



# SPI COATINGS

PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

## SUPER THERM®

**INSULATION  
AND  
CORROSION  
SPECIALISTS**

### Technical Data Sheet (1/24/23)

#### **DESCRIPTION**

SUPER THERM® is a water-borne combination of high-performance aliphatic acrylics, urethanes and resin additives which produces a tough, yet flexible coating film. Designed for performance and durability, SUPER THERM® contains 4 unique ceramics to block heat gain into the surface upon which the coating film is applied. SUPER THERM® resists 95% of Solar heat blocking Visual Light, Ultra Violet (UV), and Infrared (IR). SUPER THERM® is a flexible membrane with low permeability that can greatly reduce expansion and contraction of a roof, and prevents corrosion and surface deterioration.

#### **TYPICAL USES**

- As a one-coat insulation system on exteriors to block the migration of Solar Heat gain (roofs and side walls).
- Exterior application to reduce or eliminate condensation on HVAC systems, tanks, spheres, storage systems, and concrete walls.
- As a system over metal, concrete, masonry, and wood to stop moisture penetration and corrosion.
- Ability to resist dirt, mold, mildew, and pollution to increase longevity, and reduce surface maintenance.
- As a topcoat over metal roofs, or an intermediate coat on flat roofs.
- Applied over tent fabrics to provide insulation & remain flexible.

#### **PHYSICAL DATA**

- ◆ Solids: By weight 69% / By Volume: 57% (+/-2%)
- ◆ 30-60 minutes to tack free at 70°F (21°C)
- ◆ Overcoat: 2 hours when 70°F (21°C) at 40% Relative Humidity
- ◆ Full Cure: 21 days; dry to touch: 2 hours
- ◆ Lead-, chromate-, and asbestos-free
- ◆ Cures by evaporation
- ◆ Weight: 12.1 lbs. per gallon
- ◆ Vehicle Type: Self cross-linking Acrylic blend
- ◆ Shelf Life: Up to 5 years if unopened under appropriate storage conditions (See MSDS).
- ◆ VOC Level: 67.2 grams/liter, 0.561 gal/lbs.
- ◆ Viscosity: 105 – 110 KU; 25,000 Centipoise
- ◆ pH: 8.5 – 9.5
- ◆ 91 sq.ft./gallon (8sqm): 18 mils (450 microns) wet / 9.5 mils (238 microns) dry
- ◆ Maximum Surface Temperature when applying: 150° F (65°C)
- ◆ Minimum Surface Temperature when applying: 40°F (5°C)
- ◆ Maximum Surface Temperature after curing: 300°F (149°C)
- ◆ Do not apply over 18 mils wet per application. Allow to dry down before adding additional thickness.

**MEETS MIL SPEC: MIL-PRF-6799L**

#### **APPLICATION METHODS**

SUPER THERM® can be applied to metal, concrete, masonry, and wood. The application can be spray, brush, or roller. For specific instructions on surface preparation, mixing and application, please refer to the SPI's application instructions for SUPER THERM®. This coating should never be applied at less than 18 mils wet (450 microns), 9.5 mils dry (238 microns), each coat.

**NOTE:** Do not paint in the rain or if there are or have been heavy cloud conditions or high humidity for a prolonged series of days. Conditions **MUST** be dry and sunny or partly cloudy with enough sun to dry coating film before nightfall.

#### **TESTS AND CERTIFICATIONS (partial list)**

1. Exterior insulation against Solar Radiation
2. Blocks 99.5% of infrared / up to 68% sound blockage
3. UL (Underwriters Laboratory) approved
4. Flame Spread Test (ASTM E84; 0 smoke, 0 flame)
5. Class "A" Flame Spread
6. Marine Approvals: - American Bureau of Shipping; USCG
7. UV & Salt Spray Resistance (ASTM 5894) 5000 hours
8. USDA Approved
9. Flexibility (ASTM E1737): 180 degree bend – passed
10. Adhesion ASTM (D4541): 265ps (1.8Mpa) @ 10 dry mils – did not pull off plate. Only intercoat failure.
11. Perm Rating (ASTM D1653-13): 10 dry mils=8perms; 12 dry mils=4perms
12. Abrasion Resistance (ASTM D4060): 3,000 cycles
13. Resistance to Salt Spray: 2,000 hours
14. Resistance to Wind Driven Rain (ASTM D6904)
15. Airforce Canopy: MIL-PRF-6799

