

March 31, 2020

Robert Kit Plane
Amtech Solutions, Inc.
1720 South Bellaire Street
Suite 1200
Denver, CO 80222

**Subject: PRODUCT SUBSTITUTION APPROVAL REQUEST
POUDRE SCHOOL DISTRICT R-1 – ROOF RECOATING PROJECT**

Dear Mr. Plane,

This letter is a request for substitution approval of General Coatings Manufacturing Corps' polyurethane foam roofing system products on the Roof Recoating project for Poudre School District in Fort Collins, CO. We respectfully request that you review the enclosed data for Ultra-Thane 230 polyurethane foam insulation, Ultra-Tuff 2500 urethane base coating, and Ultra-Shield 3300 aliphatic urethane top coating. We are confident that you will find that these products meet or exceed the performance and physical properties of your specifications.

General Coatings has manufactured polyurethane foam and coatings for over 30 years and is a prominent supplier of these products throughout the United States. General Coatings has an extensive list of competent, pre-qualified Contractors that service the Colorado marketplace.

Ultra-Thane 230 polyurethane foam is a two component sprayed-in-place rigid monolithic system and is used extensively as an excellent thermal insulation, roofing, and waterproofing product. Ultra-Tuff 2500 is a 100% solids, fast-set, two-component, elastomeric aromatic, urethane protective coating. Ultra-Shield 3300 is a single-component, moisture cured, polyurethane protective coating specifically designed to protect construction surfaces from the effects of weather and moisture. The outstanding features of Ultra-Shield 3300 are its high solids content, rapid cure and superior physical properties. Altogether, this foam and coating system has a history of superior quality and sustainability.

Below is a side-by-side comparison showing the equality, if not superiority of General Coatings' products.

	General Coatings (Requesting Approval)	Specified Minimum Properties
Physical Properties	Ultra-Thane 230	
Density (Core)	3.0 pcf	3.0 pcf
Compressive Strength	50-60 psi	55 psi
Tensile Strength	90 psi	80 psi
Water Absorption	.017 psf	.01-.03 psf
Shear Strength	50-60 psi	30-50 psi
Closed Cell Content	98%	90%
Flame Spread	<75	<75
K-Factor	0.16	0.158
R-Value	6.3 per inch	6.3 per inch

	General Coatings (Requesting Approval)	Specified Minimum Properties
Physical Properties	Ultra-Tuff 2500	Base Coat
Volume Solids	100%	
Tensile Strength	2000 psi	1,000 psi
Permanent Set	9%	<10%
Tear Resistance	150 pli	100 pli
Elongation	100% ± 25	375%
Water Resistance	<1.5%	<3%
Hardness, Shore A	90	50-55

	General Coatings (Requesting Approval)	Specified Minimum Properties
Physical Properties	Ultra-Shield 3300	Top Coat
Tensile Strength	3,500 psi ± 300	2,300 psi
Elongation	200%	230%
Tear Resistance	400 pli ± 50	200 pli
Hardness, Shore A	95	85
Moisture Vapor Transmission	0.306 perms	0.9 perms
Fire Resistance	Pass	Pass

There shall be no required changes to the contract documents or any variations in available inspection, maintenance, repair, and replacement services. There is no cost difference between the specified products and the proposed substitution. There shall be no change to the substantial completion time. There will be no license fee or royalty necessary in order to use the proposed substitution. This product substitution is in accordance with all conditions of the specification section 07 5700. Finally, General Coatings will provide an equivalent product warranty for the specified timeframe.

If you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

UNIVERSAL COATINGS INC.

Kim L. Nulick
Executive Vice President



ULTRA-THANE 230
ROOFING

RIGID POLYURETHANE FOAM

PRODUCT DESCRIPTION

ULTRA-THANE 230 is a two component spray-in-place rigid monolithic polyurethane foam insulation. This product can be formulated in a variety of densities to accommodate a broad range of applications. ULTRA-THANE 230 contains no ozone-depleting chemicals.

USES

ROOFING: ULTRA-THANE 230 is used extensively as a superior thermal insulation and waterproofing product for new and remedial roofing.

COLD STORAGE: ULTRA-THANE 230 is the insulation of choice for maintaining the rigid climatic conditions of many cold storage buildings.

TANK INSULATION: ULTRA-THANE 230 is an excellent insulation for hot and cold storage vessels.

