



## THERMO-SHIELD ROOF COAT

### DESCRIPTION

Thermo-Shield® Roof Coats are highly efficient, energy-saving, flexible coatings, made from a water-based pure acrylic resin system filled with hollow sodium borosilicate glass micro spheres. Each micro sphere acts as a sealed cell and the entire mastic acts as a thermally efficient blanket covering the entire structure. These coatings are non-toxic, friendly to the environment and form a monolithic (seamless) membrane that bridges hairline cracks. They are completely washable and resist many harsh chemicals. Thermo-Shield® Roof Coats have high reflectance and high emittance as well as a very low conductivity value. Thermo-Shield® Roof Coats greatly reduce thermal shock and heat penetration by keeping roof surfaces much cooler in hot summer weather. They offer UV protection and low VOC's. They display excellent dirt pick-up resistance and retain their flexibility long after aging. Thermo-Shield® Roof Coats reduce noise transmission and have an effective use range from -40 Deg F to 375 Deg C (700 Deg F).

### TYPICAL USES

Primarily used as a roof coating where joints, seams, cracks and gaps around protrusions are reinforced with a 100% polyester spun laced fabric embedded in the membrane. They may be utilized wherever a weather resistant membrane-like coating is required. The STD formula is used in most climatic conditions. The TROPICAL formula is used in climatic conditions where fungi growth is a major concern. The ULA formula is used on buildings and installations where shear extra-high fire resistance is desired i.e. oil & gas.

### PRIMER

No primer is usually required on mill finish metal substrates and concrete surfaces. Rusty surfaces require rust control prior to the application of the roof coats. Powder Coated/ Baked Enamel/ PVDF coated substrates will need a suitable primer system to enhance adhesion.

### SURFACE PREPARATION

All surfaces must be clean and free from laitance, dust, dirt, oil and grease. Minimally, surfaces should be power washed prior to coating, providing this will not damage the roof or cause leaks.

### COLOR

Tinting may be achieved with Thermo-Shield® Roof Coatings by the addition of universal colorants. Darker colors will give a correspondingly lower reflectivity.

### SPECIFIED DRY FILM THICKNESS

Flat Roof 700 microns DFT (27 mills) / Flat Roof 830 microns DFT (33 mills)  
Sloped Roof 300 microns DFT (12 mills)

### PERCENT NON-VOLATILE

51.67% by volume  
51.14% by weight

### THEORETICAL COVERAGE (2 or more coats)

2.45 m<sup>2</sup> per gallon at 830 microns DFT  
3 m<sup>2</sup> per gallon at 700 microns DFT  
7 m<sup>2</sup> per gallon at 300 microns DFT

### DRYING TIME

To set: 45 minutes  
To re-coat: 12 hours  
To through: 12 hours

At 24 deg C and 50% relative humidity

After 45 minutes, Thermo-Shield® Roof Coats have surface set to the point where it is no longer susceptible to airborne dust and will not run in the presence of increase humidity. Do not apply Thermo-Shield® Roof Coats if precipitation is imminent or is likely to occur before Thermo-Shield® Roof Coatings are dry through, or if temperature is expected to drop below 40 deg F.

### INSULATION : [COOL ROOF RATING COUNCIL SRI: 110](#)

Although these Roof Coats enjoy very low Conductance (0.05 W/mK), it is the combination of their high Reflectance (88%), high Emittance (94%) and Endothermic Effect® that makes them a very good choice for protecting your roofs from heat buildup. Unlike typical mass insulation, where heat conduction is just slowed down, this technology keeps the heat out. Sun light only produces heat when it is absorbed by the roof surface, and being able to keep heat from forming into the surface of the roof is a very effective way to insulate. The cooling process of Endothermic Effect® ensures that the surface continues to insulate, even if Reflectance is diminished with aging, dust build-up or darker colors.



### **FLEXIBILITY**

Coatings remain flexible at -50 Deg F (-45.6 Deg C) – Eliminate thermal-shock damage – Maintain their strength at 400 Deg F (204.44 Deg C), Will pass 180 Deg bend at 1.11 Deg C after 60month exposure.

### **ADHESION**

Excellent adhesion to a wide variety of substrates: wood, urethane foam, galvanized steel, aluminum, asphalt roof shingles, concrete, asbestos and others.

### **ACCELERATED WEATHERING**

ASTM G53, Q-UV 3000 no evidence of chalking, de-laminating or loss of flexibility.

