsulate 210*
*2.0lb Density*
*ICC ESR - 3081*

## EQUIPMENT AND APPLICATION PARAMETERS:

| | |
|---|---|
| **Preheat Temperature "A" & "B" Side** | 125°F |
| **Hose Temperature "A" & "B" Side** | 125°F |
| **Mixing Ratio** | 1 to 1 By Volume Of "A" to "B" |
| **Application Pressures** | 1,000 - 1,200 PSI |
| **Substrate Temperature** | > 50°F |
| **Ambient Air Temperature** | > 40°F |
| **Thickness Per Pass** | 2" Maximum |

## SURFACE BURNING CHARACTERISTICS

| | |
|---|---|
| **Flammability** | ASTM E 84 Class I At 4 Inches |
| Flame Spread < 20 Smoke Development < 450 | |

## CREDENTIALS CHART

**ICC ES Report Report # ESR-3081**

**ICC ES AC377, Appendix A1.2.2 and Appendix X**

**ASTM Method E84**

**NFPA 286**

**Maximum Thickness Tested :**
**(Tested Only - Not a Limit on application)**

Wall Cavities = 8 Inches
Ceiling Cavities in Attics and Crawlspaces = 12 Inches

**PRODUCT TYPE:** Premium Spray Products, Inc. Foamsulate™ 210 is a two-component, medium density, one to one by volume spray applied polyurethane foam. To produce Foamsulate™ 210 requires the use of an "A" component (ISO) and a blended "B" component (RESIN) which contains ZERO Ozone Depleting blowing agents, catalysts, polyols and fire retarding materials.

**GENERAL PROPERTIES:** Foamsulate™ 210 is a 2.0 LB density closed cell insulating material. Foamsulate™ 210 is designed for use where insulation systems require superior air barrier characteristics along with the ability to minimize moisture infiltration. Foamsulate™ 210 has a 6.8 per inch R-value rating while providing structural enhancement due to its rigid nature when cured. When properly installed by a trained contractor Foamsulate™ 210 quickly expands to fill the cracks, crevices, gaps and voids that exist in every structure. In addition Foamsulate™ 210 will conform to the curves, irregular surfaces and spaces to form a superior thermal envelope around your entire structure.

**RECOMMENDED USES:** Foamsulate™ 210 is an insulation system designed for use in residential, commercial and industrial applications. Use in lieu of more traditional forms of insulating materials such as fiberglass, cellulose or other loose fill products. Typical area's where spray polyurethane foam is applied are; exterior walls, vented and un-vented attic assemblies, between floors, etc. Additional uses of this closed cell product are foundations, crawlspaces, HVAC ducts, fluid tanks, cold storage units, etc.

**THERMAL BARRIER:** Current International Residential Code (IRC) and International Building Code (IBC) require that spray polyurethane foam be separated from the building interior by a 15-minute thermal barrier. The most common approved 15 minute thermal barrier is ½" thick gypsum board. Consult current IRC and IBC publications for a complete list of approved 15-minute thermal barriers. Explanation of the thermal barrier requirement is available on Premium Spray Products, Inc. ICC ESR - 3081 Report and at www.iccsafe.org.

**IGNITION BARRIER:** Building codes officials will accept a spray polyurethane foam application with and without an ignition barrier under certain conditions. Foamsulate 210 has been approved for use in attics and crawlspaces per ICC-ES AC377, Appendix A1.2.2 and Appendix X. Explanation of these requirements is available on Premium Spray Products, Inc. ICC ESR - 3081 Report and at www.iccsafe.org.

**EQUIPMENT AND APPLICATION PARAMETERS:** The values represented in the Equipment and Application Properties Chart provides initial optimum settings. Actual operating ranges will vary as ambient air; humidity, moisture and substratetemperatures vary. Extreme conditions will affect the yield, adhesion and cured physical properties of the foam. Applicator must make adjustments as conditions vary.

**STORAGE:** Shelf life is six (6) months from date of manufacture when stored in original unopened containers between the temperatures of 65°F to 85°F.

## PHYSICAL PROPERTIES

| | | |
|---|---|---|
| **R-VALUE (Aged)** | 6.7 / Inch | ASTM C 518 |
| **Core Density** | 2.0 PSCF | ASTM D 1622 |
| **Closed Cell Content** | > 96% | ASTM D 1940 |
| **Sound Transmission Coefficient** | 38 | ASTM E 413 |
| **Water Vapor Transmission - Permeance** | .875 Perms at 2" | ASTM E 96 |
| **Air Leakage Rate** | <0.003L/sM² | ASTM E 283 |
| **Noise Reduction Coefficient** | 0.10 | ASTM C 423 |
| **Tensile Strength (PSI)** | 51 | ASTM D 1623 |
| **Dimensional Stability** | < .27 | ASTM D 2126 |
| **Compressive Strength (PSI)** | 41 | ASTM D 1621 |

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# FOAMSULATE™ 210
## GENERAL INFORMATION

### APPLICATION GUIDELINES

Foamsulate™ 210 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. Two (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.

Substrate temperature at the time of the Foamsulate™ 210 application should be between 50°F to 120°F, the warmer the surface, the better the adhesion. When substrates to be sprayed are cooler than 50°F, a half inch pass should be applied to provide a thermal break. Follow with a second pass soon as the original pass is no longer tacky to the touch. For service temperatures in the range of 120°F to 180°F, the substrate to be sprayed should be 120°F or above at the time of spraying.

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.

When changing the "B" side (resin) to another type of spray polyurethane foam it is very important that the supply hoses an and pumps are completely drained. Mixing of dissimilar product types will have an adverse effect on the foam.

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.

Foamsulate™ 210 is NOT designed for use as an exterior roofing product. Please contact Premium Spray Products, Inc. for information on our spray polyurethane roofing systems.

### EQUIPMENT AND COMPONENT RATIOS

Polyurethane foam systems should be processed through commercially available spray equipment designed for that purpose. Foamsulate™ 210 "A" side is connected to the isocyanate pump and the Foamsulate™ 210 "B" side is connected to the resin pump. The proportioning pump ratio is 1 to 1 by volume. The pre-heater initial setting should be 125°F. The initial hose temperature should be 125°F. Equipment must be capable of maintaining temperature settings.

### FINISHED FOAM PROTECTION

The finished surface of the sprayed polyurethane foam should be protected from the adverse effects of direct exposure of ultraviolet light from the sun. This exposure will cause dusting and discoloration. Protective coatings designed for use with polyurethane foams are available from Premium Spray Products, Inc.

### 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. The resin "B" component will froth at elevated temperatures. Avoid prolonged breathing of vapors. In case of chemical contact with eyes, flush with water for at least 15 minutes and get medical attention. 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.

### HEALTH & SAFETY

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, sprayfoam.com or by contacting the technical services department of Premium Spray Products, Inc.

### STORAGE AND USE OF CHEMICALS

Cold chemicals can cause poor mixing, pump cavitations, 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. 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. Shelf life is six (6) 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.