

ULTRA-THANE 400

RIGID POLYURETHANE FOAM

ULTRA-THANE 400 is a two component interior, spray-in-place closed cell, high density polyurethane foam insulation providing excellent structural performance.

Ultra-Thane 400 uses low GWP HFO blowing agent to expand the polyurethane polymer into a cellular insulation.

RECOMMENDED USES

- Cold Storage Vessels
- Insulated Structures

PACKAGING

Ultra-Thane 400 is sold in 1,000 lbs, two-component drum kits.

TECHNICAL DATA

NOMINAL CURED PHYSICAL PROPERTIES

Property	ASTM Standard	4.0 Density
Sprayed-In-Place Density	D1622	4.0
Compressive Parallel to Rise	C1621	90 psi
Tensile Strength	C1623	110 psi
Shear Strength	D273	70 psi
Closed Cell Content	D2856	>98%
Water Vapor Transmission	C355	1.8 perms
Water Absorption	D2842	.017

This information is intended only as a guide for design purposes. The values shown are the average values obtained from laboratory prepared samples and results may vary with application conditions, equipment and technician.

DIMENSIONAL STABILITY PROPERTIES

Days	°F	°C	% R.H.	AV
28	-20	-29	DRY	N/C
28	158	70	100%	+7%
28	158	70	DRY	+1%

BUILDING AND FIRE CODES

FIRE HAZARD CLASSIFICATIONS

Surface Burning ASTM E-84/UL 723

Flame Spread	<75
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PROCESSING GUIDE

PROCESSING CHARACTERISTICS

PROPERTY	SPRAYED*		
	Winter	Regular	Summer
Cream Time	1-2 Seconds	1-2 Seconds	1-2 Seconds
Rise Time	4-5 Seconds	5-6 Seconds	6-7 Seconds
Tack Free	On Rise	On Rise	On Rise
*Nominal 1" thickness sprayed through Gusmer Model H-11 proportioner with GX-7 Gun: preheat set at 120°F, hose heat set to maintain 120°F at the spray gun. Reaction times are influenced by mix efficiency of the spray gun, temperature of the components, ambient conditions and thickness of the foamed mass.			

LIQUID COMPONENT PROPERTIES

PROPERTY	4.0 DENSITY
Viscosity @ 77°F (25°C) Component A Component B	200 750
Specific Gravity @ 77°F (25°C) Component A Component B	1.24 1.18
Mix Ratio	50/50
*Nominal 1" thickness sprayed through Gusmer Model H-11 proportioner with GX-7 Gun: preheat set at 110°F, hose heat set to maintain 110°F at the spray gun. Reaction times are influenced by mix efficiency of the spray gun, temperature of the components, ambient conditions, and thickness of the foamed mass.	

REQUIREMENTS

Ultra-Thane 400 is a spray polyurethane foam system intended for installation by qualified contractors trained in the processing and application of systems, as well as the plural-component polyurethane dispensing equipment required to do so.

SUBSTRATE TEMPERATURE

Ultra-Thane 400 may be applied to surfaces with temperatures as low as 50°F (10°C) in most instances.

REACTIVITY GRADES AND TEMPERATURE RANGES

Winter	Winter	Regular
50-60°F	65-85°F	Above 90°F
10-15°C	18-30°C	Above 32°C

SUBSTRATE PREPARATION

For optimum results, surfaces to receive Ultra-Thane 400 should be clean and dry, free of dirt, oil, solvent, grease, loose particles, peeling coating and other foreign matter. Untreated ferrometallic substrates should be sandblasted in accordance with SSPC-SP6. Sandblasted surfaces should be primed immediately with an approved primer.

Galvanized and stainless steel surfaces should be treated with an appropriate wash primer prior to the application of Ultra-Thane 400.

Porous substrates such as wood and concrete may not require priming if surfaces are clean and dry with less than 10% moisture content. FOR BEST RESULTS ON SURFACES WHERE MOISTURE CONTENT CANNOT BE DETERMINED OR CONTROLLED, PRIMING IS RECOMMENDED. Consult General Coatings Manufacturing Corp. for specific application requirements.

