FOAM-LOK™ 2000-4G

Closed-Cell Spray Insulation

FOAM-L
SPRAY FOAM INSUL

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 07/27/15

Product Use and Design

FOAM-LOK™ 2000-4G is a **Closed-Cell** spray applied foam, which was developed using an EPA approved 4th generation blowing agent which when installed following application guidelines adheres tenaciously to framing members and substrates. **FOAM-LOK™ 2000-4G Closed-Cell** spray foam provides superior energy economy and durability while significantly reducing unmanaged moisture and air infiltration.

As a component of a "systems approach" to proper building envelope construction, **FOAM-LOK™ 2000-4G Closed-Cell** spray foam provides exceptional performance in minimizing heat transfer, moisture gain, air leakage, and improving racking strength.

TYPE : I, II, III, IV, V (A&B) Construction

Recommended Product Applications

- Walls
- Floors
- Unvented Crawl Spaces
- Concrete Slabs
- Cold Storage
- Unvented Attics
- Vented Attics
- Vented Crawl Spaces
- Ducts
- Freezers
- Ceilings
- Piping
- Foundations
- Tanks
- Coolers

Recommended Processing Parameters

Processing Designation	Regular
Winter	20-50°F
Regular	50-95°F
Summer	95°F- and above

Optimum hose pressure and temperature may vary as a function of the type of equipment, ambient and substrate conditions, and the specific application. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that relates acceptable combinations of gun chamber size, proportioner output, and material pressures.

Processing Designation	FOAM-LOK™ 2000-4G
Equipment Dynamic Pressure	1,000 - 1,400 psi
Preheat Temperature	125 - 135 °F (52 - 57° C)
Hose Heat Temperature	125 - 135 °F (52 - 57° C)
Drum Storage Temperature	65 - 85 °F (18 - 30° C)
Shelf Life:	6 months when stored properly.

Material shelf life: 6 months when stored within recommended temperature range.

- 2:1 transfer pumps are recommended for material transfer from container to the proportioner.

- CAUTION: Extreme care must be taken when removing and reinstalling drum transfer pumps so as NOT to reverse the "A" and "B" components.

- Do not circulate or mix other suppliers' "A" or "B" component into **FOAM-LOK™ 2000-4G** containers.

Physical Properties

Properties	Test Method/ Requirements	Value
Aged "R" Value	ASTM C518	1" - 6.2 per inch 4" - 6.8 per inch
Compressive Strength	ASTM D1621	25-30 psi
Core Density	ASTM D1622	2.0-2.2 lbs./ft3
Air Leakage	ASTM E283-04	< 0.02L/s/M2 at 1.0 inches
Inflitration		.008/L/S/m^2 at 1"
Exfiltration		.009/L/S/m^2 at 1"
Closed-Cell Content	ASTM D2856	> 90%
Water Absorption	ASTM D2842	2.36 %
Water Vapor Transmission @ 74°F, perm inch	ASTM E96 2.5 max	1.4 perms @ 1" .95 perms @ 1.4"
Dimensional Stability 28 days at 160°F, 100%RH	ASTM D2126 15% max by volume change	≤4%
Flammability	NFPA 259	1870 Btu/ft^2 21.3 MJ/m^2

Credentials/Certifications

- **CCRR 1025**

FOAM-LOK™ 2000-4G is a **Class I** formulation, as Tested per ASTM E84, and at a thickness of 4.0 inches possesses the flammability characteristics shown below: (UL 723, NFPA 255, UBC 8-1)

ASTM Method E84	Class I
Flame Spread	≤25 - <15>
Smoke Development	≤450 - <350>

ASTM E-119	1 Hour Load Bearing - Wood Stud
	2 Hour Non-Load Bearing - Wood Stud
	1 Hour Non-Load Bearing - Steel Stud
*** Complies with testing per NFPA 285 maximum thickness 3 1/2" in specific constructions**	

For specific construction requirement of ASTM E119 and NFPA 285 testing please contact Lapolla Technical Group or your sales representative.