BUILDING AND FIRE CODES

Local Building Authority should be consulted if ULTRA-THANE 230 is used as an insulation material on interior applications.

ULTRA-THANE 230 is listed and complies with the California State Fire Marshall

ULTRA-THANE 230 has been independently tested (Report #: 319356MDI-002) and evaluated by ICC and determined to meet the following building codes: IBC, IRC and IECC. Additionally ULTRA-THANE 230 meets the "Standard Test Methods for Fire Tests of Roof Coverings" and exceeds ASTM E84/UL 790 (A) and ASTM E108/UL 723 fire ratings.

Fire Hazard Classifications*

SURFACE BURNING ASTM E-84/UL 723		FLAMMABILITY ROOF DECK CONSTRUCTION ASTM E-108/UL 790	
Flame Spread	<75	Class A	New Construction
		Class A	Maintenance and Repair

*These numerical flame spread ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.

Liquid Component Properties

PROPERTY	DENSITY			
	1.5	2.0	2.5	3.0
Viscosity 25°C				
Component A	200	200	200	200
Component B	200	340	500	625
Specific Gravity 25°C				
Component A	1.24	1.24	1.24	1.24
Component B	1.18	1.20	1.19	1.18
Mix ratio by volume (A/B)	50/50	50/50	50/50	50/50

Processing Characteristics

PROPERTY	72°F(HAND MIX)			SPRAYED*		
	Winter	Regular	Summer	Winter	Regular	Summer
Cream Time	4 Sec.	5 Sec.	6 Sec.	1-2 Sec.	1-2 Sec.	1-2 Sec.
Rise Time	15-16 sec.	19 sec.	22 sec.	4-5 sec.	5-6 sec.	6-7 sec.
Tack Free	On Rise	On Rise	On Rise	On Rise	On Rise	On Rise

*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.

Nominal Cured Physical Properties

PROPERTY	ASTM TEST METHOD	DENSITY		
		2.0	2.5	3.0
Sprayed-in-place Density	D-1622	2.0	2.5	3.0
K-factor Aged	C-518	.14	.15	.16
Compressive Strength	D-1621	26 psi	45 psi	50-60 psi
Tensile Strength	D-1623	45 psi	60 psi	90 psi
Shear Strength	C-273	35 psi	45 psi	50-60 psi
Closed Cell Content	D-1940	93%	95%	98%
Water Vapor Transmission	C-355	1.9 perms	1.8 perms	1.8 perms
Water Absorption	D-2842	.019	.017	.017
Wind Uplift	FM-4470	>I-450	>I-450	>I-450

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.

K-Factor varies depending on age and use conditions.

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Dimensional Stability Properties

ASTM D-2126

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

SHELF LIFE

Shelf life of **ULTRA-THANE 230** is 6 months from the date of manufacture when stored in original unopened containers at temperatures between 50° - 75° F. Temperatures above 75° F may decrease shelf life.

FREIGHT CLASSIFICATION

Liquid Plastic Material -- NOIBN

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-resistive thermal barrier which has a finish rating of not less than 15 minutes.

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Processing Guide

DESCRIPTION AND GENERAL USE

ULTRA-THANE 230 systems are light density spray polyurethane insulations designed to be fluid-applied to construction surfaces to effect a permanent, monolithic and dimensionally stable thermal insulation.

ULTRA-THANE 230 systems are 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.

ULTRA-THANE 230 systems are specifically designed as insulation for construction applications where the end use ambient temperature range will be maintained between -100°F and 225°F. When considering any other use for this product, consult **General Coatings Manufacturing Corp.** for specific application recommendations.

SUBSTRATE PREPARATION

For optimum results, surfaces to receive ULTRA-THANE 230 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 230.

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.

SUBSTRATE TEMPERATURE

ULTRA-THANE 230 systems may be applied to surfaces with temperatures as low as 50 deg. in most instances. Please consult with General Coatings Manufacturing Corp. technical representatives for certain requirements.

AMBIENT AIR TEMPERATURE

Winter	Regular	Summer
50 - 60°F	65 - 85°F	Above 90°F

GENERAL COATINGS MANUFACTURING CORP. TECHNICAL SERVICE PERSONNEL SHOULD BE CONSULTED IN ALL CASES WHERE APPLICATION CONDITIONS ARE MARGINAL.

