

# ULTRA-TUFF 2200

## AROMATIC POLYUREA PROTECTIVE COATING

**ULTRA-TUFF 2200** is a fast setting, rapid curing, 100% solids, flexible, aromatic, two component spray polyurea that can be applied to suitably prepared concrete and metal surfaces. It has extremely fast gel time making it suitable for applications down to -20°F (-28.89°C).

Ultra-Tuff 2200 may be used as a vapor barrier or as a durable protective base coat. Ultra-Tuff 2200 should be top-coated within six hours of application with an aliphatic polyurethane or polyaspartic coating for a colorfast finish.

### RECOMMENDED USES

- Insulated Tanks
- Cold Storage
- Food Processing Facilities
- Metal

### PACKAGING

10-gallon kit: A-Side 5 gallon (47 lbs net) and B-Side 5 gallons (43 lbs net) pail

110-gallon kit: A-Side 55 gallon (477 lbs net) and B-Side 55 gallon (430 lbs net) drum

### COLORS

Clear/Neutral. Custom colors are available upon request. Color Packs, when used, must be added to Side-B. Due to its aromatic composition, Ultra-Tuff 2200 will tend to yellow, darken in color, become flat after exposure to UV light.

### TECHNICAL DATA

#### PHYSICAL PROPERTIES (BASED ON DRAW DOWN FILM)

Property	ASTM-Test Method	Value
Total Solids by Volume ASTM D2697		100%
Total Solids by Weight ASTM D-2369		100%
Mix Ratio by Volume		1 : 1
Viscosity at 150-160°F (66.5-71°C) Side-A Side-B		160 ± 20 cps 40 ± 20 cps
Density (Side A & B combined)		8.55 lbs/gal
Pot Life @75°F (24°C), 50% RH		5-10 Seconds
Flash Point	ASTM D56	> 200°F (93.3°C)
Elongation, @77°F (25°C), Shore D	ASTM D412	450% ± 50%
Tensile Strength @ 100%	ASTM D412	3200 ± 200 psi
Tear Resistance	ASTM D412	>325 ± 50 pli
Hardness	ASTM D2240	90 ± 5

*The information contained herein is for purposes of identifying the product and does not constitute a warranty that the product will conform to that description. Product specifications and performance will vary depending on application methodologies, raw materials and other factors. (\*These physical properties from sample sprayed with Graco EXP2 @ 2000 psi minimum, with Fusion Gun AP4242 @ 150-160°F (65°C to 71°C) blistering. Color change, gloss reduction & chalking are noted. Different machine and parameter will change these properties. User should perform their own independent testing as properties are approximate).*

### REQUIREMENTS

Ultra-Tuff 2200 is a two component spray polyurea which should be applied only by trained or manufacturer-approved roofing experts familiar with the properties of this material.

## EQUIPMENT

Ultra-Tuff 2200 should be applied using a plural component (1:1 ratio), heated, high pressure (2500 psi) spray mixing equipment like Graco's Reactor series with Fusion gun or other equivalent machine may be used.

COVERAGE RATE	
Property	Value
Coverage	1 mil thickness is one gallon per 1600 sqft.
Performance, Vapor Retarder, Class II	35 to 50 DFT mils
Performance, Vapor Retarder, Class I	Minimum 80 DFT mils
Tack Free Time (substrate dependent)	40-60 Seconds
Recoat Time	0-6 Hours
Final Cure	30 days
Service Temperature - Dry	-40°F to 250°F (-40°C to 121°C)
Service Temperature - Wet	40°F to 120°F (4.44°C to 48.89°C)

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## APPLICATION

Remove all oil, grease, weld spatters and round off any sharp edges from surface. Prime and shoot Ultra-Tuff 2200 onto any bare metal the same day as it is cleaned to minimize any potential flash rusting.

Both Side-A and Side-B materials should be preconditioned to 75-80°F (24-27°C) before application. Recommended surface temperature must be at least 5°F (3°C) above the dew point. Both Side-A and Side-B materials should be sprayed at a minimum of 2000 psi and at temperatures above 150°F (66°C). Adequate pressure and temperature should be maintained at all times. Ultra-Tuff 2200 should be sprayed in smooth, multi-directional passes to improve uniform thickness and appearance.