#### **SAFETY PRECAUTIONS**

Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: proper ventilation, use of proper lamps, wearing of protective clothing and masks, tenting, and proper separation of application areas. For more specific safety procedures, please refer to the SUPER THERM® Safety Data Sheet. **KEEP OUT OF REACH OF CHILDREN.**

LIMITATION OF LIABILITY: The information contained in this data sheet is based upon tests that we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the products made by SPI, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge is reliable. The products and information are designed for users having the requisite knowledge and industrial skills, and the end-user has the responsibility to determine the suitability of the product for its intended use.

SPI has no control over either the quality of condition of the substrate, or the many factors affecting the use and application of the product. Therefore, SPI does not accept any liability arising from loss, injury, or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The information contained in this data sheet is subject to modification as a result of practical experience and continuous product development. This data sheet replaces and annuls all previous issues, and issues, and the user has the responsibility to ensure that this sheet is current prior to using the product.



## Application Instructions (1/24/23)

*SUPER THERM® is a water-borne combination of high-performance aliphatic urethane blends, elastomeric acrylics, and resin additives which produces a tough, yet flexible coating film. Designed for performance and durability, SUPER THERM® contains 4 unique ceramics to block up to 95% of Solar Heat entering a structure due to Visual Light, Ultra Violet (UV), and Infrared (IR). SUPER THERM® is a flexible membrane with low permeability that can greatly reduce expansion and contraction of a roof, and prevents corrosion and surface deterioration.*

### **SURFACE PREPARATION**

Surface must be clean from oil, tar, rust, grease, salts, and films.

- 1) Clean surface using TSP (tri-sodium-phosphate) or a citrus cleaner to release dirt and degreaser residue.
- 2) Pressure-wash, if possible, @ 3500 psi.
- 3) Salt contamination on the surface can come as a result of salt water, fertilizers, and car exhaust. Use Chlor-Rid or equivalent to decontaminate surface if salts are present. (Acceptable levels: Nitrates: 5-10 mcg/cm<sup>2</sup>, Sulfates: 5-10 mcg/cm<sup>2</sup>, Chlorides: 3-5 mcg/cm<sup>2</sup>)

### **Surface must be completely dry before applying.**

- 1) SUPER THERM must be applied during proper temperatures (see below) and the prescribed overcoat window of the coating over which it will be applied.
- 2) Maximum Surface Temperature when applying: 150°F (65°C)
- 3) Minimum Surface Temperature when applying: 40°F (5°C)
- 4) Maximum Surface Temperature after curing: 300°F (149°C)

**NOTE:** Use Rust Grip® as a primer when needed. Refer to Rust Grip technical data sheet for overcoat window.

**NOTE:** If pack rust or mill scale exist, it must be removed by grit blast, power tool or zip (no needle gun) gun. Once removed, begin with Step 1 (power wash).

**NOTE:** Harsh environments where color is desired, or where pooling may occur: SUPER THERM® should be over-coated with ENAMO GRIP (solvent based) over metal or concrete, and SP SEAL COAT over flexible surfaces (foam, tar, rubber and wood).

**NOTE:** Modified bitumen, asphalt roofing, PVC, TPO and single-ply membranes must be primed with the appropriate primer (i.e. Super Base/HS or SP Single-Ply Primer).

**NOTE:** When applying ENAMO GRIP (solvent) over SUPER THERM when humidity is 60% and temperature is below 38°C (100°F), wait minimum of 24 hours and until SUPER THERM is less than 5-10% moisture content before top coating SUPER THERM to allow evaporation of water.

