

FOAM-LOK® 450

High Yield OC Spray Foam

ICC ESR-4242

Product Use and Design

FOAM-LOK® 450 is a **High Yield OC** spray applied foam when installed following application guidelines, adheres tenaciously to framing members and substrates. **FOAM-LOK® 450** is a low density, open celled, flexible, 100% water-blown polyurethane foam insulation. It is capable of being installed in unvented attics without an ignition barrier or coating.

FOAM-LOK® 450 forms a completely sealed air barrier in wall cavities and can be used to fill 2" x 6" stud wall construction in a single application or any critical insulation areas. Its performance is superior to commonly used fiber-glass batt or blown-in insulation. It adheres well to most building materials and will provide a continuous barrier against air infiltration for the life of the building. As a component of a "systems" approach to proper building envelope construction in both residential and Type V commercial construction, **FOAM-LOK® 450** provides exceptional performance in reducing heat transfer.

Recommended Processing Applications

- Unvented or Vented Attics
- Cavity Walls
- Critical Insulation Areas

Recommended Processing Parameters

Processing Designation	FOAM-LOK® 450
Ambient Temperature	20°F - 120°F (-6 - 49°C)
Equipment Static Pressure	1,200 - 1,400 psi
Preheat Temperature (A&B/Hose)	128 - 135°F (53 - 57°C)
Drum Preheat Temperature (prior to use)	70 - 85°F (21 - 29°C)
Drum Storage Temperature (warehouse)	50 - 85°F (10 - 27°C)

Processing Mixing Requirements

Recommendations	FOAM-LOK™ FL 450
Recommended Drum Agitator/Mixer	Expanding Blade Bung-Mounted High Viscosity Agitator <ul style="list-style-type: none">• Graco (part # 26C150)
Recommended Agitator Speed	500 rpm
Max Agitator Working Pressure	100 psi
Recommended Air Compressor	19 cfm or rated higher

Processing Application Method

Recommendations	FOAM-LOK™ FL 450
Spray Gun	Fusion AP Spray Gun or Equivalent
MixChamber(s)	AR 42/42 or 52/52

- 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™** containers.
- The plural component proportioner must be capable of supplying each component within ± 2% of the desired 1:1 mixing ratio by volume.

FOAM-LOK™

SPRAY FOAM INSULATION

Material Shelf Life:

Six (6) months when stored within recommended temperature range.

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.

Physical Properties

Properties	Test Metl Requirements	Value
Aged "R" Value	ASTM C518	3.7 per inch
Core Density	ASTM D1622	Nominal 0.45 pcf
Air Permeance	ASTM E2178	< 0.02 L/s.m² at 3.5 inches
Dimensional Stability: 28 days at 160°F, 100% RH	ASTM D2126	3%
Water Vapor Permeance	ASTM E-96	22 Perm at 1"
Water Absorption	ASTM D2842	5%

Credentials/Certifications

- ICC ESR-4242

FOAM-LOK® 450 is a Class I formulation, as Tested per ASTM E84

ASTM E84	Class I
Flame Spread	<25
Smoke Development	<450

Room Corner Fire Testing (Without Prescriptive Thermal Barrier)*

*NFPA 286	
Location	SPF Thickness*
Wall	Up to 5.5 in (152 mm)
Ceilings	Up to 14 in (356 mm)

*20 Wet mils / 13 Dry mils **DC315** Intumescent Coating Required

*21 Wet mils / 14 Dry mils **TPR² Fireshell** (F10E) Intumescent Coating Required

Limited Access Unvented Attic

Application Location	Uncoated SPF Thickness*
Underside of Roof Sheathing	Up to 20 inches (508mm)
Attic Walls	Up to 20 inches (508mm)

UNVENTED ATTICS

Lapolla's **FOAM-LOK® FL 450** can be applied to the underside of the roof deck to a maximum of 20 inches and be left bare if its thickness is a minimum of 3 1/2 inches at roof decking. Consult Lapolla's Technical Department for details.

Ventilation Rate (Air Changes Per Hour)	Re-Entry Period For: Sprayers, Helpers, Informed Trade Workers & Contractors	Re-Occupancy Period For All Others
At 10.0 ACH	1 Hour	2 Hours



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Start-Up Procedure

FOAM-LOK® 450 material drum temperature should be no less than 70°F and should not exceed 85°F. Recommended temperature of 80°F for optimum processing to occur. Temperature in excess of 90°F may decrease performance and produce cosmetic defects within the foam structure and surface.

For additional **FOAM-LOK® 450** start-up procedures, see Mixing & Application Guide.

Flushing Procedure

Before **FOAM-LOK® 450** is introduced to any equipment, purge any previous material from your system. Turn off and disconnect air to all transfer pumps. Remove the drum pumps from the ISO and Resin drums and wipe pumps and dip tubes clean. Ensure Resin drum pump housing is emptied. Place the drum pumps and dip tubes in Lapolla's LPA-ISO and **FOAM-LOK® 450** drums. Reconnect or turn on the air to the drum pumps. Use the drum pumps to purge the ISO and Resin supply and recirculation hoses back to their respective drums or into containers for reuse. One to two gallons of material are normally purged, depending on hose length. When finished and changing into another system, **flush the "B" Side (resin side)** with 3-4 gallons of water.

***THESE VALUES REFER TO THE TOTAL THICKNESS OF THE PRODUCT TESTED NOT THE MAXIMUM THICKNESS ALLOWED PER PASS OR APPLICATION. THIS FOAM MUST NO BE APPLIED IN EXCESS OF 8 INCHES PER PASS. THE FOAM SHOULD BE ALLOWED TO COOL FOR 10 TO 20 MINUTES OR UNTIL THE SURFACE TEMPERATURE HAS RETURNED TO AMBIENT BEFORE ADDITIONAL APPLICATIONS OF FOAM ARE ATTEMPTED. FOAM APPLIED IN EXCESS OF 8 INCHES OR WITHOUT ALLOWING FOR COOLING MAY RESULT IN, BUT NOT LIMITED TO EXCESS BUILD-UP AND COULD RESULT IN FIRE OR THE GENERATION OF OFFENSIVE ODORS THAT MAY .**

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 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 protections.

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. The 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. 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 poly-urethane 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.

Positive pressure ventilation of the work area is recommended 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.

DISCLAIMER

The data presented herein is not intended for use by non-professional 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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