***Diversified Testing Modified NFPA 286 PER AC 377 Appendix X**	
Location	**SPF Thickness ***
Wall Cavities - "8	200 mm
Ceiling Cavities in Attics and Crawl Spaces - 12"	300 mm

- No Ignition Barrier Required

SPRAY FOAM SYSTEMS
4G SOLSTICE
TECHNOLOGY

FOAM-LOK™ 2000-4G

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Room Corner Fire Testing*
With 1/2" Thermal Barrier (Sheetrock)

*NFPA 286	
Location	**SPF Thickness ***
Wall Cavities	Up to 12 in (305mm)
Ceiling Cavities	Up to 12 in (305mm)

***THESE VALUES REFER TO THE TOTAL THICKNESS OF THE PRODUCT TESTED, NOT THE MAXIMUM THICKNESS ALLOWED PER PASS OR APPLICATION. THIS FOAM MUST NOT BE APPLIED IN EXCESS OF 3.0 INCHES PER APPLICATION. THE FOAM SHOULD BE ALLOWED TO COOL FOR 20 TO 30 MINUTES OR UNTIL THE SURFACE TEMPERATURE HAS RETURNED TO AMBIENT BEFORE ADDITIONAL APPLICATIONS OF FOAM ARE ATTEMPTED. FOAM APPLIED IN EXCESS OF 3.0 INCHES OR WITHOUT ALLOWING FOR COOLING MAY RESULT IN, BUT IS NOT LIMITED TO EXCESS HEAT BUILD-UP AND RESULT IN FIRE OR THE GENERATION OF OFFENSIVE ODORS THAT MAY NOT DISSIPATE WITH TIME.**

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. 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 full-scale burn 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.

Vapor Retarder

FOAM-LOK™ 2000-4G qualifies as a vapor retarder as defined by the International Code Council and ASHRAE (class II) at a minimum thickness of 1 1/2 inches. Building construction types with a persistent, high moisture drive require additional moisture remediation, as local building codes dictate. This is including climate zones 5 and higher in the U.S., as defined in 2004 Supplement to the IRC, Table N1101.2.

Safety and Handling

Respiratory protection is **MANDATORY!** Lapolla requires that supplied air and a full face mask be used during the application of any spray applied foam system. Contact Lapolla Industries for a copy of the Model Respiratory Protection Program developed by CPI or visit their web site at www.polyurethane.org. Persons with known respiratory allergies should avoid exposure to the "A" component. The "A" component contains reactive isocyanate groups while the "B" component contains amine and/or catalysts with blowing agents. Both materials must be handled and used with adequate ventilation. The vapors must not exceed the TLV (0.02 parts per million) for isocyanates. Avoid breathing vapors. Wear a NIOSH approved respirator. If inhalation of vapors occur, remove victim from contaminated area and administer oxygen if breathing is difficult. Call a physician immediately. Avoid contact with skin, eyes, and clothing. Open containers carefully, allowing any pressure to be relieved slowly and safely. Wear chemical safety goggles and rubber gloves when handling or working with these 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. Wash clothes before reuse.

Positive pressure ventilation of the work area is required to minimize the accumulation of vapors in the work area during the application. Improper application techniques of this foam system must be avoided. This includes excessive thickness, off ratio material, and spraying into rising foam. The potential results of improperly applied materials may include but is not limited to, excessive heat build-up, and may result in a fire or offensive odors which may not dissipate with time and/or poor product performance due to improper density of the applied material. Large masses of sprayed materials should be avoided. When large masses are generated they should be removed from the area, cut into small pieces and allowed to cool before disposal. Failure to follow this recommendation may result in a fire. It is recommended that a fire extinguisher be located in an easily accessible portion of the work area.

Applicators should ensure the safety of the jobsite and construction personnel by 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 all spray polyurethane foam should be covered with an appropriate fire or welder's blanket, and a fire watch should be provided.

In Case of Spills or Leaks

- Utilize appropriate personal protective equipment
- Ventilate area to remove vapors
- Contain and cover spilled material with a loose, absorbent material such as oil-dry, vermiculite, sawdust or Fuller's earth
- Shovel absorbent waste material into proper waste containers
- Wash the contaminated areas thoroughly with hot, soapy water
- Report sizeable spills to proper environmental agencies

In Case of Fire

Extinguishing Media-Dry chemical extinguishers such as mono ammonium phosphate, potassium sulfate, and potassium chloride. Additionally, carbon dioxide, high expansion (proteinic) chemical foam, or water spray for large fires.

DISCLAIMER

The data presented herein is not intended for use by nonprofessional applicators, or those persons who do not purchase or utilize this product in the normal course of their business. The potential user must perform any pertinent tests in order to determine the product's performance and suitability in the intended application, since final determination of fitness of the product for any particular use is the responsibility of the buyer.

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