### **MIXING**

SUPER THERM® should be mechanically mixed or mixed by hand (stir stick) for three minutes, then applied.

### **APPLICATION**

SUPER THERM® can be applied by brush, roller or spray; however, the preferred method is by air or airless sprayer. It should never be applied directly over rust, nor should it ever be diluted or thinned.

- 1) If application is by brush, use a soft bristle brush (2 coats req.)
- 2) If applied by roller, use a ¾-inch nap roller (2 coats req.)
- 3) If application is by spray, use a standard airless sprayer (2 gallons/minute at 3,300 psi.) with a .029-.033 tip according to fan width spread of application and pump pressure. To achieve proper thickness, temperature and humidity must be considered by applicator.

- **NOTE:** The number of applications and the thickness of each should be in accordance with the job specifications.
- **NOTE:** All filters should be removed from both the gun handle and spray machine prior to application, as they will trap the ceramics.
- **NOTE:** Temperatures must always be a minimum of 5 degrees above the dew point during application.
- **NOTE:** If SUPER THERM® is applied during a period of extremely high humidity or if there is rain soon after the application, bubbles may appear on the surface. Do not puncture these bubbles. This is normal and the coating will continue to cure with no effect on the performance or appearance of the coating. Bubbles will dry down tight and disappear without a trace or imprint in following day sun.
- **NOTE:** 2" corrugation = roof size x 135%; 2.5" corrugation = roof size x 145%; 3" corrugation = roof size x 160%

**NOTE:** Do not paint in the rain or if there are or have been heavy cloud conditions or high humidity for a prolonged series of days. Conditions **MUST** be dry and sunny or partly cloudy with enough sun to dry coating film before nightfall.

### **MINIMUM SPREAD RATES (mil thickness)**

SUPER THERM® will be applied at no less than a total of 18 mils wet (450 microns)/9.5 mils dry (238 microns) for each application. Spread Rate is 91 sq ft per gallon. (8.5 sq meter per gallon)

### **CURE TIME**

- 1) 30-60 minutes to tack free at 70°F (21°C)
- 2) Overcoat: 2 hours when 70°F (21°C) at 40% Relative Humidity
- 3) Full Cure: 21 days

### **TEMPERATURE**

- 1) Apply between 40°F. and 150°F.
- 2) Store between 40°F. and 100°F.

### **CLEAN-UP EQUIPMENT**

- 1) After completion, spray equipment should be cleaned with soap and water; clean brushes and rollers can be reused.

# SAFETY DATA SHEET

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## SECTION 1: Identification of the substance

- 1.1 **PRODUCT IDENTIFIER:** SUPER THERM(0311)  
GHS PRODUCT IDENTIFIED: Global Harmonized System#3209.10.0000
- 1.2 **PRODUCT USE:** Insulation coating to create thermal barrier on substrates
- 1.3 **SUPPLIER:** SUPERIOR PRODUCTS INT'L II, INC.  
10835 W. 78th St., Shawnee, KS 66214 USA
- 1.4 **EMERGENCY TELEPHONE NUMBER:** 800-424-9300; 202/483-7616

## SECTION 2: Hazard identification

- 2.1 **Classification of the substance:** This product is a water-based coating and is not classified as dangerous for supply or conveyance.

- 2.2 **Label elements:** Signal Word: WARNING Hazard Symbol:



**Hazard Statement:** Irritant, dermal sensitiser, acute toxicity (harmful).  
H320 causes eye irritation. H317 may cause an allergic skin reaction.

## SECTION 3: Composition/information on ingredients

3.2	<u>Ingredient compositions</u>	<u>%</u>	<u>CAS/PIN</u>	<u>Ingredient compositions</u>	<u>%</u>	<u>CAS/PIN</u>
	Fire Retardant	6.0	21645-51-2	Titanium Dioxide	6.0	13463-67-7
	Mica/Additives	14.0	12001-26-2	Insulator	24.0	93763-70-3
	Acrylic Resin	28.0	9003-01-4	Polyurethane Resin	12.0	58043-05-3
	Water	10.0	Non-hazmat			

## SECTION 4: First aid measures

- 4.1 **Description of first aid measures**  
INHALATION: Remove to fresh air.  
EYES: Flush w/water for at least 15 minutes; see physician if irritation continues.  
SKIN: Wash affected areas w/mild soap & water.  
INGESTION: Do not induce vomiting. Give 1-2 glasses milk or water. Seek medical attention according to amount of product ingested.