EQUIPMENT

Proportioning equipment shall be manufactured specifically for the application of polyurethane foam. Mixing ratio by volume is 50 parts "A" to 50 parts "B". Equipment shall be of the heated airless type, capable of maintaining 120°F to 140°F (49 to 60°C) mixed material at the spray gun. Optimum spraying temperature will vary as a function of substrate and ambient conditions.

SPRAYING

Ultra-Thane 400 should be deposited in uniform passes ranging from ½" to 1". Pass thicknesses will vary as a function of substrate temperature, ambient air temperature and machine output. Ultra-Thane 400 bond best to itself when the previous pass is still warm (above 70°F [21°C]). Ultra-Thane 400 performs best when coated the same day of application, however it may be left exposed for up to 24 hours. In the event that Ultra-Thane 400 is exposed for a period greater than 24 hours, please contact General Coatings Manufacturing Corp. for recommendations.

CLIMATIC CONDITIONS: No spraying should be done when moisture is present in the form of rain, dew or relative humidity greater than 80%, or when there is wind in excess of 15 mph

SPECIAL NOTE

Particular attention must be paid to coating selection in cold storage or below 0°F (-18°C) freezer applications where a vapor drive may be present. Consult General Coatings Manufacturing Corp. technical service personnel for specific system recommendations.

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LIMITATIONS

Ultra-Thane 400 is specifically designed as insulation for construction applications where the end use ambient temperature range will be maintained from -100°F to 200°F (-73°C to 93°C). When considering any other use for this product, consult General Coatings Manufacturing Corp. for specific application recommendations.

ELASTOMERIC COATING

Ultra-Thane 400, when applied to exterior weathering surfaces, must be top coated with an approved elastomeric coating. All coatings shall be applied in accordance with General Coatings Manufacturing Corp. or other coating manufacturer's instructions.

THERMAL BARRIER

Application without a Prescriptive Thermal Barrier: The insulations may be installed without the 15-minute thermal barrier prescribed in IBC Section 2603.4 and IRC Section R316.4, when installed as described in this section.

JOB-SITE PROTECTION

Overspray from Ultra-Thane 400 can carry considerable distances and attention should be given to the following:

1. Post warning signs a minimum of 100 feet from the work area.
2. Cover all intake vents near the work area.
3. Minimize or exclude all personnel not directly involved with the spray application.
4. No welding, smoking or open flames.
5. Have CO₂ or other dry chemical fire extinguisher available at the jobsite.
6. Provide adequate ventilation.

LARGE MASSES of SPF should be removed to an outside safe area, cut into smaller pieces and allowed to cool before discarding into any trash receptacle.

As with all SPF systems improper application techniques should be avoided. Examples of improper application techniques include, but are not limited to excessive thickness of SPF, off-ratio material and spraying into or under rising SPF. Potential results of improperly installed SPF include: dangerously high reaction temperatures that may result in fire and offensive odors that may or may not dissipate. Improperly installed SPF must be removed and replaced with properly installed materials.

SHELF LIFE AND STORAGE

The shelf life of Ultra-Thane 400 is 6 months from the date of manufacture when stored in original unopened containers at temperatures from 50 to 75°F (10 to 24°C). Temperatures above 75°F (24°C) may decrease shelf life. Open drums with caution to prevent loss of blowing agent and potential personal chemical contamination. Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected. CO₂ or carbon dioxide created pressure can develop. Do not attempt to use contaminated material. Material temperature should be confirmed with a thermometer or an infrared gun.

FREIGHT CLASSIFICATION

Liquid Plastic Material - NOIBN

HEALTH AND SAFETY

A Safety Data Sheet (SDS) has been prepared on the Ultra-Thane 400. All personnel who will come in contact with the product should read and understand the SDS.

