

TECHNICAL DATA SHEET



FOR PROFESSIONAL USE ONLY

Pour-in-Place Slow Rise Refillable Systems



Handi-Flow® Pour-in-Place Slow Rise Refill Systems are portable, two-component froth systems utilizing a non-flammable propellant. Handi-Flow® Pour-in-Place Foams are dispensed through the Handi-Gun® two-component dispensing unit. The product designation of "Pour-in-Place" refers to the slower curing, more "pour-able" properties of these froth foam systems. Compared to traditional "quick-cure" two-component spray foam products, these properties provide mold filling application advantages.

Application Areas

Handi-Flow® Pour-in-Place Slow Rise is specifically designed for filling cavities, molds, fixtures or holes where a slower curing and expanding polyurethane foam system is required. The foam can be dispensed into clean and dry voids of various size to insulate, fill, seal, strengthen, provide buoyancy, deaden sound and reduce vibration. The Handi-Flow® Pour-in-Place Slow Rise systems meet the Coast Guard specification requirements for flotation in Title 33 code of Federal Regulations, paragraph 183.114.

Application Limitation

Residential wall assemblies commonly surfaced with drywall or gypsum board may be prone to cracking or buckling due to either the user overfilling the cavity, plugging the insertion hole/pressure release holes too soon or drywall that was attached to the studs with short nails where minimal pressure could cause the nails to pull from the studs. In addition, there may be unknown obstructions within the wall cavity which will reduce the available volume and lead to overfilling.

Properties

Handi-Flow® Pour-in-Place Slow Rise Refill Systems expand and cure slowly within minutes after being dispensed (see Technical Data Table for cure times) to a semi-rigid closed cell foam caused by the chemical reaction of component A (isocyanate) with component B (a polyol blend). This slow expansion process allows the foam to completely fill into corners and void spaces to create a seamless, continuous insulation. The final expanded volume will be 3 to 5 times the dispensed volume in specific applications depending on various factors such as cavity size and ambient conditions.

Handi-Flow® Pour-in-Place Foam adheres to almost all building materials with the exception of surfaces such as polyethylene, polypropylene, 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°F to +240°F (-129°C 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-Flow® Pour-in-Place 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

Protect surfaces not to be foamed. For pouring or mold filling applications, clamping or bracing of the mold is generally required to provide uniform support against foaming pressure. Extent of this clamping should be determined based on application and desired results. For best results, it is advantageous to heat the mold substrate to 80°F - 100°F (27°C-37°C), as this will improve both the adhesion and the "flow ability" (filling characteristics) of the dispensed froth foam. Optimum chemical temperature is 75°F - 85°F (24°C-29°C). Read the enclosed operating instructions available in every A-tank collar or they can be found at www.fomo.com. Carefully read all cautions, warnings, and MSDS before use. Always refer to the local building codes before application of product.

Use

Pour-in-Place foam should be filled into cavities in excess of the theoretical "free-rise" volume. This is important in order that the foam is "packed" to a higher in-place density, thereby achieving optimum physical properties and dimensional stability. Mold pressure is difficult to predict. Mold pressure will be exerted by Pour-in-Place foam in nearly all applications. All molds need to be clamped or braced. The amount (weight) of foam needed to fill a particular cavity is often referred to as the 'shot time'. This can be roughly estimated by first knowing the volume of the cavity (size) and the desired in-place density of the foam (use 2.0 lb/ft³ as a starting point if the final in-place density is unknown). The following calculation shows how this information can be used to determine the approximate weight of foam needed:

Amount (weight) of foam needed in pounds = cavity size (ft.³) X desired density (lb./ft.³)

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.
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Technical Data

DENSITY ASTM D1622	2.00 lb/ft ³ (32 kg/m ³) FREE RISE DENSITY= 1.75 lb/ft³ (28 kg/m³)
K-FACTOR ASTM C518 - aged 28 day value	0.168 BTU-inch / ft ² ·h·°F (0.024 W/m·K)
R-VALUE (Metric RSI in parentheses)	5.9/inch (RSI=1.09/inch, 0.041/cm)
TENSILE STRENGTH ASTM D1623 Parallel @ 10% Perpendicular @10%	42 psi (289 kPa) 28 psi (193 kPa)
COMPRESSIVE STRENGTH ASTM D1621 Parallel @ 10% Perpendicular @ 10%	14 psi (96 kPa) 15 psi (103 kPa)
DIMENSIONAL STABILITY ASTM D2126 HEAT AGE: +158°F (70°C) HUMID AGE: +158°F (70°C), 100% RH COLD AGE: -4°F (-20°C)	-4.5% +1.0% -0.3%
CLOSED CELL CONTENT ASTM D2856	>90%
TACK-FREE / EXPANSION TIME	60 - 90 seconds
CUTTABLE	5-10 minutes
FULLY CURED	1 hour
DIN 4102.1	"B2" Building Material
TITLE 33 183.114	Meets the requirements for flotation

Approvals / Standards

Handi-Flow® Pour-in-Place Slow Rise systems meet the specification requirements for flotation in Title 33 code of Federal Regulations, paragraph 183.114 and meets the requirements of DIN 4102.1 for "B2" building material.

Processing Parameters

Product Storage (Store products in a dry area at room temp)	<120°F (49°C)
Application Temperature (Mold/Substrate)	80°F (27°C)- 100°F (37°C)
Chemical Temperature	75-85°F (24-29°C)

Theoretical Yield*

Refillable Tanks Slow Rise	Cubic Feet
System 17 P22045	128ft ³ (3.6 m ³)
System 27 P22245	213ft ³ (6.0 m ³)
System 60 P22445	458ft ³ (13.0 m ³)
System 100 P22645	787ft ³ (22.3 m ³)

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

Tank Specifications (Per Tank)

	Systems 17 & 27	Systems 60 & 100
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. 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 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.



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