GENERAL COATINGS MANUFACTURING CORP.

TECHNICAL DATA SHEET
FOR PROFESSIONAL CONTRACTOR USE ONLY

ULTRA-THANE 205 HFO WALL
SPRAY POLYURETHANE FOAM

ULTRA-THANE 205 HFO WALL is a two component interior, spray-in-place closed cell, medium density polyurethane foam insulation providing superior performance in minimizing heat transfer, condensation and air leakage.

Ultra-Thane 205 HFO Wall is based on Low GWP hydrofluro-olefin (HFO) Technology to expand the polyurethane polymer into a cellular insulation.

RECOMMENDED USES

COLD STORAGE: Ultra-Thane 205 HFO Wall Foam is the insulation of choice for maintaining the climate controlled conditions and for mitigating condensation in cold storage and freezer buildings.

TANK INSULATION: Ultra-Thane 205 HFO Wall Foam is an excellent rigid thermal insulation for constant temperature requirements.

PACKAGING

Ultra-Thane 205 HFO Wall Foam is sold in 975 lb, two-component drum kits. Side-A totes are available upon request.

TECHNICAL DATA

PHYSICAL PROPERTIES

Property	ASTM Standard	2.0 Density
Sprayed-In-Place Density	D1622	2.03
R-Value aged (1.0-inch thickness)	C518	6.7
R-Value aged (3.0-inch thickness)	C518	21
Compressive Strength	C1621	35 psi
Tensile Strength	D1623	58 psi
Shear Strength	C273	45
Closed Cell Content	D1940	93%

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.
Typical density for wall foam is 2.0 pcf. For higher density, exterior foams, see ULTRA-THANE 230 ROOF FOAM data sheet.

DIMENSIONAL STABILITY PROPERTIES

Days	°F	°C	% R.H.	AV
28	-20	-29	DRY	N/C
28	158	70	100%	-10%

BUILDING AND FIRE CODES

FIRE HAZARD CLASSIFICATIONS*	
Surface Burning ASTM E-84/UL 723	
Flame Spread 25	Smoke 200
Flame Spread Classification	
NFPA CLASS A	UBC CLASS 1
*These numerical flame spread ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.	

- Intertek in CCRR 0375 evaluated and listed.
- Meets building codes: IBC, IRC and IECC
- Interior use only and must be protected by a 15-minute rated thermal barrier or as permitted by building codes.

PROCESSING GUIDE

PROPERTY	SPRAYED*	
Reactivity Grades	**Winter**	**Regular**
Cream Time	1-2 Seconds	1-2 Seconds
Rise Time	4-5 Seconds	5-6 Seconds
Tack Free	On Rise	On Rise
*Specific reaction times and densities are available by request.		

LIQUID COMPONENT PROPERTIES	
Property	**2.0 Density**
Color Component A Component B	 Dark Brown Amber/Brown
Viscosity @ 77°F (25°C) Component A Component B	 200 650
Specific Gravity @ 77°F (25°C) Component A Component B	 1.24 1.18
Mix Ratio A/B	50/50
Nominal 1" thickness sprayed through Graco Reactor E-30 proportioner with Fusion AP Gun, AR 4242 mixing chamber: 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.	

REQUIREMENTS

Ultra-Thane 205 HFO Wall is a sophisticated plural component building product which should be applied only by trained and manufacturer-approved insulation experts familiar with the properties of this material.

SUBSTRATE TEMPERATURE

Ultra-Thane 205 HFC Wall may be applied to surfaces with temperatures as low as 30°F (-1.1°C) in most instances.

REACTIVITY GRADES AND TEMPERATURE RANGES	
Winter	**Regular**
30 to 50°F -1.1 to 10°C	50°F to above 90°F 10 to above 32°C

SUBSTRATE PREPARATION

For optimum results, the interior surfaces should be clean and dry, free of dirt, oil, solvent, grease, loose particles, peeling coating and other foreign matter. For tanks, untreated ferro-metallic 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 205 HFO Wall.

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, AN EPOXY SEALING PRIMER IS RECOMMENDED.** Consult General Coatings Manufacturing Corp. for specific application requirements.