EQUIPMENT

Proportioning equipment shall be manufactured by Gusmer, Graco or Glas-Craft. 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 mixed material at the spray gun. Optimum spraying temperature will vary as a function of substrate and ambient conditions.

SPRAYING

ULTRA-THANE 230 systems should be deposited in uniform passes ranging from 1/2" to 1 1/2". Pass thicknesses will vary as a function of substrate temperature, ambient air temperature and machine output. ULTRA-THANE 230 systems bond best to themselves when the previous pass is still warm (above 70°F). ULTRA-THANE 230 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 230 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 m.p.h.

PROTECTIVE COATING

ULTRA-THANE 230, 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.

FIRE AND THERMAL BARRIER

ULTRA-THANE 230 polyurethane insulation systems are combustible under many fire conditions. A fire and thermal protection have a UL rated 15-minute finish rating should be used to cover all ULTRA-THANE 230 systems used on interior wall or ceiling applications.

SPECIAL NOTE

*Particular attention must be paid to coating selection in applications where a vapor drive may be present. Consult **General Coatings Manufacturing Corp.** technical service personnel for specific system recommendations.*

STORAGE

Both liquid components of ULTRA-THANE 230 systems should be stored in original unopened containers at temperatures between 50°F and 75°F. 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 build up of pressure in the storage vessel. Use caution in opening containers of ULTRA-THANE 230. Containers should be opened slowly to allow the release of any pressure buildup.

Safety, Health & Toxicity Data

A Material Safety Data Sheet (MSDS) has been prepared on the ULTRA-THANE 230 systems. All personnel who will come in contact with the product should read and understand the MSDS.

PROTECTIVE EQUIPMENT

Since the ULTRA-THANE 230 systems are 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. Component "A" ULTRA-THANE systems are polymeric isocyanate and, as such, can be very sensitizing, particularly from the standpoint of **VAPOR INHALATION**. Some other ingredients may be sensitizing from the standpoint of **SKIN CONTACT** or **EYE CONTACT**.

VAPOR INHALATION

The best form of protection against isocyanate 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 may be acceptable.

SKIN CONTACT

To prevent excessive skin contact with the sprayed product, the use of fabric overalls and fabric gloves is recommended.

EYE CONTACT

Wear a full face mask or OSHA-compliant protective goggles.

PROTECTION OF THE WORKPLACE

Overspray from ULTRA-THANE 230 systems 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.

FIRST AID CONSIDERATION

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 with liquid components can result in a rash or other irritation. Wash any affected skin area with clean water. Wipe residual liquid from the skin with a clean cloth, then wipe the affected area with a 30% solution of rubbing alcohol. Follow the alcohol wipe with repeated washings using soap and water. If a rash or other irritation develops, **SEE A PHYSICIAN**.

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**.

*The information herein is believed to be reliable, but unknown risks may be present. **General Coatings Manufacturing Corp.** warrants only that the material shall be of merchantable quality; this warranty is in lieu of all other written or unwritten, expressed or implied warranties, and **General Coatings Manufacturing Corp.** expressly disclaims any warranty for a particular purpose, or freedom from patent infringement. Accordingly, Buyer assumes all risks whatsoever as to the use of these materials and Buyer's exclusive remedy as to any breach of warranty or negligence claim shall be limited to the purchase price of the materials. Failure to strictly adhere to recommended procedure shall relieve **General Coatings Manufacturing Corp.** of all liability with respect to the materials or the use thereof.*

FAST-SET AROMATIC URETHANE ELASTOMER

DESCRIPTION AND USE

ULTRA-TUFF 2500 is a 100% solids, fast-set, two-component, elastomeric aromatic, urethane protective coating.

ULTRA-TUFF 2500 is recommended as a durable, high performance membrane covering for polyurethane foam and other roofing and construction surfaces.

ADVANTAGES

ULTRA-TUFF 2500 exhibits excellent flexibility and impact resistance.

ULTRA-TUFF 2500 contains no volatile solvents.

ULTRA-TUFF 2500 is listed and classified by Underwriters Laboratories, Inc. UL790 Class A as an integral component of numerous roof deck and construction assemblies, File #14330.

ULTRA-TUFF 2500 IS APPROVED BY THE CALIFORNIA STATE FIRE MARSHALL

PRIMER

Sprayed urethane foams: no primer necessary. Consult manufacturer for application to other construction surfaces.

