

# ULTRA-THANE 050 MAX

## SPRAY POLYURETHANE FOAM

ULTRA-THANE 050 MAX is a cutting-edge, high-yield, two component open-cell spray polyurethane foam. Its unique solution based chemistry does not require aggressive agitation like other ultra-light density insulation foams.

It's a 0.45 pcf, water blown insulation that will improve the performance of the building envelope for commercial, residential and industrial applications. When installed, the cellular insulation expands and seals voids, gaps and crevices to create a custom fit air barrier.

### RECOMMENDED USES

- Ceilings
- Crawl Spaces
- Floors
- Unvented Attics
- Vented Attics
- Walls

### PACKAGING

Ultra-Thane 050 Max is sold in 950 lb, two-component drum kits.

### TECHNICAL DATA

#### NOMINAL CURED PHYSICAL PROPERTIES

Property	ASTM Standard	050 Max
Core Density	D1622	0.45 pcf ± 0.05
R-Value aged (1.0-inch thickness)	C518	4.2
R-Value aged (3.5-inch thickness)	C518	13
Tensile Strength	D1623	5 psi
Water Vapor Permeance	E96	9 perms
Air Permeance @ 3.5"	ASTM E2178 @75 PA	0.0431
Dimensional Stability	ASTM D2126	<14.7%

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.

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.

#### FIRE HAZARD CLASSIFICATIONS\*

##### Surface Burning ASTM E-84/UL 723

Flame Spread 10	Smoke 250
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##### Flame Spread Classification

NFPA CLASS A	UBC CLASS 1
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- Intertek in CCRR 0358 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.

LIQUID COMPONENT PROPERTIES	
Property	050 Max
Color Component A Component B	Dark Brown Amber
Viscosity @ 77°F (25°C) Component A Component B	200 380
Specific Gravity @ 77°F (25°C) Component A Component B	1.24 1.10
Mix Ratio A/B	50/50

## REQUIREMENTS

Ultra-Thane 050 Max 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 050 Max may be applied to surfaces with temperatures as low as 50°F (10°C) in most instances. Please consult with General Coatings Manufacturing Corp. technical representatives for certain requirements.

## SUBSTRATE PREPARATION

Substrate must be clean and dry and substrate moisture must not exceed 18%. When heating up a house with portable heaters, only heat up to 50°F (10°C), otherwise condensation may form on plywood. If metal substrate, only heat up to 45°F (7.2°C). Never use a portable propane powered heater.

## 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 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.

2:1 transfer pumps are recommended for material transfer from container to the proportioner. The plural component proportioner must be capable of supplying each component within ± 2% of the desired 1:1 mixing ratio by volume.

Hose heaters should be set to deliver 115°F to 140°F (46 to 60°C) materials to the spray gun. These settings will ensure thorough mixing in the spray gun mix chamber in typical applications. Optimum hose pressure and temperature will vary with equipment type and condition, ambient and substrate conditions, and the specific application. Some equipment may require you to warm containers to achieve optimum material temperature. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that relates to acceptable combinations of gun chamber size, proportioner output, and material pressures. The relationship between proper chamber size and the capacity of the proportioner's pre-

heater is critical. Material in containers should be maintained at 75°F to 90°F while in use.

## PROCESSING PARAMETERS

Ultra-Thane 050 Max is designed for an application rate of 1 inch minimum to 6 inches maximum per pass. Once installed material has cooled, it is possible to add additional layers to achieve the required installed thickness. Ultra-Thane 050 Max is not designed for use as an exterior roofing system.

Ultra-Thane 050 Max is designed for installation in most standard construction configurations using common materials such as, concrete, metal, wood and wood products. Foam plastic installed in walls or ceilings may present a fire hazard unless protected by an approved, fire-resistant thermal barrier with a finish rating of not less than 15 minutes as required by building codes. Rim joists/header areas in accordance with the IRC® and IBC®, may not require additional protection. Foam plastic must also be protected against ignition by code-approved materials in attics and crawl spaces.

To ensure optimum performance, a minimum pass of 1" is recommended with no limit pass thickness. All substrates must be dry at time of application.

As with all SPF systems, improper application techniques should be avoided and any defective product replaced with properly installed materials. Examples of improper application techniques include but are not limited to, excessive application thickness, off-ratio material and spraying into or under rising liquid foam. Potential hazards of excessive application thickness are dangerously high cure temperatures that may result in fire. Any large masses of SPF should be removed to an outside safe area, cut into smaller pieces and allowed to cool before discarding into trash receptacle. Additionally, off-ratio spray foam can result in strong and persistent odor.

PROCESS SETTINGS	
Chemical Drum Temp. Above 75-90°F (24-32°C)	
Pre-Heat: ISO (A)	122°F to 133°F (50 to 56°C)
Pre-Heat: Resin (B)	125°F to 136°F (51 to 58°C)
Hose Heat:	119°F to 130°F (48 to 54°C)
Spray Pressure	1200 to 1400 psi (dynamic)

\*Important notice regarding yield and density. Many factors affect yield, including substrate temperature, substrate type, and pass thickness. Multiple passes will significantly reduce yield. Larger mixing chamber sizes and higher pressure settings will also reduce yield.

