



# HeatShield® CoolPro W

Cool Roof Heat Reflective Coating for Concrete & Metal Roof

## INTRODUCTION:

**HEATSHIELD® COOLPRO W** is a high quality pure acrylic based cool roof coating for concrete and metal roofs. It is ready to use material, when applied on the roofing materials, reflect sunlight to a greater extent thus preventing heating up in peak afternoons. Highest quality acrylic 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 W** is highly reflective, thermal insulating, permanently flexible, waterproofing membrane remaining impervious to mass water penetration from the exterior.

### Uses:

- ) All concrete and metal roofs (**HeatShield® CoolPro-PU**)
- ) Wood substrate (Flat, sloping or wall )

### General Introduction:

**HEATSHIELD® COOLPRO W** is manufactured with 100% acrylics which, are internally plasticized to maintain elastomeric properties, such as high and low temperature flexibility. In addition, product is 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, and offer the following benefits:

- ) 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.
- ) Low temperature flexibility down to -15 degree.
- ) Dirt pick-up resistance.





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- ) Easy application by spray, brush, or roller-thus lowering application costs.
- ) Low toxicity and order.

## High-Temperature Advantages and Cool Roof Comfort

**HEATSHIELD® COOLPRO W's** formulation of unique inorganic products allows decreased surface temperature from **12 °C to 18 °C** (White colour) depending on substrate conditions and humidity. This leads to good decrease in room temperature giving comfort living, reduced AC consumption thus reducing heat island leading to a cool environment.

## Insulation

Although **HEATSHIELD® COOLPRO W** Roof Coating enjoy very low Conductance (0.05 W/mK), it is the combination of their high Reflectance (>90%), high Emittance (94%) and Endothermic Effect that makes it 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.

## Low Temperature Flexibility

Coating for dimensionally unstable roofing substrates must have long-term low temperature flexibility. This is necessary to accommodate thermal expansion and contraction of the substrate, so that coatings will not fail over an extended period of time or with extreme weather conditions. It should be remembered that the effects of extreme weather conditions are not restricted to cold climates. Evaporation of water after a sudden thunderstorm on a hot day in any geographic location can rapidly drop the roof temperature as much as 100 degrees, causing severe thermal stress on the roof surface.





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Roof coating based on **HEATSHIELD® COOLPRO S** technology can withstand a 180 degree flexibility bend at –15 degree without cracking. Since there is no plasticizer to migrate from the system, this flexibility is retained over time. Long term resistance to cracking extends the life of the roof. IT IS IMPORTANT TO NOTE THAT HEAT REFLECTIVE ROOF COATINGS should exhibit good mechanical properties at room and low temperatures and after exterior exposure.

## Stop Leaks

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

## Dirt Pickup Resistance

Polymers designed for **HEATSHIELD® COOLPRO W** roof coating combine the inherent flexibility of pliable, low TG polymers with long term resistance to dirt pickup. 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 W**, however, resists dirt pickup and retains their white, reflective appearance.

## Colours

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

## Warranty

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





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## TYPICAL CHARACTERISTICS:

<b>Nature</b>	<b>Single Component 100% Acrylic based coating</b>
<b>Colour</b>	<b>White / Other Colours</b>
<b>Application time at 30°C</b>	<b>3 to 4 hours</b>
<b>Surface dry time at 30°C</b>	<b>20 to 30 minutes</b>
<b>Hard dry time at 30°C</b>	<b>8 to 10 hours</b>
<b>Complete curing time at 30°C</b>	<b>3 days</b>
<b>Recoat ability time at 30°C</b>	<b>4 to 5 hours</b>
<b>Ultraviolet Resistance (ASTM D822)</b>	<b>No deterioration effects after 5000 hours</b>
<b>Finish</b>	<b>Smooth and matt</b>
<b>Dry film thickness</b>	<b>120 µm (two coats)</b>
<b>Coverage</b>	<b>50-65 ft<sup>2</sup>/kg (100 microns) (as per roughness or porosity of surface)</b>
<b>Tensile Strength (ASTM D412)</b>	<b>1.6 MPa @ 25 °C</b>
<b>Density</b>	<b>1.3 kg/lit (approx.)</b>
<b>Recommended Coats</b>	<b>2 to 3 coats depending upon the substrate</b>
<b>TSR</b>	<b>65%</b>
<b>Solar Reflectance</b>	<b>0.92</b>
<b>Shore D Hardness</b>	<b>60</b>
<b>Packing</b>	<b>5kg, 20kg pack</b>

## Mixing

Use a power mixer capable of uniformly mixing the entire container 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.





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## Surface Preparation

All surface must be clean and dry and free of any dust, dirt, oil, surface chemicals or other chemicals or other contaminants that may interface 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, severe corrosion, 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 the existing drains.

## 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® G55**, a polyester reinforcement fabric, embedded in to **HEATSHIELD® COOLPRO W**.

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

Immediately prior to the application of the coating system, all dust, dirt, and other contaminants shall be flown off the roof surfaces to be coated using high pressure compressed air. Use equipment with vacuum to remove remaining dust.

1. Apply high quality primer such as **UltraRoof Surface Conditioner** or **BondCoat® AC** in one coat.
2. Apply **HEATSHIELD® COOLPRO W** after mixing to uniform consistency, at a minimum rate of 0.1 kg/m<sup>2</sup>.
3. After allowing the first coat to dry, apply second coat **HEATSHIELD® COOLPRO W** at a minimum rate of 0.1kg/m<sup>2</sup>.
4. The total coat, minimum dry film thickness required at any location shall be 120 micron for roofing.





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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 systems 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

Multichem warrants **HEATSHIELD® COOLPRO W** to be free from manufacturing defects as defined in this warranty. Manufacturing defects are considered to be 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 W**.

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 W**.

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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