SERVICE TEMPERATURES

-40°F to 225°F

ADHESION

ULTRA-TUFF 2500 adheres well to most surfaces, including spray-applied polyurethane or isocyanurate foam insulations and other construction surfaces. ULTRA-TUFF 2500 should not be exposed to ultra-violet for more than 24 hours for best topcoat adhesion.

WEATHERING & ULTRA-VIOLET RESISTANCE

After 6,000 hours QUV accelerated weathering, according to ASTM G53, Atlas carbon arc, ASTM D822, and Atlas Xenon, ASTM G26, ULTRA-TUFF 2500 had excellent appearance with no cracking, checking, delamination or loss of flexibility and only slight chalking.

Nominal Properties

PHYSICAL PROPERTY	VALUE	TEST METHOD
Solids by Volume	100%	ASTM D-2697
Solids by Weight	100%	ASTM D-2369
Hardness Shore A	90 +/- 2	ASTM D-2240
Tensile Strength	2000 PSI +/-250	ASTM D-412
Elongation	100% +/- 25	ASTM D-412
Permanent Set @ Break	9%	ASTM D-412
Tear Resistance	150 PLI +/-20	ASTM D-624
Water Absorption	<1.5%	ASTM D-471
Permeability, US Perms @ 40 dry mils	.02	ASTM E-96(B)
Flash Point	> 300°F	ASTM D-56
Low Temperature Flexibility	Pass	ASTM D-2136
High Temperature Resistance	225°F	180° Bend @ -40°F ASTM D-573 Continuous

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.

APPLICATION

ULTRA-TUFF 2500 coating is very rapid setting, and, as such, must be sprayed through heated, airless proportioning equipment. The "B" component should be thoroughly power mixed prior to application. Consult **General Coatings Manufacturing Corp.** Technical Service Personnel for further equipment recommendations. Important Note: ULTRA-TUFF 2500 is designed as a "base coating" only. For applications requiring maximum ultraviolet resistance, ULTRA-TUFF 2500 must be topcoated.

Recommended Thickness

Consult manufacturer for specific application guidelines.

Consistency

Both the "A" and "B" components of ULTRA-TUFF 2500 are low-viscosity, translucent liquids containing various colored dyes for ease of recognition.

Coverage

ULTRA-TUFF 2500 theoretical mil sq. ft. per gallon is 1600.

Thinner

None required.

MAINTENANCE

ULTRA-TUFF 2500 is virtually maintenance free. If ULTRA-TUFF 2500 is damaged, the damaged area should be removed. If substrate is affected, the surface should be repaired. The ULTRA-TUFF 2500 to be repaired should be free of all oil, tar, paint and other contaminants.

TECHNICAL SERVICE

Complete technical information and assistance for a specific application and/or application procedure is available from **General Coatings Manufacturing Corp.**

STORAGE STABILITY

Six months at 50°F to 100°F. Both components will solidify (freeze) if stored below 30°F.

PROTECTION OF THE WORKPLACE

The overspray from coating can carry considerable distance and care should be taken to do the following:

1. Post warning signs a minimum of 100 ft. 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.

Safety, Health & Toxicity Data

A Material Safety Data Sheet (MSDS) has been prepared on this coating. All personnel who will come in contact with the product should read and understand the MSDS.

Protective Equipment

Since the coating 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. This coating contains polymeric isocyanate (MDI) and, as such, can be very sensitizing, particularly from the standpoint of vapor inhalation. Some other ingredients in the coating may be sensitizing from the standpoint of skin contact or eye contact.

Vapor Inhalation

The best form of protection against polymeric isocyanate (MDI) or other 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 may be acceptable.

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 any affected skin area with water. Wipe residual liquid from the skin with a clean cloth, then wipe the affected area with a 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.

First Aid Considerations

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.

Effects of overexposure to vapor are characterized by nasal and respiratory irritation, dizziness, nausea, headache, fatigue, possible unconsciousness or even asphyxiation.

If ingested and victim is conscious, give large amounts of water or milk to drink. Obtain medical attention immediately.

Flammability

Non-flammable.

Toxicity

Part A contains polymeric isocyanate (MDI) which can be toxic if inhaled as particulate matter. Consequently, a full-face fresh air respirator is required for spray applications.