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#### 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:

- Ultra-Thane 050 Max insulation must be a maximum of 8-1/2 inches on walls and 14 inches on ceilings and be covered on all surfaces with DC315 applied at 18 wet mils (1.13 gal/100ft<sup>2</sup>).
- Ultra-Thane 050 Max insulation must be a maximum of 8 inches on walls and 14 inches on ceilings and be covered on all surfaces with DC315 applied at 21 wet mils (1.31 gal/100 ft<sup>2</sup>).
- Ultra-Thane 050 Max insulation must be a maximum of 8- 1/2 inches on walls and 14 inches on ceilings and be covered on all surfaces with No Burn Plus ThB applied at 14 wet mils (0.90 gal/100 ft<sup>2</sup>). The coating must be applied over the insulation in accordance with the coating manufacturer's instructions and this report. Surfaces to be coated must be dry, clean, and free of dirt, loose debris and other substances that could interfere with adhesion of the coating. The coating is applied with low-pressure airless spray equipment.

#### IGNITION BARRIER

Large Scale Fire Testing: Ultra-Thane 050 Max is tested and approved in accordance to AC 377 (NFPA® 286) Appendix "X" with 6 wet mils, 4 dry mils of DC 315® ignition barrier. \*Ultra-Thane 050 Max is tested and approved in accordance to NFPA® 286 with 21 wet mils, 14 dry mils of DC 315® thermal barrier.

#### VAPOR RETARDER

Ultra-Thane 050 Max 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 spraying and afterwards at minimum 10 Air change 50 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.

#### SHELF LIFE AND STORAGE

The shelf life of Ultra-Thane 050 Max is 6 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 050 Max. 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.

#### FREIGHT CLASSIFICATION

Liquid Plastic Material - NOIBN

## HEALTH & SAFETY

A Safety Data Sheet (SDS) has been prepared on the Ultra-Thane 050 Max. 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](http://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](http://www.spraypolyurethane.org).

## PERSONAL PROTECTIVE EQUIPMENT

Ultra-Thane 050 Max 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.

## CAUTION

**The use of foamed plastic in interior applications on walls or ceilings may present an unreasonable fire hazard unless the foam is protected by an approved, fire-resistant thermal barrier which has a finish rating of no less than 15 minutes. Rim joists/header areas in accordance with the IRC® and IBC®, may not require additional protection. Foam plastic must also be protected against ignition by code-approved materials in attics and crawl spaces.**

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**LIMITED WARRANTY.** We warrant our Products to be free of manufacturing defects and to comply with the Product's current published physical properties when tested under controlled conditions. Our sole responsibility is limited to replacement of that portion of any Products found to be defective at the time of manufacture. There are no other warranties of any nature whatsoever, whether expressed or implied, including an express disclaimer of any warranty of merchantability or fitness for a particular purpose. Further, we disclaim any liability for damages of any type, however caused, including remote, consequential damages, or special damages resulting from any theory of liability, whether based on tort, negligence, or strict liability. We disclaim responsibility for any claims of intellectual property infringement through use of our Products in any manner. Where Products are used as a waterproofing membrane or floor coating, no warranty or guarantee is issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, abnormal wear and tear, or improper application by the applicator. Damage caused by abuse, neglect, lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded. In all instances and as a pre-condition to any available remedy, we reserve the right to conduct sample testing and performance analysis on any materials claimed to be defective, performed prior to any repairs being made by owner, general contractor, or applicator. Our limited warranty is void if repairs have been made or attempted, or if the claimed defect has been adulterated prior to our ability to conduct a formal investigative analysis.

**DISCLAIMER:** Please read all information in the general guidelines, technical data sheets, application guide and safety data sheets (SDS) before applying material. Products are for professional use only and should only be applied by professionals who have prior experience with our Products or have undergone specific training in their proper application. Published technical data and instructions are subject to change without notice. Contact your local representative or visit our website for current technical data and instructions. All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of these tests are not guaranteed and are not to be construed as a warranty, either expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with any product. It is the user's responsibility to satisfy himself, by his own information and tests, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his own use of the product. We do not suggest or guarantee that any hazards listed herein are the only ones that may exist. We are not liable to the purchaser, end-user, or any third party for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, our Products. Recommendations or statements, whether verbal or in writing, shall not be binding upon us unless in writing and signed by one of our authorized corporate officers. Technical and application information is provided for establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and we make no claim that these tests or any other tests, accurately represent all environments. We are not responsible for typographical errors. © General Coatings Manufacturing Corporation. All Rights Reserved. Revision ULTRA-THANE 050 MAX\_08172020.EA