

TECHNICAL DATA SHEET



Two-Component Polyurethane Spray Foam Refill Systems

Handi-Foam® Two-Component Refill system is a multiple purpose two-component froth polyurethane foam designed within the international guidelines for protection of the ozone layer, and with respect to the Montreal Protocol, 1987, and other environmental guidelines, utilizing a non-flammable non-ozone depleting blowing agent to assist in the safety of the end user. Refill systems are dispensed through the state-of-the-art Handi-Gun® froth dispensing unit, providing unsurpassed quality and flexibility in end-use performance.

Application Areas

Spray foam onto 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.

Properties

Two-component froth systems will expand immediately upon chemical reaction of A component and B component to a final volume that is 3 to 5 times the dispensed volume, in typical applications, and may be as much as 8 times the dispensed volume in specific applications, depending on various factors such as cavity size, ambient conditions, etc. The foam will cure to a semi-rigid closed cell foam upon the chemical reaction of component A (polymeric isocyanate) with component B (a polyol blend containing certain additives).

Handi-Foam Quick Cure Two-Component Froth foam is tack-free in 1 minute, cuttable in 5 minutes and fully cures in 1 hour.

Handi-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 (24°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°F to +240°F (-129°C to +115°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 systems require no outside mechanical or electrical power source and are available in various disposable kit sizes to meet specific job application requirements. When sprayed, the foam will create a seamless, continuous seal to insulate and protect against dust, air infiltration and pests.

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 operating instructions before using. Be sure to adjust tank pressures to recommended setting value.

Application/Use

After following instructions for set-up, tanks are ready to use. Attach appropriate hose to tanks A or B. Open tank valves as directed. Materials are dispensed through the hoses and mixed in the disposable nozzle.

With a nozzle attached to the Handi-Gun, dispense foam by squeezing the trigger of the unit. To interrupt or stop foaming process, release the gun 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.

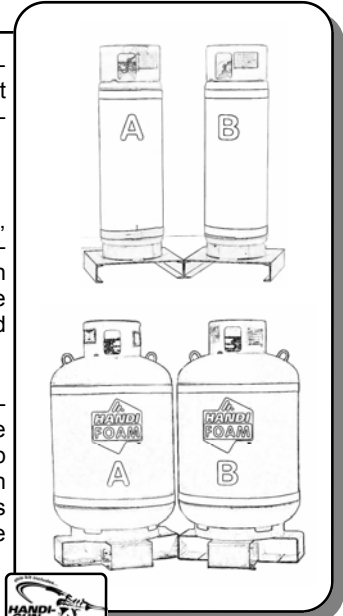
Important Note: Use only in well ventilated areas or with certified respiratory equipment. Wear impervious gloves, protective eye-wear and suitable work clothes when using. Read all instructions and safety information (MSDS) prior to use of any product. The product contains no formaldehyde. Cured foam is non-toxic. **KEEP OUT OF REACH OF CHILDREN.**

Product Storage

Store at temperatures between 75 - 85°F (24 - 29°C). Do not expose to open flame or temperatures above 120°F (49°C). Excessive heat can cause premature aging of components resulting in a shorter shelf life. Follow operating instructions for storage and reuse.

For optimum results, chemical temperature must be between 75°F - 85°F (24°C - 29°C). During colder months it may take up to a week or more to warm the chemicals 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.

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



Fomo Products, Inc.

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2775 Barber Road PO Box 1078 Norton, Ohio 44203 USA

p: 1 330.753.4585 1 800.321.5585 f: 1 330.753.5199

e: info@fomo.com w: www.fomo.com

Technical Data

(Metric data shown in parentheses)	Standard Density 1.75 lbs/ft ³
DENSITY ASTM D-1622	1.75 lbs/ft ³ (28 kg/m ³)
K-FACTOR ASTM C-518 (28 day aging)	0.162 BTU-inch / ft ² ·h·°F (0.023 W/m·K)
R-VALUE (28 day aging)	6.2/ inch (RSI=1.09/inch)
AIR BARRIER PROPERTIES ASTM E-283 @6.24 psf (300 Pa) @1.57 psf (75 Pa) extrapolated	<0.01 cfm/ft ² (0.05 L/s/m ²) <0.0025 cfm/ft ² (0.0125 L/s/m ²)
PERM RATING ASTM E-96-Method A 1" (2.54 cm) 2.5" (6.35 cm)	1.99 1.26
TENSILE STRENGTH ASTM D-1623 Parallel	46 psi (317 kPa)
COMPRESSIVE STRENGTH ASTM D-1621 Parallel @ 10% Perpendicular @ 10%	27 psi (186 kPa) 18 psi (124 kPa)
DIMENSIONAL STABILITY ASTM D-2126 Heat age +158°F (70°C) Humid age +158°F (70°C), 100% RH Cold age -4°F (-20°C)	-0.6% +2.9% -0.3%
CLOSED CELL CONTENT ASTM D-2856	>90%
TACK-FREE / EXPANSION TIME	30-60 seconds
CUTTABLE	2-5 minutes
FULLY CURED	1 hour
FIRE RATING ¹ UL-94 (or equivalent ASTM test method) / ASTM E-84 / DIN 4102-1	HF-1 / Class 2 / B2

Approvals / Standards

¹Handi-Foam Standard Systems (1.75) are recognized by Underwriters Laboratories as meeting the requirements for a "UL-94 HF-1" classification. "Class 2" refers to materials which will achieve a Flame Spread of 75 or less and a Smoke Developed rating of 450 or less when tested according to ASTM E-84. DIN 4102-1 is a common European fire standard for building materials.

Handi-Foam package is patented under U.S. patent # 6,182,868.

Dispensing gun is patented under U.S. patent #6,345,776. Other foreign and domestic patents pending.

ODP (Ozone Depletion Potential): Contains non-ozone depleting, non-flammable HFC Propellant.

Theoretical Yield*

System	Standard 1.75 pcf Density
SYSTEM 17 <i>ITEM NO</i>	165 ft. ³ (4.7 m. ³) P22000
SYSTEM 27 <i>ITEM NO</i>	260 ft. ³ (7.4 m. ³) P22100
SYSTEM 60 <i>ITEM NO</i>	570 ft. ³ (16.1 m. ³) P22500
SYSTEM 100 <i>ITEM NO</i>	950 ft. ³ (26.9 m. ³) P22700

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

Tank Specifications (Per Tank)

	Systems 17 & 27	Systems 60 & 100
Capacity	27 gal. (102 l.)	120 gal. (454 l.)
Dimensions		
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.)
Empty Weight	120 lbs (54 kg.)	360 lbs (163 kg.)
Filled Weight*	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 from Fomo Products, Inc. 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 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. (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) for specific information. Prolonged inhalation exposure may cause respiratory irritation/sensitization and/or reduced pulmonary function in susceptible individuals. Onset may be delayed. Pre-existing respiratory conditions may be aggravated. Use only with adequate ventilation or 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 protective eyewear, impervious gloves, and suitable work clothing 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. 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.



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Fomo Products, Inc. p: 1 330.753.4585, 1 800.321.5585 f: 1 330.753.5199
e: info@fomo.com www: fomo.com