## SECTION 5: Firefighting measures

- 5.1 **Extinguishing media:** Water, water fog, dry chemical, foam or CO2
- 5.2 **Special hazards arising from the substance or mixture:**  
Hazardous combustion products: Carbon monoxide, methacrylate and other noxious gases.  
Autoignition Temperature: NAP Minimum ignitions energy: NAV  
Flash point: NAP Flammable limits: (Lower) NAP / (Upper): NAV%  
Sensitivity to static discharge? NO Sensitivity to mechanical impact? NO  
Conditions of flammability: Not flammable; water-based product
- 5.3 **Advice for firefighters:** Firefighters should wear full-body protection & SCBA

## SECTION 6: Accidental release measures

- 6.1 **Personal precautions:** Use protective clothing; use particulate respirator when spraying.
- 6.3 **Methods of cleanup:** Use kitty litter or similar absorbent to contain spill.

## SECTION 7: Handling and storage

- 7.1 **Precautions for safe handling:** Treat as paint product. Use ventilation and protective equipment to suit conditions of use.
- 7.2 **Conditions for safe storage:** Keep from freezing. Store below 50C degrees. Keep container closed tightly to prevent drying out.

**SECTION 8: Exposure Controls/personal protection**

8.1 Control parameters: Avoid inhalation of liquid when applying. Use particulate respirator.  
ENGINEERING CONTROLS: Use mechanical exhaust ventilation to control aerosol or mist if sprayed.

**SECTION 9: Physical and Chemical Properties**

9.1 Information on basic physical and chemical properties:  
 PHYSICAL STATE: Liquid SOLUBILITY IN WATER: Soluable pH: 8  
 APPEARANCE AND ODOR: White, mild acrylic odor FREEZING POINT: 30F degrees  
 BOILING POINT: >192C. deg. SPECIFIC GRAVITY: 1.4 ODOR THRESHOLD: 0.8-25ppm  
 COEFF. WATER/OIL: NAV EVAPORATION RATE: slow% VOLATILES: <5  
 VAPOUR DENSITY (Air=1): NAV VAPOUR PRESSURE: 18mmHg@20C. deg. CORROSIVE: NO

**SECTION 10: Stability and reactivity**

10.1 Conditions of Reactivity: Stable 10.2 Conditions of Instability: Stable under normal conditions  
 10.3 Possibility of hazardous reactions: None known. 10.4 Conditions to avoid: None known.  
 10.5 Incompatible materials: Strong acids or bases  
 10.6 Hazardous decomposition products: None known, no hazardous polymerization

**SECTION 11: Toxicology Information**

11.1 Information on toxicological effects:  
Acute toxicity - oral: Not meant to be ingested; no known significant effects or critical hazards  
Acute toxicity - inhalation: Vapors or mist can cause mild irritation.  
Acute toxicity - dermal: Liquid splash could result in eye or nose irritations and/or headach  
Health effects to chronic exposure: Excessive exposure to liquid product may result in minor irritations

**SECTION 12: Ecological Information**

12.1 Toxicity  
 No known toxins as product is water-based and not deemed hazardous.

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods: Dispose of as paint according to local regulations.

**SECTION 14: Transport information**

This product is not regulated in any capacity of transport.

**SECTION 15: Regulatory information**

15.1 Safety, health and environmental regulations/legislation specific for the substance: No listed materials under Superfund Amendments & Reauthorization Act of 1988 (SARA) 302, 304, 311, 312. Meets European codes under Article 59(10) of the Reach regulation.

**SECTION 16: Other information**