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Technical Data Sheet **ULTRA-SHIELD 3300**

Aliphatic Polyurethane Topcoat

DESCRIPTION

ULTRA-SHIELD 3300 is an economical, aliphatic, single component, liquid applied, moisture cured, polyurethane surface protection coating. This product does not meet VOC requirements for SCAQMD and BAAQMD areas.

FEATURES

- ❖UV Stable
- ❖Excellent Color Retention
- ❖Excellent Weatherability

TYPICAL USES

- ❖Topcoat for Foam Insulated Tanks
- ❖Topcoat for Wine Storage Tanks

COLORS

White

Custom colors are also available. Minimum order of 250 gallons (945 liters). See color chart for special provisions. Contact General Coatings Manufacturing Corp. for more information.

PACKAGING

5 gallon (18.9 liter) pail with ½ gallon can (net 0.4 gallon) of Catalyst

55 gallon drum, net fill 50 gallons (189 liters) with 2 cans (net 1 gallon each can) of Catalyst

MIXING

Before application, mix ULTRA-SHIELD 3300 using a mechanical mixer at slow speed. Mix ULTRA-SHIELD 3300 thoroughly until a homogenous mixture and color is obtained.

APPLICATION

The first coat of ULTRA-SHIELD 3300 should be applied at the rate of 1 gallon/100 square feet (0.41 liters/square meter). For best results, airless sprayer or phenolic core roller may be used but extra care should be taken not to cause air bubbles. Apply ULTRA-SHIELD 3300 evenly over the entire surface. After the coating becomes tack-free, proceed to the second coat.

ULTRA-SHIELD 3300 may require more than one coat depending on the job specifications and requirements. When estimating material requirements, coverage rates tend to increase for subsequent coats of material. To obtain proper adhesion between coats it is imperative that re-coating be done within 36 hours.

CURING

At 75°F (24°C) and 50% relative humidity, allow each coat to cure 8 to 12 hours. Cure time will vary depending on temperature and humidity. If more than 48 hours passes between coats, re-prime the surface with Polyprime U or Polyprime 172 before proceeding.

TECHNICAL DATA (Based on draw down film)

Coverage Rate	1 gal/100sq.ft. 0.41 l/m ²
Dry Film Thickness, exclusive of aggregate	
Per coat at 1 gal/100 sq. ft	12 ± 2 mils
	305 ± 50 microns
Hardness, ASTM D-2240	95 ± 5 Shore A
Tear Resistance, Die C, ASTM D-624	400 ± 50 pli
	70.1 ± 8.8 kNm
Tensile Strength, ASTM D-412	3500 ± 300 psi
	29.2 ± 2.1 MPa
Ultimate Elongation, ASTM D-412	200% ± 50
Specific Gravity	1.19
Total Solids by Weight, ASTM D-2369	80 ± 2%
Total Solids by Volume, ASTM D-2697	72 ± 2%
Viscosity at 24°C (75°F)	3000 ± 1000 cps
Volatile Organic Compounds	
ASTM D-2369-81	<2.08 lb/gal <250 gm/liter
Moisture Vapor Transmission	
ASTM E-96(B)	0.306 grains/ft ² .hr.in Hg
QUV (Accelerated weathering 2000 hours	No cracking or crazing or chalking

Uncured ULTRA-SHIELD 3300 is very sensitive to heat and moisture. Higher temperatures and/or high humidity will accelerate the cure time. Use caution in batch sizes and thickness of application.

Low temperature and/or low humidity extend the cure time.

EQUIPMENT CLEANUP

Equipment should be cleaned with an environmentally safe solvent, as permitted under local regulations, immediately after use.

STORAGE

ULTRA-SHIELD 3300 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).

LIMITATIONS

Surfaces must be dry, clean and free of foreign matter.

Surface may be slippery when wet.

ULTRA-SHIELD 3300 may become flat and stained over time.

ULTRA-SHIELD 3300 has limited chemical resistance properties.

Containers that have been opened must be used as soon as possible.

Do not dilute under any circumstance.

Refer to general guidelines for more information.

WARNING

This product contains Isocyanates and Solvent.

Please read all information in the general guidelines, product data sheets, guide specifications and material safety data sheets (MSDS) before applying material. Published technical data and instructions are subject to change without notice. Contact your local General Coatings Manufacturing Corp. representative or visit our website for current technical data and instructions.