In addition to reading and understanding the SDS, all contractors and applicators must use appropriate respiratory, skin and eye Personal Protective Equipment (PPE) when handling and processing polyurethane chemical systems.

Spray Polyurethane Foam Alliance (SPFA®): AX-171 Course 101-R Chapter 1: Health, Safety and Environmental Aspects of Spray Polyurethane Foam and Coverings. www.sprayfoam.org

The Center for the Polyurethanes Industries (CPI): Model Respiratory Protection Program for Compliance with the Occupational Safety and Respiratory Protection Program Standard 29 CFR§1910134. www.spraypolyurethane.org.

PERSONAL PROTECTIVE EQUIPMENT

Ultra-Thane 400 requires personal protective equipment, such as, approved vapor cartridge respirator, safety glasses, gloves and protective clothing. Spray Foam (A-Side) contains polymeric MDI isocyanate, which is a vapor inhalation and skin hazard. See Safety Data Sheet for best practices and health risks.

VAPOR INHALATION

The best form of protection against organic solvents or potentially sensitizing vapors in the workplace is a fresh air supply. In well-ventilated roofing application conditions, the use of Type C organic vapor cartridge respirators is acceptable. For poorly ventilated conditions, full face masks or NIOSH/MSHA approved fresh air systems are recommended, like 3M and MSA.

Effects of overexposure to vapor are characterized by nasal and respiratory irritation, dizziness, nausea, headache, fatigue, possible unconsciousness or even asphyxiation. Vapor inhalation problems are characterized by coughing, shortening of breath and tightness in the chest. Anyone exhibiting these types of symptoms should be immediately removed from the workplace and administered oxygen or fresh air. If the condition is prolonged or extreme, SUMMON EMERGENCY TRAINED MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT

To prevent excessive skin contact with the sprayed product, we recommend use of fabric coveralls and neoprene or other resistant gloves. Skin contact with liquid components can result in a rash or other irritation. Wash the affected skin area with soap and water. Wipe residual liquid from the skin with a clean cloth, then wipe the affected area with 30% solution of rubbing alcohol. Follow the alcohol wipe with repeated washings with soap and water. If a rash or other irritation develops, see a physician.

EYE CONTACT

Wear a full-face mask or OSHA-approved protective goggles. Eye Contact with liquid or sprayed components can result in corneal burns or abrasions. Upon exposure, eyes should be flushed with water for an extensive period. Summon Emergency Trained Medical Attention Immediately.

TECHNICAL SERVICES

Additional information, such as brochures, technical assistance, roof energy evaluations, life cycle cost analysis, and other roof management services are also available from a General Coatings Manufacturing Corp. Technical Consultant.

CAUTION

This roofing insulation product is combustible under many fire conditions and is an exterior grade spray foam. Not intended or fire classified for interior use.

Limited Warranty: Please read all information in the General Guidelines, Technical Data Sheets, Guide Specifications and Safety Data Sheets (SDS) before applying material. These products are for professional use only and to be applied by professionals who have prior experience and training with the use and application of our materials, and who are fully aware of all Federal, State and local rules, regulations, and code requirements for storage, transportation, handling, installation, and application. Published technical data and instructions are subject to change without notice. Contact your local representative or visit our website for current technical data, SDS, instructions, and project specific recommendations. We warrant our products to be free of manufacturing defects and that they will meet our current published physical properties within the shelf life of products.

Our sole responsibility shall be to replace that portion of the product which proves to be defective. There are no other warranties of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. We will not be liable for damages of any sort, including remote or consequential or punitive damages resulting from any claimed breach of any warranty whether expressed or implied. We will also not be responsible for use of this product in a manner to infringe on any patent held by others. No warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, adhesion, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. We reserve the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator. Your sole and exclusive remedy against us shall be limited to the paid cost of the materials sufficient to replace any affected areas where product failure has occurred. The cost of replacement materials shall, in no event, exceed the value of the original purchase price of the products, subject to equitable reductions for time of use.

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