It may be applied in single or multiple applications without appreciable sagging and is relatively insensitive to moisture and temperature allowing application in most temperatures.

## MIXING

Ultra-Tuff 2200 may NOT be diluted under any circumstances. The volume mixing ratio: 1A:1B Thoroughly mix Ultra-Tuff 2200 Side-B with air driven power equipment until a homogeneous mixture and color is achieved. The combined components should be thoroughly blended using a mechanical mixer at slow speed or for at least 5 minutes if mixed by hand.

## SURFACE PREPARATION

In general, coating performance and adhesion are directly proportional to surface preparation. Most failures in the performance of surface coatings can be attributed to poor surface preparation. Polyurea coatings rely on the structural strength of the substrate to which they are applied.

All surfaces must be free of dust, dirt, oil, grease, rust, corrosion and other contaminants. When coating substrates previously used, it is important to consider the possibility of substrate absorption, which may affect the adhesion of the coating system, regardless of the surface preparation. General Coatings Manufacturing Corporation recognizes the potential for unique substrates from one project to another. The following information is for general reference. For project-specific questions, contact GCMC.

### SPRAY POLYURETHANE FOAM

Ultra-Tuff 2200 may be applied directly to newly cured Ultra-Thane 230 foam. Do not use a solvent-based primer.

### ALUMINUM

Aluminum should be blasted with aluminum oxide or sand, and not with steel or metal grit. Excessive blasting may result in a warped or deformed surface. After blasting, wash aluminum with a commercially available aluminum cleaner. Allow to dry, then prime. Contact GCMC for recommended primer.

### CAST IRON

Blast with a steel grit and degrease before priming. Old cast iron is difficult to prepare for a satisfactory bond. It can absorb oil and water soluble contaminants that will keep returning to the surface after the coating system has been applied and affect the coating system adhesion. An adhesion test is recommended prior to starting the project.

### GALVANIZED

Clean and degrease any contaminated surfaces before priming. Do not blast galvanized surfaces with an abrasive grit. An adhesion test is recommended prior to starting the project.

### STEEL

Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Optimum surface profile is 3-4 mils.

### STAINLESS STEEL

Stainless steel may be grit blasted and degreased before priming. Contact GCMC for recommended primer. Some stainless steel alloys are so inert that it is not possible to achieve a satisfactory bond. An adhesion test is recommended prior to starting the project.

### ALL OTHER SURFACES

An adhesion test is recommended prior to starting the project.

## PERSONAL PROTECTIVE EQUIPMENT

Since the Ultra-Tuff 2200 is atomized into a very fine particle distribution during spray application, it is essential that maximum effort is made to protect the spray mechanic and others near the workplace from undue exposure. Side-A Ultra-Tuff 2200 is polymeric isocyanate and, as such, can be very sensitizing, particularly from the standpoint of VAPOR INHALATION. Some other ingredients may be sensitizing from the stand-point of SKIN CONTACT OR EYE CONTACT.

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#### JOB-SITE PROTECTION

Overspray from Ultra-Tuff 2200 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 CO<sub>2</sub> or other dry chemical fire extinguisher available at the job-site.
6. Provide adequate ventilation.

#### SHELF LIFE AND STORAGE

Ultra-Tuff 2200 has a shelf life of one (1) year from date of manufacture in original, factory-sealed containers when stored indoors at a temperature between 60-95°F (15-35°C). Side-A and Side-B drums are recommended to be stored above 60°F (15°C). Avoid freezing temperatures. Store drums on wooden pallets to avoid direct contact with the ground. If stored for a long period of time, rotate Side-A and Side-B drums regularly.

#### FREIGHT CLASSIFICATION

Liquid Plastic Material - NOIBN

#### HEALTH & SAFETY

GCMC is committed to the health and safety of our customers. GCMC products shall only be installed by certified contractors. Applicators are required to follow all proper handling, safety and installation procedures. Safety Data Sheets (SDS) are available on this material. Any individual who may come in contact with these products should read and understand the SDS. Avoid breathing of vapor or spray mist. Care should be taken to exclude all personnel not directly involved with the spray application. Ultra-Tuff 2200 should not be applied when the wind is of sufficient velocity to cause overspray of adjacent areas, buildings or people.

#### 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, and management services are also available from a General Coatings Manufacturing Corp. Technical Consultant.

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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-TUFF 2200\_09092020EA