LIMITED WARRANTY

General Coatings Manufacturing Corp. warrants its products to be free of manufacturing defects and that they will meet General Coatings Manufacturing Corp. current published physical properties. General Coatings Manufacturing Corp. warrants that its products, when properly installed by a state licensed waterproofing contractor according to General Coatings Manufacturing Corp. guide specifications and product data sheets over a sound, properly prepared substrate, will not allow water migration for a period of one (1) year. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product of this manufacturer which proves to be defective. There are no other warranties by General Coatings Manufacturing Corp. of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. General Coatings Manufacturing Corp. shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. General Coatings Manufacturing Corp. shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, 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. General Coatings Manufacturing Corp. reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

DISCLAIMER

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 said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the users responsibility to satisfy himself, by his own information and test, 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 use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and General Coatings Manufacturing Corp. makes no claim that these tests or any other tests, accurately represent all environments.



10 YEAR LIMITED SYSTEM MATERIAL WARRANTY For Polyurethane Foam Roofing System

Warranty No. SAMPLE

Installation Size: _____	Completion Date: _____
Owner: _____	Applicator: _____
Address: _____	Address: _____
Phone: _____	Phone: _____
Structure Name: _____	
Structure Location: _____	
Project Name: _____	
Project Description: _____	
Product/System Description: _____	

GENERAL COATINGS MANUFACTURING CORP. ("GCMC") warrants to the original owner ("Owner") that the coating will not peel because of actual defects in material or manufacturing for a period of ten (10) years from the date of substantial completion above. Should any of these defects occur during this period, GCMC will replace the defective portion of the failed product.

GCMC requires that all coating materials have been stored properly, and installed pin-hole free according to GCMC's then-current specifications, guidelines, and recommendations. GCMC spray polyurethane foam shall meet Class A performance in a _____ roof system. This ten (10) year Limited Warranty shall be contingent upon the following mandatory minimums: (a) _____ inches of _____ lb or higher density of spray polyurethane foam; and, (b) at least _____ () dry mil film coating thickness in the field, consisting of at least _____ () dry mil film GCMC _____ top coat over at least _____ () dry mil film of GCMC _____ base coat. For all flashings, seams, terminations, penetrations, reglets, and other areas where water seepage may occur, a mandatory minimum of _____ () dry mil film coating thickness is required, consisting of at least _____ () dry mil film thickness of GCMC _____ top coating over no less than _____ () dry mil film thickness of _____ base coat.

If the subject property is sold, the unexpired portion of this Limited Warranty is transferable to the new owner, provided GCMC receives written notice and payment of \$250.00 within thirty (30) days of the title transfer. Any requested transfer is expressly contingent upon: (1) GCMC's full inspection of the Project named on this Limited Warranty; and (2) the Owner's satisfactory completion of all repairs deemed necessary by GCMC, in GCMC's sole discretion. Any permitted transferred warranty to new owner will commence from the original date of substantial completion above.

CONDITIONS AND EXCLUSIONS:

- This Limited Warranty only applies to GCMC foams, coatings and materials used on institutional, commercial, or industrial applications only.
- This Limited Warranty is expressly conditioned upon fully payment being received by GCMC, its distributor, and/or the Applicator for all GCMC materials supplied to the Project, and Owner's continued compliance with all terms pertaining to any agreements with such parties.
- During the term of this Limited Warranty, GCMC and/or the Applicator shall be given free and unrestricted access to the portions of the areas where the GCMC System was applied, upon reasonable advance notice and during business hours.
- Excludes costs associated with labor, equipment, or additional supplies to perform repair or maintenance of a system installed using GCMC coatings and materials. All such costs shall be the Owner's responsibility and shall be borne by the Owner exclusively.
- Excludes any failure or damage to foams, coatings or other materials resulting from faulty or improper storage, handling, application, or installation, including but not limited to any failure to adhere to the requirements set forth in GCMC's specifications and application guidelines.
- Excludes all unauthorized repairs, alterations, or installation of incompatible products/accessories or the consequential effects of such repairs, alterations or installations. Any unauthorized repairs and/or alterations shall automatically void this Limited Warranty.
- Excludes damage or failure caused by repairs or alterations to, encroachment upon, or erection of any fixture, attachment, or structure on or in contact with the coated area or any use of the coated area other than for its intended purpose at the time this Limited Warranty was issued.



