GUARDIAN BUILDING PRODUCTS

GUARDFOAM® 27

CLOSED CELL SPRAY INSULATION

Product Design

GuardFoam® 27 CC is a low pressure polyurethane spray foam system, developed using an EPA approved blowing agent that cures to a semi-rigid ,low-density foam. The cured product is dimensionally stable in all weather conditions and its insulating properties do not significantly diminish over time.

Recommended Product Applications*

- Walls
- Floors
- Finished Attics
- Ceilings

*Spaces must be ventilated while spraying is being performed. Always consult local building code officials to ensure intended applications meet codes and regulations. Attic roof deck applications and/or sealed attic applications may affect shingle warranties. Check the manufacturer's warranty.

Physical Properties

Properties	Test Method/ Requirements	Value
Aged "R" Value	ASTM C 518	5.2 at one inch
Density	ASTM D 1622	1.8-2.1 lb/ft³ nominal
Compressive Strength	ASTM D1621	19.4 psi
Dimensional Stability	ASTM D 2126	< 15%
Tensile Strength	ASTM D 1623	26.1 psi

Recommended Processing Parameters

Processing Designation	GuardFoam 27 CC
Equipment Dynamic Pressure	190 psi
Preheat Temperature	80° - 85° F (26.7° - 29.4° C)
Hose Heat Temperature	110° F (43.3° C)
Tank Temperature Storage	65° - 75° F (18.3° - 23.9° C)

The shelf life will be 4 months when stored within recommended temperature range.

Surface Burning Characteristics

ASTM E 84-05 (Also known as ANSI 2.5, NFPA 255, UBC 8-1 (42-1) and UL 723)

FlameSpread	<25
Smoke Development	450

Typical Liquid Chemical Properties

"A" Side contains polymeric isocyanate. "B" Side contains polyols, catalysts, fire retardants and blowing agents

Property	Test Temp.	ASTM Test	Unit	Value
Viscosity "A" Component "B" Component	77°F (25°C)	D-2196-68	cps	 180 ± 20 700 ± 100
Lbs/gal/S.G. "A" Component "B" Component	77°F (25°C)		lbs/gal/S.G.	 10.3/1.23 9.3/1.11
Mixing Ratio: "A" & "B" Component	77°F (25°C)		by volume	1:1
Stability: When Stored at 50° F to 70°F (10°C - 21° C)				A: 6 months B: 6 months

CONTINUED ON BACK

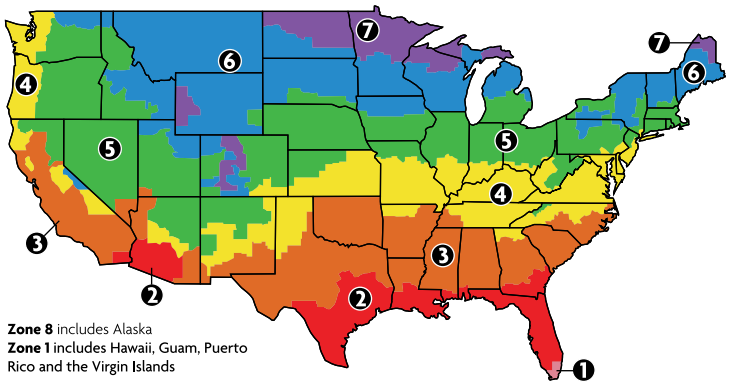
Note: Prior to installing a spray polyurethane foam interior insulation system, code officials should be consulted for recommendations and approvals. Federal, local and state building codes vary. All require that spray applied polyurethane foam insulation be covered with an approved 15 minute fire rated thermal barrier. One typically approved material is 5/8" gypsum wallboard applied over the spray polyurethane foam insulation. However, always check with local officials for recommendations and approvals. It is recommended that the approved thermal barrier be installed the same day the foam is applied.

All hot work, i.e., welding, torches and open flame work, must have been completed prior to commencing the installation of the polyurethane foam insulation. Smoking in the same area while the spray polyurethane foam insulation is being applied must be strictly prohibited.

VAPOR RETARDERS

Referencing the 2008 DOE R-value recommendation map, Guardian recommends the use of an approved vapor retarder in climate zones 5, 6, 7 and 8.

In cases where a vapor retarder is used in conjunction with GuardFoam 27, it is important that all surrounding building materials be dry at the time of installation. Local building code officials should always be consulted and their recommendations followed in these matters.



Zone 8 includes Alaska
Zone 1 includes Hawaii, Guam, Puerto Rico and the Virgin Islands

THERMAL BARRIER

IRC and IBC 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. There are exceptions to the thermal barrier requirement: (1) Code authorities may approve coverings based on fire tests specific to the SPF application. For example, covering systems that successfully pass large scale tests may be approved by code authorities in lieu of a thermal barrier; (2) SPF protected by 1" thick masonry does not need a thermal barrier. When installed within an attic or crawl space, a fifteen (15) minute thermal barrier, such as ½" gypsum wall board or equivalent is required for GuardFoam 27. Consult local building code officials to ensure this application meets codes and regulations. Certain materials that offer protection from ignition, called "ignition barriers," may not be considered as thermal barrier alternatives unless they comply with NFPA 286 or other similar full scale tests. Applicators should request test data and code body approvals or other written indications of acceptability under the code to be sure that the product selected offers code-compliant protection.

SAFETY INFORMATION

Respiratory protection is **MANDATORY** for everyone in the spray area! Follow OSHA requirements for Respiratory Protection (29 CFR 1910.134). A model Respiratory Protection Program developed by API is available at their website (www.polyurethane.org). Work zone and re-entry requirements are given on MSDS sheets or Guardian's "Important Safety Information" document available at www.guardianbp.com. Persons with known respiratory ailments should avoid exposure to the "A" component. The "A" component contains reactive isocynate groups while the "B" component contains amine and/or catalysts. Both materials must be handled and used with adequate ventilation. Routes of entry are eye and skin absorption and inhalation. Avoid breathing vapors or aerosols. Wear a NIOSH approved respirator (Supplied air respirator is recommended where exposures are unknown. A self-contained breathing apparatus may be required in areas with high exposures and/or poor ventilation.). Wear protective clothing and gloves. If inhalation of vapors occurs, remove victim from contaminated area. Administer oxygen if breathing is difficult. Also avoid contact with skin, eyes, and clothing. Open containers carefully, allowing any pressure to be relieved slowly and safely. In case of eye contact, immediately flush with large amounts of water for at least fifteen minutes; in case of skin contact, wash area with soap and water; wash clothes separately before reuse. If symptoms persist, consult a physician. Use warning signs and caution tape to reiterate to others no unprotected individuals may be in the house during spray operations and for at least one hour following completion of spraying to allow vapors to disperse. Warning signs should indicate that no "hot work" such as welding, soldering, or cutting with torches should take place within 35 feet of any exposed foam.

DISCLAIMER

The aforementioned information on this product is to be used as a guide and is subject to change without notice. These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions, methods and use of our products are beyond our control. Any obligation of the seller or manufacturer shall have no force or effect unless it is in writing and signed by officers of the manufacturer.

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GFM207 2/11 Printed in U.S.A.