

# TECHNICAL DATA SHEET

FOR PROFESSIONAL USE ONLY



## E84 Class 1 Spray Foam Refill Systems



Handi-Foam® E84 Class 1 Spray Foam Refill Systems utilize a non-flammable blowing agent. Handi-Foam® E84 Class 1 Spray Foam has been specifically formulated for flame retardancy and conforms to the requirements of ASTM E84 as a "Class 1" system (flame spread of 25 or less, smoke development of 450 or less). The foam helps to lower heating and cooling costs, drastically reducing energy consumption. In addition, Handi-Foam® E84 Class 1 Spray Foam Refill Systems can assist in attaining an ENERGY STAR® rating and/or LEED Certification.

### Application Areas

Spray foam onto any clean, dry surface in any direction to insulate, fill and seal various size voids, deaden sound or reduce vibration. It is specifically designed to spray onto flat or irregular surfaces and to fill large cavities where flame retardant requirements specify E84 Class 1 Spray Foam.

### Properties

Two-component froth foam systems will expand immediately upon chemical reaction of A component (isocyanate) and B component (a polyol blend) to a final volume that is 3 to 5 times the dispensed volume, in typical applications, depending on various factors such as cavity size and ambient conditions. The foam will cure to a semi-rigid closed cell foam.

Handi-Foam® E84 Class 1 Spray Foam Refill Systems fully expand and dry tack-free within 30-60 seconds, is cuttable in 2-5 minutes and fully cures within 1 hour.

Handi-Foam® E84 Class 1 Spray Foam Refill Systems adhere to almost all building materials with the exception of surfaces such as polyethylene, Teflon®, silicone, oils and greases, mold release agents and similar materials.

Optimum application temperature is 75°F- 85°F (24°C-29°C) but may be sprayed onto colder or warmer substrates, with slight effects on the foam characteristics. Cured foam is resistant to heat and cold, -200 to +240°F (-129 to +116°C), and to aging, but not UV rays (i.e. sunlight) unless painted, covered or coated. Cured PU foam is chemically inert and non-reactive in approved applications, and will not harm electrical wire insulations, Romex®, rubber, PVC, polyethylene (i.e. PEX) or other plastic. It is approved for use around wires, plumbing penetrations, etc., and contains no formaldehyde.

Handi-Foam® E84 Class 1 Spray Foam Refill Systems are available in four refillable tank sizes for large construction applications, assembly line filling, or any unique application that requires a balance between quality and affordability. When sprayed, the foam will create a seamless, continuous seal to insulate and protect against dust, air infiltration and pests.

### Physical Properties

See technical data table on the second page.

### Preparation For Use

Substrate must be clean, dry, firm, free of loose particles and free of dust, grease and mold release agents. Protect surfaces not to be foamed.

Read the enclosed operating instructions available in every A-tank or they can be found on our website [www.fomo.com](http://www.fomo.com). Carefully read all cautions warnings, and MSDS before use. Always refer to the local building codes before application of product.

### Use

Warm tanks to 75°F- 85°F (24°C-29°C). After following instructions for set-up attach appropriate hose to tanks A and B. Open tank valves as directed. Materials are dispensed through the hoses. Attach the static cone or fan nozzle to the end of the dispensing unit. The A-component and the B-component meet and mix in the disposable nozzle. With a nozzle attached to the two-component froth dispensing unit, dispense foam by squeezing the trigger of the unit. To interrupt or stop foaming process, release the trigger. Once foaming process has stopped, the dispensing unit must be reactivated within 30 seconds or a new nozzle **must** be installed. Fresh foam may be applied in several stages to reduce overfilling of void or damage to non-rigid, confined cavities. Cured foam can only be removed manually.

**Important Note:** Use only in well-ventilated area with certified respiratory protection or a powered air purifying respirator (PAPR). Wear protective glasses or goggles, nitrile gloves, and clothing that protects against dermal exposure. Read all instructions and safety information (MSDS) prior to use of any product. The product contains no formaldehyde. Cured foam is non-toxic. The urethane foam produced from these ingredients will support combustion and may present a fire hazard if exposed to a fire or excessive heat about 240°F (116°C).

**KEEP OUT OF REACH OF CHILDREN.**

### Product Storage

Store tanks at 75°F- 85°F (24°C-29°C). Do not expose the tanks to open flame or temperatures above 120°F (49°C). Excessive heat can cause premature aging of components resulting in a shorter shelf life.

