



HeatShield® CoolPro-PUW

Water borne PU based Cool Roof Heat Reflective Coating for Metal/Concrete Roof along with Corrosion Protection

INTRODUCTION:

HEATSHIELD® COOLPRO-PUW is a high-quality polyurethane based cool roof coating for metal & concrete surface. When applied on the roofing materials, it reflects sunlight to a greater extent thus preventing heating up in peak afternoons. Highest quality polyurethane resins are combined with reinforcing laminar pigments, and non-migrating fire retardant, resulting in superior durability, weatherproofing, ultraviolet resistance, algae/mildew resistance and fire retardancy. **HEATSHIELD® COOLPRO-PUW** is highly reflective, thermal insulating, permanently flexible, waterproofing membrane remaining impervious to mass water penetration from the exterior.

Uses:

- All metal roofs
- Cured concrete substrate (Flat, sloping or wall)

General Introduction:

HEATSHIELD® COOLPRO-PUW is manufactured with polyurethane combined with unique chemistries that provide both long term dirt pick-up resistance and outstanding adhesion to many roofing substrates.

The durable coating can be easily applied over a variety of roofing substrates including asbestos, galvanized steel, asphalt shingles, or cured concrete, with suitable primer and offer the following benefits:

- Excellent waterproofing characteristics
- High reflectivity which reduces roof surface temperatures, thereby prolonging roof life and reducing interior temperatures
- Superior exterior durability and UV light resistance.
- High temperature stability.
- Dirt pick-up resistance.
- Easy application by spray, brush, or roller-thus lowering application costs.

High-Temperature Advantages



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HEATSHIELD® COOLPRO-PUW's formulation of unique inorganic products allows increased insulation over the more conventional coatings now available.

Insulation

Although these Roof Coats enjoy exceptionally low Conductance (0.05 W/mK), it is the combination of their high Reflectance (>90%), high Emittance (94%) and Endothermic Effect that makes them a very good choice for protecting your roofs from heat build-up. 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 highly 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 colours.

Stop Leaks

HEATSHIELD® COOLPRO stops most small holes in the substrate by application directly to surface substrate.

Dirt Pickup Resistance

Without dirt pickup resistance, the roof coatings would quickly darken with age. Because dark materials tend to absorb heat, dirt pickup can significantly increase roof surface temperatures, which, in turn, increases interior temperature and energy costs. **HEATSHIELD® COOLPRO-PUW**, however, resists dirt pickup and retains their white, reflective appearance.

Colours

HEATSHIELD® COOLPRO-PUW is stocked in white colours. Other colours available are yellow, Blue, red, brown, gray and black.

Warranty



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HEATSHIELD® COOLPRO-PUW warranty available in five (5), ten (10) and fifteen (15) year periods. The warrantor guarantees the installations against leaks caused by normal weather. Refer to individual warranty document for additional information.

TYPICAL CHARACTERISTICS:

Nature	Water Borne Two-component PU based coating
Colour	White / Other Colours
Application time at 30°C	3 to 4 hours
Surface dry time at 30°C	2 to 3 hours
Hard dry time at 30°C	8 to 10 hours
Complete curing time at 30°C	3 days
Recoat ability time at 30°C	4 to 5 hours
Ultraviolet Resistance (ASTM D822)	No deterioration effects after 5000 hours
Finish	Smooth and matt
Dry film thickness	120 µm (two coats) for metal, 250 µm for concrete
Coverage	45 ft²/kg (100 microns) (allow loss factors as per roughness or porosity of surface)
Tensile Strength (ASTM D412)	>3 MPa @ 25 °C (for Concrete Substrate)
Recommended Coats	2 to 3 coats depending upon the substrate
TSR	65%
Solar Reflectance	0.93
Shore D Hardness	78
Packing	5kg, 20kg pack

Mixing

Use a power mixer capable of uniformly mixing the entire quantity from containers marked Part A and Part B, prior to use. Reducing the mixture is not recommended, as it affects the coatings' ability to achieve a heavy film build with excellent verticle hold and hide.

Surface Preparation

CONCRETE

Allow new concrete to cure a minimum of 28 days at 25°C. Verify concrete dryness in accordance with ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (moisture



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vapor transmission should not exceed 1.5 kg per 1,000 sq ft in a 24 hour period), F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes" (relative humidity should not exceed 80%), or D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" (no moisture present). Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, water jet or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 5 surface profile. Large cracks, voids and other surface imperfections should be filled with a recommended filler on surface.