### **RESISTANCE TO WATER PONDING**

Excellent resistance to ponding water. This is a result of a careful balancing of the following properties:

Passage of bulk water at 50 hours	... 40-55 mg/m <sup>2</sup>
Permeability (ASTM E 96-80)	... 08.80% Perms
Film Swelling (at Equilibrium)	...10.17%

### **VARIABLE PERMEABILITY**

This feature, unique to Thermo-Shield®, allows the membrane to perform unlike any other coating. When conditions are dry, the polymers shrink and open pores to allow trapped water vapor to breathe out of the substrate, but when conditions are wet (raining, ponding of water, etc.), the polymers swell, close the pores, and the entire membrane becomes watertight.

### **SPREADING RATE PER COAT (1 millimeter = 1000 microns)**

Suggested: 9 sm/gl – 371 microns WFT (15 mills) – 233 microns DFT (9 mills)

Maximum: 12 sm/gl – 275 microns WFT (11 mills) – 175 microns DFT (7 mills)

Minimum: 6 sm/gl – 567 microns WFT (22 mills) – 350 microns DFT (14 mills)

This rate allows for 10% loss

### **MIXING**

Stir each container thoroughly using low speed mechanical agitation to avoid air entrapment.

### **NUMBER OF COATS**

Two to three coat application (minimum dry film-build of 700 microns DFT for flat and asphalt shingle granulated roofs, and 300 microns for well sloped roofs – consult Application Manual) will give the best long-term protection at minimum cost. The principle cause of coating failure is water ponding in low film thickness i.e. less than the recommended thickness.

### **THINNING**

None required. Clean water in small amounts (up to 0.24 Liter –1 cup- per gallon) may be added to replace evaporation losses or to adjust for spray equipment configuration. Caution: excessive thinning will cause the coating to loose adhesion and elasticity.

### **EQUIPMENT**

Roller or airless spray application is recommended. Very small areas may be brushed. When Thermo-Shield® Roof Coatings are applied by brush, three (3) coats cross-brushed are required for adequate protection.

#### **Airless Spray:**

Tip Orifice	.031 inches
Atomizing Pressure	2200 - 2500 psi
Fan Spread	60 degrees
Pump	1gallon per minute at 2500 psi
Filer	Remove filters and screens

\*\*\* Prime pump with water before attempting to spray Thermo-Shield® Roof Coatings. (Acceptable equipment includes Binks Super Hornet, Graco 433 or larger, and many others)

### **METHODS**

To assure adequate and uniform coverage, the “spray and back roll” or the “cross spray” techniques are recommended. Thermo-Shield® Roof Coatings should be applied in full wet coats.

### **CLEAN UP**

Clean all tools and equipment with warm soapy water. Rinse with clean water; flush mineral spirits through spray equipment to prevent rusting and to lubricate packing and gaskets.

### **PACKAGING**

Five-gallon pails



#### **APPROXIMATE SHIPPING WEIGHT**

Net weight per gallon            4.64 kg (10 lbs)  
Five-gallon pail                    24.13 kg (53 lbs)

#### **STORAGE**

Minimum 0 Deg. C                    Maximum 30 Deg. C (32 Deg F – 86 Deg F) DO NOT FREEZE

#### **SHELF LIFE**

Minimum 2 years (keep from freezing)

#### **SETA FLASH POINT**

Non-Flammable (water based)

#### **DOT CLASS**

Not regulated

#### **PRODUCT CODES**

STD WHITE: 5962 – STD ACCENT BASE: 5965 – TROPICAL WHITE: 5966 – TROPICAL ACCENT BASE: 5967 – UL CLASS A: 5975

#### **WARRANTY**

5 to 10 year extendable LIMITED WARRANTY

The sole remedy for goods not in conformance with any warranty is replacement of the product or return of purchase price. SPM Thermo-Shield® shall not be liable for any other damages, including but not limited to labor expenses.

Thermo-Shield® is a charter member of the U.S. Government Energy Star Roof Program. The U.S. Department of Energy (DOE) and the Environmental Protection Agency (EPA) state the following benefits are derived from the use of reflective coatings:

- ✓ Reduction of energy used and cooling costs (up to 40%)
- ✓ Downsizing of air-conditioning equipment
- ✓ Lowering of the surrounding air temperature in a community
- ✓ Decreasing of pollution in urban areas

**Thermo-Shield® is a trademark of SPM Thermo-Shield since 1987. Thermo-Shield® is a registered Trademark in the United Arab Emirates since 2011.**

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