

TECHNICAL DATA SHEET



Quick Cure Two-Component Polyurethane Foam

Handi-Foam Quick Cure Two-Component Polyurethane Foam is a multiple purpose two-component polyurethane froth 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 and the environment. The pre-pressurized, portable two-component froth 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 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. Standard free-rise density for Handi-Foam II-105, II-205 and II-605 systems is 1.75 lbs/ft³, with higher density systems available upon request to meet specific applications (see page 2 for system availability).

Properties

The patented and user-friendly II-105 and II-205 packaging system provides many unique advantages, including:

- Factory-attached dispensing hoses. No need to attach hoses prior to use.
- Handle is secured to tanks. No more handle popping out of box. No more tanks falling out of the box when wet.
- Easy to open box for immediate use.
- Hoses extend from top of tanks. More reach. More stability.

The II-605 is packaged with the A component and B component in separate boxes, due to the larger size.

Two-component froth foam 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 fully expands and dries tack-free within 30 - 60 seconds, is cuttable in 2-5 minutes and fully cures within 1 hour.

Handi-Foam adheres 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 to +200° F (-129 to +93°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. Shake kits well *before* using.

Application / Use

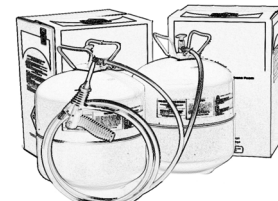
After following instructions for set-up, kits are ready to use. Valves must be in the upright position. Materials are dispensed through hoses and mixed in the disposable nozzle.

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 trigger. Once foaming process has stopped, the dispensing unit must be reactivated within 30 seconds or a new nozzle must be installed (multiple nozzles included with each kit). 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 mechanically.

Important Note: Use only in well ventilated area or with certified respiratory protection. Wear impervious gloves, protective eyewear 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 in cool dry area. Do not expose to open flame or temperatures above 120°F (49°C). Excessive heat can cause



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Technical Data

(Metric data shown in parentheses)	Standard Density 1.75 lbs/ft ³	2.5 lbs/ft ³
DENSITY ASTM D-1622	1.75 lbs/ft ³ (28 kg/m ³)	2.5 lbs/ft ³ (40 kg/m ³)
K-FACTOR ASTM C-518 (28 day aging)	0.162 BTU-inch / ft ² -h-°F (0.023 W/m·K)	0.165 BTU-inch/ft ² -h-°F (0.024 W/m·K)
R-VALUE	6.2/ inch (RSI=1.09/inch)	6.1/ 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)	N/A N/A
PERM RATING ASTM E-96 1" (2.54 cm) 3" (7.62 cm)	2.61 1.26	N/A N/A
TENSILE STRENGTH ASTM D-1623 Parallel	46 psi (317 kPa)	58 psi (400 kPa)
COMPRESSIVE STRENGTH ASTM D-1621 Parallel @ 10% Perpendicular @ 10%	27 psi (186 kPa) 18 psi (124 kPa)	32 psi (220 kPa) 21 psi (145 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%	+2.0% +3.2% -0.2%
CLOSED CELL CONTENT ASTM D-2856	>90%	>90%
TACK-FREE / EXPANSION TIME	30-60 second	30-60 second
CUTTABLE	2-5 minutes	2-5 minutes
FULLY CURED	1 hour	1 Hour
FIRE RATING¹ UL-94 (or equivalent ASTM test method) / ASTM E-84 / DIN 4102-1	HF-1 / Class 2 / B2	HF-1 / Class 2 / NA

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.

VOC Content: Contains no VOC's, according to currently accepted definitions.

Theoretical Yield*

Product	Standard 1.75 pcf 8.75 ft ³ (.25 m ³)	2.5 pcf 6.1 ft ³ (.18 m ³)
II-105 P10700	8.75 ft³ (.25 m³)	
II-75 P10695		6.1 ft ³ (.18 m ³)
II-205 P10720	17 ft³ (.48 m³)	
II-145 P10725		12 ft ³ (.34 m ³)
II-605 P10749	50 ft³ (1.42 m³)	
II-425 P10750		35 ft ³ (1.0 m ³)

*Yields are based on theoretical calculations, for comparison purposes, and will vary depending on ambient conditions and particular application. Model number generally reflects board feet volume in each kit.

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premature aging of components resulting in a shorter shelf life. Handi-Foam is reusable by following product instructions.

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 the manufacturer of all liability with respect to the materials or the use thereof.

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. This product is organic and therefore may constitute a fire hazard if improperly installed. 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 or a negative pressure half mask with organic vapor cartridge and dust/mist prefilters 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 clothes 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 may present a serious fire hazard if improperly used or allowed to remain exposed or unprotected. 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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