METAL

The surface should be blast cleaned to SSPC-SP 10-63T or NACE No. 2 i.e. loose rust and scales, dirt, grease, oil, paint, wax, weak oxide films and other contaminants should be removed. Blast cleaning to SSPC-SP 5-63 or NACE No. 1 is recommended where heavy corrosive conditions exist or coating is required to be immersed. That means a surface with a grey metallic colour, slightly roughened to form a suitable anchor pattern for coatings. This surface is free of all oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint and other foreign matter. In absence of blast cleaning, prepare the metal surface by wire brushing, sanding, grinding, scrapping or chipping with hand or power tools. Remove all the contaminants. Apply one coat of **Multithane® Primer 21**, **Multipox® MetaPrime ZR1201** epoxy primer or Zinc Phosphate Primer **Multipox® MetaPrime ZP1205**. Then apply one or two coats **HEATSHIELD® COOLPRO PUW**.

A small area should always be tested to ensure adhesion and compatibility.

Application

Reinforce all moving cracks, seams, splits, control joints, verticle/ horizontal interfaces, roof termination pints, openings, transition areas, around the base of all vents pipes and other protrusions, as well as around HVAC units and other roof mounted equipment with **Fibrecon Mesh**, a polyester reinforcement fabric, embedded in to **FloorPrime EP5109 (OSC)** followed by **HEATSHIELD® COOLPRO-PUW**.

All roof preparation materials shall be allowed to dry thoroughly prior to application of the roof coating.



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Immediately prior to the application of the coating system, all dust, dirt, and other contaminants shall be blown off the roof surfaces to be coated using high pressure compressed air.

1. Apply high quality PU/epoxy primers such as **FloorPrime EP 5109 (OSC)** or **Multicoat MetaPrime Primers** (25-35 micron) for metal and **Multithane Primer 21** for concrete in one coat.
2. Apply **HEATSHIELD® COOLPRO-PUW** after mixing component A and B to uniform consistency as per desired thickness.
3. After allowing the first coat to dry, apply second coat **HEATSHIELD® COOLPRO-PUW** at a minimum rate of 0.1kg/m² or as per desired thickness.
4. The total coat, minimum dry film thickness required at any location shall be 120-150 micron for metal roofing and 200-250 micron for concrete roof (excluding primer).

Upon completion of the roof coating system, Multichem , Architect, or Applicator shall make final inspection to determine the dry film thickness of the coating and to verify that systems meets the manufacturers requirement of Warranty.

Thinning

None required.

CLEAN UP

Clean all tools and equipment with warm soapy water or **MultiKleen®** products.

SAFETY DATA:

- **Irritating to eyes, respiratory system and skin.**
- **Risk of serious damage to eyes.**
- **Keep out of reach of children. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice.**
- **After contact with skin, wash immediately with plenty of clean water.**
- **Wear suitable protective clothing, gloves and eye/face protection.**

Please consult our technical department for further information.

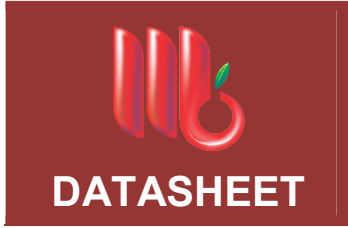
WARRANTY



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Acrylic Cool Roof Heat Reflective Coating

Multichem warrants **HEATSHIELD® COOLPRO-PUW** to be free from manufacturing defects as defined in this warranty. Manufacturing defects are those defects that occur due to the quality of the ingredients or from the manufacturing process itself. This warranty does not include labor costs and other costs or expenses associated with the removal or installation of **HEATSHIELD® COOLPRO-PUW**.

Because the Multichem does not perform the actual installation, it cannot be held responsible for the results of the application. Multichem specifically disclaims problems that occur due to weather conditions, structural movement, structural design flaws and application techniques.

This warranty is in lieu of all other warranties expressed or implied including the warranty of merchantability and fitness of purpose and of all other obligations or liabilities on Multichem part. Multichem neither assumes nor authorizes any person to assume for Multichem any liability in connection with the sale and installation of **HEATSHIELD® COOLPRO-PUW**.

Because of constant improvement of manufacturing techniques and formulations, Company reserves rights to change this datasheet and its contents without prior notice.



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