- Excludes damage or failure due to expansion, contraction, settlement, cracking, warping, deflection, or other movement in the vertical surface, greater than 1/16" in width at its widest point.
- Excludes any damage or failure caused by structural movement, failure of the substrate over which the foam and coating are applied, faulty construction or design, misuse of structure, inadequate drainage, or any other failure of the structure.
- Excludes any damage or failure due to vapor drive, infiltration or condensation of moisture in, through or around walls, copings, wall structure, reglets, underlying surface, or surrounding materials.
- Excludes any damage or failure caused by falling objects, projectiles, foreign objects or agents.
- Excludes any damage or failure caused by third parties, including plant, insect or animal life.
- Excludes any damage or failure caused by fire, earthquake, flood, hail, lightning, sink holes, mud slides, volcanic events, and unusual weather phenomena, such as high winds or natural disasters.
- Excludes any damage to the building and contents thereof, or any other direct or consequential damage from any causes whatsoever.
- Excludes any damage or failure due to any misuse, improper care or failure to provide necessary maintenance.
- Excludes any damage or failure due to normal and expected weathering of the surface, mildew, chalking, exposure to harmful chemicals or vapors, fatty acids or acid rain, or surface discoloration due to atmospheric pollution.
- Excludes any damage or failure caused by items not part of the GCMC system and/or any products not supplied by GCMC.

GCMC shall be the sole judge of whether or not the coating or foam are defective and whether the defect is due to faulty materials or manufacturing. The Owner must notify GCMC in writing should any coating or foam failure covered by this Limited Warranty occur. All claims should be made within 30 days of discovery of the failure. GCMC reserves the right for their representative to make an inspection as may be required to ensure coating and foam performance and determine the extent and cause of problems, if any. In the event of damage or failure caused by any of the excluded occurrences listed, Owner shall, at its own cost, immediately repair or correct such damage or failure and shall notify GCMC in writing. Failure to immediately make such repairs or corrections shall automatically void this Limited Warranty. GCMC may discontinue products from time to time and reserves the right to provide a replacement product that it believes to be of equal or higher quality and value.

THE FOREGOING SHALL CONSTITUTE GCMC'S SOLE AND EXCLUSIVE LIABILITY IN CONNECTION WITH THE PURCHASE, INSTALLATION OR USE OF THE FOAM AND COATING SYSTEM. THIS WARRANTY IS IN LIEU OF ALL OTHER WRITTEN OR ORAL, EXPRESS OR IMPLIED WARRANTIES, AND ANY AND ALL OTHER CLAIMS, WHETHER SOUNDING IN NEGLIGENCE, TORT, OR STRICT LIABILITY, AND GCMC FURTHER EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE OWNER'S SOLE AND EXCLUSIVE REMEDY AGAINST GCMC SHALL BE LIMITED TO THE COST OF FOAM AND COATINGS MATERIALS SUFFICIENT TO RECOAT OR REPLACE ANY AFFECTED AREA WHERE PRODUCT FAILURE HAS OCCURRED. THE COST OF RECOAT OR REPLACEMENT SHALL, IN NO EVENT, EXCEED THE VALUE OF THE ORIGINAL PURCHASE PRICE OF THE PRODUCTS, REDUCED PROPORTIONATELY BY A FRACTION EQUAL TO THE NUMBER OF YEARS ALREADY EXPIRED DIVIDED BY THE TOTAL NUMBER OF YEARS OF THIS LIMITED WARRANTY.

This Agreement shall be construed in accordance with the laws of the State of California with the exception of conflicts of laws principles, and venue for any lawsuit related to this Agreement shall be brought in Fresno County Superior Court.

This Limited Warranty is void unless signed by authorized representatives of GCMC, Applicator and Owner. Owner's signature constitutes acceptance of all terms and conditions of the Limited Warranty. This Limited Warranty only becomes effective when the full contract price of the installation is paid in full to all parties and signed by an officer of GCMC. The substantial completion date will be the beginning date for the warranty period.

Owner:

 By: _____
 Title: _____
 Date: _____
 Signature: _____

Applicator:

 By: _____
 Title: _____
 Date: _____
 Signature: _____

Manufacturer:

General Coatings Manufacturing Corp.
 By: _____
 Title: _____
 Date: _____
 Signature: _____

