

# SUNSHIELD

## ACRYLIC ROOF COATING

### Technical Data & Application Instructions

#### PRODUCT DESCRIPTION

SUNSHIELD is an economical, water-based elastomeric acrylic coating system that provides high reflectivity as well as good weatherability, ultraviolet resistance and fire retardancy for the protection of polyurethane foam and other roofing substrates. It consists of a separate basecoat and topcoat in order to maximize the efficiency of the system, although the topcoat can be used on its own. SUNSHIELD Basecoat and Topcoat are single-package materials designed for easy application with conventional or airless spray equipment, as well as brush or roller.

#### BASIC USES

SUNSHIELD was especially developed for protecting polyurethane foam insulation, as well as extending the life of new or existing built-up, metal, concrete, modified bitumen, single-ply and composite shingle roofs by providing a white reflective topcoat. The high reflectivity of SUNSHIELD keeps the roof substrate cool, which not only prolongs its longevity, but saves on energy costs. SUNSHIELD'S rich consistency uniformly covers the textured profile of various substrates, forming a permanently flexible monolithic membrane, providing protection from normal weathering, aging and ultraviolet exposure.

#### COLORS & ENERGY CERTIFICATIONS

SUNSHIELD Basecoat is available in standard Light Gray. SUNSHIELD Topcoat is available in standard White, Tan, Light Tan and Solar Gray colors to meet ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED reflectance and emissivity criteria. White and Light Tan also meet California Title 24 requirements. All other colors are custom matched by UNITED for the specific application. Color chips or samples must be furnished to UNITED for all custom colors. It is recommended that dark colors be tinted in KYMAX topcoat only

#### PACKAGING & MIXING

SUNSHIELD components are single package, ready-to-use materials available in 5-gallon (19 liter) pails and 55-gallon (209 liter) drums.

SUNSHIELD components may appear well mixed, but upon standing will settle into a two-stage suspension. Thoroughly mix the contents of all containers using a power mixer for a minimum of five (5) minutes prior to application.

#### TYPICAL PROPERTIES

- Solids by Weight:**  
66% ( $\pm 2$ )  
[ASTM D1644]
- Solids by Volume:**  
50% ( $\pm 2$ )  
[ASTM D2697]
- Surface Dry Time for Foot Traffic Resistance:**  
5 hours at 75°F (24°C), 50% R.H.  
White at 16 wet mils (406 microns)  
3 hours at 75°F (24°C), 50% R.H.  
Gray at 16 mils wet (406 microns)  
*Required times will increase @ lower temperatures and/or higher humidities*
- Tensile Strength:**  
200 psi ( $\pm 20$ )  
[ASTM D412]
- Elongation:**  
180% ( $\pm 20$ )  
[ASTM D412]
- Hardness:**  
60 to 70 Shore A  
[ASTM D2240]
- Permeance:**  
2.7 US perms at 22 dry mils  
[ASTM E96]
- Low Temperature Flexibility:**  
Passes 180° flex over ½ mandrel @ -5°F (-21°C) [Federal Test Method No. 141a-6221]
- Temperature Limits For Normal Service Conditions:**  
0°F to 200°F (-18°C to 93°C)
- Code Approval:**  
UL 790 Class A

#### WARRANTY

UNITED'S 5-Year Standard Warranty, issued to the Building Owner, is a guarantee that the SUNSHIELD coating, when properly applied over sprayed-in-place polyurethane foam or other acceptable roof substrates, will not leak water over a 5-year period. This Warranty is provided by UNITED at **no cost**. Refer to Application Instructions for minimum dry film thickness requirements.

## SURFACE PREPARATION

All surfaces must be clean, dry, and free of any dirt, dust, oil, surface chemicals, or other contaminants that may interfere with optimum adhesion. All loose gravel, if present, shall be removed by power sweeping and/or vacuuming. Remaining gravel shall be power spud to achieve the smoothest surface possible. Any unsound areas in the roof, i.e. blisters, delamination, deterioration, moisture saturation, sharp projections, ridges, etc. shall be repaired or replaced.

Low areas that hold excessive ponding water must be brought into conformance by installing additional drains or adding additional slope to existing drains. Excessive ponding is any area that holds in excess of ½" (5 cm) of water as measured 24 hours after a rainfall.