**Cold Weather Note:** For best results, foam chemical temperature must be between 75°F-85°F (24°C-29°C). During colder months it may take 2-3 days to warm the chemicals to optimum temperature. In hotter months it may take a full day to cool tanks to optimum temperature.

Construction of a temperature controlled "hot box" is recommended for all applications in order to store the refill systems at a consistent, controlled temperature prior to and during use.

Using a Magnum™ Heated System improves temperature control.

### Return Procedures

The tanks are shipped back to Fomo, cleaned, refilled, and redistributed. Return instructions are included in the collar of the refill tanks.

Warranted Shelf life is six (6) months from date of manufacture.

**Fomo Products, Inc.**  
A Member of the FLM Group of Companies  
management system registered to ISO 9001



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## Technical Data

<b>DENSITY</b>	
ASTM D1622 Free Rise	1.75 lb/ft <sup>3</sup> (28 kg/m <sup>3</sup> )
ASTM D1622 In-place	2.12 lb/ft <sup>3</sup> (34 kg/m <sup>3</sup> )
<b>K-FACTOR</b>	0.166 BTU-inch / ft <sup>2</sup> ·h·°F (0.023 W/m·K)
ASTM C518 - Aged 90 days at 140°F	
<b>R-VALUE</b> (Metric RSI in parentheses)	6.0/inch (RSI=1.09/inch, 0.043/mm)
<b>AIR BARRIER PROPERTIES</b>	
ASTM E283	
@1.57 psf (75 Pa)	<0.0025 cfm/ft <sup>2</sup> (<0.0125 L/s/m <sup>2</sup> )
@6.24 psf (300 Pa)	<0.01 cfm/ft <sup>2</sup> (<0.05 L/s/m <sup>2</sup> )
<b>PERM RATING</b>	
ASTM E96-Method A	
1" (2.54 cm)	1.67 (100 ng/(m <sup>2</sup> ·Pa·s))
2" (5.08 cm)	1.44 (82 ng/(m <sup>2</sup> ·Pa·s))
3" (7.62 cm)	1.00 (57 ng/(m <sup>2</sup> ·Pa·s))
<b>TENSILE STRENGTH</b>	
ASTM D1623	29 lbf/in <sup>2</sup> (200 kPa)
<b>AIR PERMEANCE</b>	
ASTM E2178	0.02 l/(m <sup>2</sup> ·s)
<b>COMPRESSIVE STRENGTH</b>	
ASTM D1621	
Parallel @ 10%	23 lbf/in <sup>2</sup> (158 kPa)
Perpendicular @ 10%	16 lbf/in <sup>2</sup> (110 kPa)
<b>DIMENSIONAL STABILITY</b>	
ASTM D2126	
HEAT AGE: +158°F (70°C)	-0.6%
HUMID AGE: +158°F (70°C), 100% RH	+2.9%
COLD AGE: -4°F (-20°C)	-0.3%
<b>CLOSED CELL CONTENT</b>	
ASTM D2856	>90%
<b>TACK-FREE / EXPANSION TIME</b>	30 - 60 seconds
<b>CUTTABLE</b>	2-5 minutes
<b>FULLY CURED</b>	1 hour
<b>FUNGI RESISTANCE</b>	No growth
ASTM G21	
<b>FIRE RATING</b>	
ASTM E84	Flame Spread Index = 20
Tested at 2" thickness	Smoke Developed =400
<b>FIRE RATING</b>	
CAN/ULC S102	Flame Spread Index = 9
Tested at 2 Inch beads Caulking & Sealant	Smoke Developed =43

## Approvals / Standards

Handi-Foam E-84 Class 1 Spray Foam conforms to the requirements of ASTM E84 as a "Class 1" material. Tested at 2" thickness  
Flame Spread 20 Smoke Developed 400

CCMC #13392-R  
CCMC- #13455-L  
ICC ES Report- Pending

Contains a non-flammable HFC propellant.

