SPI COATINGS

PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

INSULATION AND CORROSION SPECIALISTS

SUPER THERM®

Technical Data Sheet (12/18/19)

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.

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 17 mils wet (425 microns), 10.0 mils dry (250 microns), each coat.

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): 265 psi (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

PHYSICAL DATA

- Solids: By weight 70% / By Volume: 60% (+/-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
- Lead-, chromate-, and asbestos-free
- Cures by evaporation
- Weight: 11.72 lbs. per gallon
- Vehicle Type: Urethane/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
- 95 sq.ft./gallon (8sqm): 17 mils (425 microns) wet / 10.0 mils (250 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

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.**

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SUPER THERM®

Application Instructions (2/28/19)

SUPER THERM® is a water-borne combination of high-performance aliphatic urethanes, 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) Use general degreaser if needed.
2) Clean surface using TSP (tri-sodium-phosphate) or a citrus cleaner to release dirt and degreaser residue.
3) Pressure-wash if possible @ 3500 psi.
4) Salt contamination on a 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/cm², Sulfates: 5-10 mcg/cm², Chlorides: 3-5 mcg/cm²

Surface must be completely dry before applying.

1) SUPER THERM must be applied during proper temperatures (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 needle 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).

MIXING

SUPER THERM® should be mechanically mixed or mixed by hand (boxing) 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) If application is by roller, use a 3/4 inch nap roller.
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.
   - ***NOTE***: 2" corrugation = roof size x 135%; 2.5" corrugation = roof size x 145%; 3" corrugation = roof size x 160%

MINIMUM SPREAD RATES (mil thickness)

SUPER THERM® will be applied at no less than a total of 17 mils wet (425 microns)/10.1 mils dry (250 microns) for each application. Spread Rate is 95 sq ft per gallon. (8.8 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 system should be cleaned with soap and water; cleaned brushes and rollers can be reused.

SAFETY DATA SHEET

SECTION 1: Identification of the substance

1.1 PRODUCT IDENTIFIER: SUPER THERM
GHS PRODUCT INDENTIFIED: 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 products 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 Ingredient compositions	%	CAS/PIN	TLV
Texanol	0.5	25265-77-4	3200 mg/kg (oral, rat)
Mica/additives	14.0	12001-26-2	NAV
Waterborne polyurethane	10.0	58043-05-3	NAV
Resins & water	75.5%	Proprietary	

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 C02

5.2 Special hazards arising from the substance or mixture:
Hazardous combusion 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 flammabillity: 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

PREPARED BY: J. Pritchett, Superior Products Int'l II, Inc. **DATE**: 1/31/20