Surfaces that are contaminated with oil, grease, embedded dirt, loose paint or coating, etc. shall be cleaned using **United Cleaning Concentrate (UCC)**, a biodegradable cleaner, and water. High-pressure power washing and/or mechanical scrubbers may be necessary to remove tightly adhering contaminants. Rinse thoroughly with clean water to remove all traces of the **UCC** cleaner. If chemical cleaning is not required, thoroughly sweep, vacuum, or blow down roof to remove any dirt, dust or other contaminants.

New polyurethane foam surfaces shall be coated between 24 and 72 hours following application. Existing foam shall be free of degradation. Any oxidized foam shall be repaired or replaced. Repair any physical damage to the polyurethane foam prior to coating, and do not coat directly over foam that has been mechanically scarified or sanded.

## COATING APPLICATION

Prior to applying **SUNSHIELD** to the roof surface, all detail work on seams, splits, protrusions, drains, flashings, etc. shall have been completed utilizing **Roof Mate Butter Grade, Roof Mate Fabric** and/or **Mesh**. Any primers shall also have been applied and allowed to dry. Consult separate Technical Data on these products for details on application.

**SUNSHIELD** is applied by conventional or airless spray equipment or medium to heavy nap rollers. Brushing may be used for touch-up, edging and other detail work. For airless spray, use a pump with 1-gallon per minute (3.8 l/minute) minimum output, 2,000 psi (13,790 kPa) pressure capability, and a reversible, self-cleaning tip with an orifice size of .027" to .039" (.69 to .99 mm).

**SUNSHIELD** Basecoat can be used for up to half of the total required coating thickness, and must always be used in combination with **SUNSHIELD** Topcoat. **SUNSHIELD** Topcoat can be used on its own to achieve the total required coating thickness.

**SUNSHIELD** applied at the rate of 1 gallon per 100 sq. ft. (.4 l/m<sup>2</sup>) will theoretically yield 8.0 dry mils (203 microns). It is the responsibility of the applicator to apply sufficient material to achieve the minimum dry film thickness required.

To qualify for **UNITED'S** 5-Year Standard Warranty, **SUNSHIELD** shall be applied in a minimum of 2 or 3 coats at a minimum total rate of 2.5 to 4 gallons per 100 sq. ft. (1.0 to 1.6 l/m<sup>2</sup>), depending on the substrate. This coverage rate will theoretically result in 20 to 32 dry mils (508 to 813 microns). The actual dry film thickness required at any location to qualify for **UNITED'S** 5-Year Standard Warranty Program is 15 to 25 dry mils depending on the substrate. Consult **UNITED'S** Technical Service Department for specific warranty requirements.

Each coat of **SUNSHIELD** shall be applied in a direction perpendicular to the previous coat, and must be dry and cured before an additional coat is applied. All surfaces must be uniformly coated and be free of any voids, pinholes and blisters. **SUNSHIELD** shall extend up and over all roof substrates on vent pipes, walls, parapets and other protrusions to terminate a minimum of 3" (7.5 cm) above the substrate, creating a self-terminating flashing. Extend coating up and under all counter-flashings.

If any form of dirt, dust, sand or pollution fallout is detected on the surface of **SUNSHIELD**, it is necessary to remove this material prior to applying an additional coat. Initial cure or dry time to achieve resistance to rain or overnight dew will normally require several hours. Total cure to achieve long term resistance to heavy rain or ponding water will usually take 24 to 72 hours depending on ambient conditions.

Use water and **UCC** or other similar detergent to flush equipment. Purge the water from the system using Mineral Spirits or Glycol Ether.

## LIMITATIONS & PRECAUTIONS

**SUNSHIELD** should generally not be used on cold storage applications where a vapor barrier coating is required, or for interior applications in place of a thermal barrier.

**SUNSHIELD** will freeze and become unusable below 32°F (0°C), or when temperatures fall below 32°F (0°C) within a 24-hour period after application. Do not apply if weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation and air line masks or positive pressure hose masks. Avoid contact with eyes and contact with skin.

For specific information on safety requirements, refer to OSHA guidelines and **SUNSHIELD** Material Safety Data Sheet.



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