## Theoretical Yield\*

Refillable Tanks	Board Feet	Cubic Feet
System 17 P22070	1980	165ft <sup>3</sup> (4.7 m <sup>3</sup> )
System 27 P22270	3120	260ft <sup>3</sup> (7.4 m <sup>3</sup> )
System 60 P22470	6840	570ft <sup>3</sup> (16.1 m <sup>3</sup> )
System 100 P22670	11400	950ft <sup>3</sup> (26.9 m <sup>3</sup> )

\* Yields are based on theoretical calculations, for comparative purposes, and will vary depending on ambient conditions and particular application.

## Processing Parameters

Product Storage	<120°F (49°C)	Store in a cool dry area
Application Temperature	40°F (5°C)- 120°F (49°C)	For best results
Chemical Temperature	75-85°F (24-29°C)	

## Tank Specifications (Per Tank)

	Systems 17 & 27	Systems 60 & 100
<b>Dimensions</b>		
Height	54" (137 cm)	61" (155 cm)
Diameter	15" (38 cm)	30" (76 cm)
Base	20 x 20" (51 cm x 51 cm)	30 x 30" (76 cm x 76 cm)
<b>Empty Weight</b>	120 lbs (54 kg)	360 lbs (163 kg)
<b>Filled Weight*</b>	System 17: 265 lbs (120 kg) System 27: 350 lbs (159 kg)	System 60: 860 lbs (390 kg) System 100: 1190 lbs (540 kg)

\*Filled tank weights are approximate for estimation purposes only. Actual gross weight is formulation specific and may be slightly higher or lower.

**Always read all operating, application and safety instructions before using any products.** Use in conformance with all local, state and federal regulations and safety requirements. Failure to strictly adhere to any recommended procedures and reasonable safety precautions shall release Fomo Products, Inc. of all liability with respect to the materials or the use thereof. For additional information and location of your nearest distributor, call Fomo Products, Inc. 1 330.753.4585 or 1 800.321.5585.

**NOTE:** Physical properties shown are typical and are to serve only as a guide for engineering design. Results are obtained from specimens under ideal laboratory conditions and may vary upon use, temperature and ambient conditions. Right to change physical properties as a result of technical progress is reserved. This information supersedes all previously published data. Yields shown are based on theoretical calculations and will vary depending on ambient conditions and particular application. Read all product directions and safety information before use. Consult local building codes for specific requirements regarding the use of cellular plastics or urethane products in construction.

**WARNINGS:** Follow safety precautions and wear protective equipment as recommended. Consult Material Safety Data Sheet (MSDS) at [www.fomo.com](http://www.fomo.com) for specific information. Prolonged inhalation exposure may cause respiratory irritation/sensitization and/or reduce pulmonary function in susceptible individuals. Onset may be delayed. Pre-existing respiratory conditions may be aggravated. Use only in a well ventilated area and with certified respiratory protection. NIOSH approved positive pressure supplied air respirator is recommended if exposure guidelines may be exceeded. Contents may be very sticky and irritating to skin and eyes, therefore wear safety glasses or goggles, nitrile gloves, and clothing that protects against dermal exposure when operating. If liquid chemical comes in contact with skin, first wipe thoroughly with dry cloth, then rinse affected area with water. Wash with soap and water afterwards, and apply hand lotion if desired. If liquid comes in contact with eyes, immediately flush with large volume of clean water for at least 15 minutes and get medical help at once. If liquid is swallowed, get immediate medical attention. Do not induce vomiting. If breathing is difficult, give oxygen. If breathing has stopped give artificial respiration. Products manufactured or produced from these chemicals are organic and, therefore, combustible. Each user of any product should carefully determine whether there is a potential fire hazard associated with such product in a specific usage. **KEEP OUT OF REACH OF CHILDREN.**

**LIMITED WARRANTY:** The Manufacturer warrants only that the product shall meet its specifications: THIS WARRANTY IS IN LIEU OF ALL WRITTEN OR UNWRITTEN, EXPRESSED OR IMPLIED WARRANTIES AND THE MANUFACTURER EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. The buyer assumes all risks whatsoever as to the use of the material. Buyer's exclusive remedy as to any breach of warranty, negligence or other claim shall be limited to the replacement of the material. Failure to strictly adhere to any recommended procedures shall release The Manufacturer of all liability with respect to the materials or the use thereof. User of this product must determine suitability for any particular purpose, including, but not limited to, structural requirements, performance specifications and application requirements prior to installation and after product is applied.



## Two-Component E84 Class 1 Spray Foam

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