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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 205 HFO Wall should be installed in uniform layers ranging from 1/2" to 2" maximum pass thickness. Foam application thicknesses will vary as a function of substrate temperature, humidity, and applicator technique. Ultra-Thane 205 HFO Wall bonds best when previous pass is still warm (above 70°F). Ultra-Thane 205 HFO Wall must be coated with thermal barrier or ignition barrier during the same day of application. For exterior tanks, it may be left exposed for up to 24 hours before coating system installation.

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 for exterior tank application.

SPECIAL NOTE
Particular attention must be paid to exterior coating selection in tank applications where a vapor drive exists. Consult General Coatings Manufacturing Corp. technical service personnel for specific system recommendations.

LIMITATIONS
Ultra-Thane 205 HFO Wall is specifically designed for construction applications where the end use ambient temperature range will be maintained between -100°F to 200°F (-73 to 93°C). When considering any other use for this product, consult General Coatings Manufacturing Corp. for specific application recommendations.

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. The insulation must be covered with one of the following coatings:

- DC315: Maximum thickness of foam plastic of 8 inches on walls and 12 inches on ceilings, covered on all surfaces with DC315 applied at 18 wet mils (1.12 gal/100 ft^2).
- No Burn Plus ThB: Maximum thickness of foam plastic of 6-1/2 inches on walls and 9-1/2 inches on ceilings, covered on all surfaces with No Burn Plus ThB applied at 14 wet mils (0.90 gal/100 ft^2)

VAPOR RETARDER
Ultra-Thane 205 HFO Wall is intended for indoor applications, and is not a vapor retarder. It is vapor permeable and will allow for some diffusion of moisture through the insulation. The following considerations are needed:
(1) A vapor retarder needs to be considered in the design of the building envelope in cold climates, such as zones 4 and higher in the U.S., as defined in 2004 Supplement to the IRC®, Table N 1101.2; (2) A vapor retarder also needs to be considered where high interior humidity conditions exist.

JOB-SITE PROTECTION
Applicators should ensure the safety of the job-site and construction personnel by posting appropriate signs warning that all "hot work" such as welding, soldering, and cutting with torches should not take place until a thermal barrier or approved equivalent is installed over any exposed polyurethane foam.

Contractors should communicate with other trades working in proximity to the spray application area. Appropriate warning signs at each entryway must be posted that clearly indicates that spray foam activity is taking place and proper respiratory protection is required to enter. Non SPF personnel and occupants should be vacated from the building during the application of SPF. Proper Ventilation during is required during spraying and afterwards, at minimum 10 Air changes per hour.

Re-Entry: 2 hour ventilation period before personal protective equipment is no longer required for trades and inspectors.

Re-Occupancy: after 24 hours.

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.

FREIGHT CLASSIFICATION
Liquid Plastic Material - NOIBN

SHELF LIFE AND STORAGE

The shelf life of Ultra-Thane 205 HFO Wall is 3 months from the date of manufacture when stored in original unopened containers at temperatures between 50–75°F (10-24°C). Note: Storage for prolonged periods of time at high temperatures may alter the reactivity profile of the product. Additionally, storing the B component at increased temperatures or in direct sunlight for prolonged periods may cause a buildup of pressure in the storage vessel. Use caution in opening containers of Ultra-Thane 205 HFO Wall. Containers should be opened slowly to allow the release of any pressure buildup. Material temperature should be confirmed with a thermometer or an infrared gun.

HEALTH & SAFETY

A Safety Data Sheet (SDS) has been prepared on the Ultra-Thane 205 HFO Wall. 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 205 HFO Wall requires personal protective equipment, such as, approved full face fresh air breathing system, gloves and coveralls. 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. Numerous manufacturers, including the 3M Company and MSA, make full face fresh air masks. For maximum protection, we recommend use of NIOSH/MSHA approved self-contained breathing apparatus with a full-face piece operated in a positive pressure mode. In well-ventilated application conditions, the use of Type C organic vapor cartridge respirators is acceptable.

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 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.

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