



# DRAGONSHIELD-HT® ERC

## EXPLOSIVE RESISTANT COATING

Revised 09.26.11

### DESCRIPTION

DRAGONSHIELD-HT® ERC is a state-of-the-art, high-performance, sprayed, plural-component pure polyurea elastomer. This system is based on amine-terminated polyether resins, amine chain extenders and MDI prepolymers. It provides a flexible, resilient, tough, monolithic membrane with water and chemical resistance.

### FEATURES

- 100% solids. No solvents. No VOCs.
- Fast-set: Handle in two minutes or less. Hydrophobic, therefore unaffected by damp, cool surfaces during application
- Extended tack time to allow deep surface penetration
- High dry temperature stability to 250° F (121° C) with intermittent temperatures to 300° F (148° C)
- High abrasion resistance
- ASTM E84-97a and complies with NFPA and UBC Class 1 Fire Rating

### RECOMMENDED USES

- Coating for steel or other substrate exposed to corrosion
- Liner for concrete tanks, ponds, lagoons, reservoirs, dikes, irrigation ditches, tunnels, barges, etc.
- Replace or repair failed existing sheet membrane liners
- Steel tanks, silos, and pipes
- Encapsulation material for EPS or other types of flotation materials
- Encapsulation material for asbestos, lead paint, or other dry hazardous materials (Consult SPI)
- Earthen containment used with or without geotextile

### COLORS

It should be noted that DRAGONSHIELD-HT® ERC is an aromatic polyurea, therefore, as with all aromatics, color change as well as superficial oxidation will occur.

Aliphatic urethane, polyurea, and other suitable topcoats can be used when long-term aesthetics, and increased longevity in full sun exposure are of critical importance.



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WET PROPERTIES @ 77°F (25°C)	
Solids by Volume	100%
Solids by Weight	100%
Volatile Organic Compounds	0 lbs/gal (0g/l)
Theoretical Coverage DFT	100 sq. ft. @ 16 mils/gal
Weight per gallon (approx.)	8.55 lbs. (3.87 kg) approx
Number of Coats	1-2
Mix Ratio	1 "A": 1 "B"
Viscosity (cps) @ 77° F (25 °C)	A: 400 approx. B: 550 approx.
Shelf Life Unopened Containers @ 60-90°F (15-32°C)	Six months

DRY PROPERTIES* @ 34 mils (0.8 mm)*	
Tensile Strength ASTM D 638	4219 psi (29.3 mpa)
Elongation @ 77°F (25°C)	619%
Hardness (Shore D) ASTM D 2240	52 – 44
100% Modulus ASTM D 412	1280 psi (8.9 mpa) ± 100
300% Modulus ASTM D 412	2137 psi (14.9 mpa) ± 100
Tear Resistance ASTM D 624	612 pli (107 KN/m) Avg
Service Temperature	-60°F - +250°F (-50°C - +121°C)
Abrasion Resistance 1 kg 1000 rev ASTM D 6040	H-18 Wheel 109 mg. lost
	H-22 Wheel 50 mg. Lost
Flame Spread @ 40 mils ASTM E84	15
Smoke Density @ 40 mils ASTM E84	30
Weatherability 3000 hrs QUV	No evidence of failure

\* All cured film properties are approximate since processing parameters, ad-mixture types, and quantities will change physical properties of the cured elastomer. All samples for above tests were force cured or aged for more than three weeks. It is recommended that the user perform their own independent testing.

CURING SCHEDULE	
Gel	6± sec.
Tack Free	10 ± sec.
Post Cure**	24 hours
Recoat	0 – 12 hours

\*\*Complete polymerization to achieve final strength can take up to several weeks, depending on a variety of conditions.

The samples for tests were sprayed with SPI/Gusmer 20/35 HP @ 2500 psi dynamic (172 bar). Primaries/Hose Heat 170°F (77°C) GX7-400 Gun with 453 module and 212 PCD.

Note: This is a defense related product. Contact SPI Government Relations Dept. for further information.

Note: Due to the many variables involved with blast and ballistic events, all SPI polymer solutions must be tested and validated prior to installation for the purpose of hardening structures, barriers, vehicles, etc.

Product & Equipment Technical Assistance  
24 hours / 7 days a week (800) 627-0773

## GENERAL APPLICATION INSTRUCTIONS

Apply DRAGONSHIELD-HT® ERC only to clean, dry, sound surfaces free of loose particles or other foreign matter. A primer may be required, subject to type and/or condition of substrate. Consult technical service personnel for specific primer recommendations and substrate preparation procedures.

DRAGONSHIELD-HT® ERC can be sprayed over a broad range of ambient and substrate temperatures. Contact technical service personnel for specific recommendations, pricing, and availability of spray and auxiliary equipment.

It is recommended that DRAGONSHIELD-HT® ERC be sprayed in multi-directional (north-south/east-west) passes to ensure uniform thickness.

Follow the instructions attached to "A" and "B" containers.

## APPLICATION EQUIPMENT

- Standard 1: 1 ratio, heated, plural-component equipment developing a minimum of 2000 psi (13.9 mpa) dynamic pressure with heating capabilities to 175°F (79°C) will adequately spray this product. These include SPI-Gusmer 25/25 HP, and Gusmer 20/35. Gun models include GUSMER GX7-400, and GUSMER GX8.
- Pre-heated temperature should be at 160-170°F (71-76°C)
- Hose temperature should be at 160-170°F (71-76°C) a hose thermometer inserted under the insulation near the gun should read a minimum of 145-155°F (63-68°C).
- Physical properties will be enhanced when sprayed at higher pressure (3000 psi or more) 20.7 mpa, utilizing an impingement mix gun such as a Gusmer GX7 gun, Gusmer GX7-400 or Gusmer GX8 gun.

## MIXING AND THINNING

Thoroughly agitate the "B" components of this product prior to application. Use an SPI folding blade mixer, or equivalent equipment approved by SPI. Install mixer through the extra 2" bung hole provided on all "B" Drums. Care must be taken not to cross contaminate the individual components with the mixing equipment. Thinning is not required. Using any thinner may adversely affect product performance. The polyol "B" component must be thoroughly power mixed each day, prior to use. Contact an SPI technician regarding proper mixing equipment.

## GENERAL SAFETY, TOXICITY & HEALTH DATA

Material Safety Data Sheets are available for this coating material. Any individual who may come in contact with these products should read and understand the M.S.D.S. **CHEMTREC EMERGENCY NUMBER 1-800-424-9300**

**WARNING:** Contact with skin or inhalation of vapors may cause an allergic reaction. Avoid eye contact with the liquid or spray mist. Hypersensitive persons should wear protective clothes, gloves and use protective cream on face, hands and exposed areas.

**CONTAMINATION:** Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected, carbon dioxide created pressure can develop. Do not attempt to use contaminated material.

**EYE PROTECTION:** Safety glasses, goggles, or a face shield are recommended.

**SKIN PROTECTION:** Chemical resistant gloves are recommended. Cover as much of the exposed skin area as possible with appropriate clothing.

**RESPIRATORY PROTECTION:** Use a respirator approved for isocyanates and organic vapors. If you are not sure or not able to monitor levels, or if you are spraying in an enclosed/indoor area, use MSHA/NIOSH approved supplied air respirator. Consider the application and environmental concentrations in deciding if additional protective measures are necessary.

**INGESTION:** Do not take internally. It is believed that ingestion of polymeric isocyanates would not be fatal to humans, but may cause inflammation of mouth and stomach tissue.

## LIMITATIONS

- Apply DRAGONSHIELD-HT® ERC when surface and air temperatures are above 40°F (5°C) and rising, and 7°F (3°C) above dew point.
- This product is for professional use only.
- Liquid temperature in drums during application 70° F – 100°F (21 °C – 38°C).
- Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected, CO<sub>2</sub> created pressure can develop. Do not attempt to use contaminated material
- Undried air exposed to liquid components will reduce physical properties of the cured coating.

**Note:** The material supplied is two components (Component "A"/Component "B") used to formulate DRAGONSHIELD-HT® ERC. The quality and characteristics of the finished polymer is determined by the mixture and application of the two components.

## WARRANTY & DISCLAIMERS

Specialty Products, Inc. has no role in the manufacture of the finished polymer other than to supply its two components. It is vital that the person applying this product understands the product and is fully trained and certified in the use of plural-component equipment.

Specialty Products, Inc., an Alaska corporation, warrants only that the two components of this product shall conform to the technical specifications published in the product literature.

The quality and fitness of the product are dependent upon the proper mixture and application of the components by the applicator. There are no warranties that extend beyond the description on the face of this instrument.

SPECIALTY PRODUCTS, INC. MAKES NO WARRANTY OF MERCHANTABILITY OF THE PRODUCT OR OF FITNESS OF THE PRODUCT FOR ANY PARTICULAR PURPOSE.

Specialty Products, Inc. makes no warranty as to the quality of any product modified, supplemented, tinted, or altered in any way after it leaves the manufacturing plant. Specialty Products, Inc. does not warrant that this product is suitable for use as a liner for potable water containers. Use of this product in a potable water container could be hazardous to health if it is improperly processed or applied.

The liability of Specialty Products, Inc. for any nonconformity of the product to its technical specifications shall be limited to replacement of the product.

The sole exclusive remedy of buyer, which is to have Specialty Products, Inc. replace any nonconforming product at no cost to buyer, is conditioned upon buyer notifying Specialty Products, Inc. or its distributor in writing of such defect within thirty days of the discovery of such defect.

Specialty Products, Inc. shall not be liable for any direct, incidental, or consequential damages resulting from any breach of warranty.

The data presented herein is not intended for non-professional applicators or those persons who do not purchase or utilize this product in the normal course of their business.

The potential user must perform any pertinent tests in order to determine the product's performance and suitability in the intended application, since final determination of fitness of the product for any particular use is the responsibility of the buyer.

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