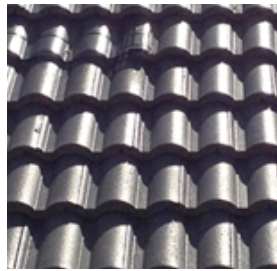


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OVERVIEW:

Thermal insulation, mold/bacteria/algae resistant, UV and moisture resistant CLEAR roof protectant. Sustainable coating which reduces energy costs and carbon emissions. Use over sloped roofs: Asphalt Shingle, Wood Shingle, Metal Roofs. FOR TILE ROOFS: Crystal can be used over "color through" tiles (matte, porous texture) but not slurry or glazed tiles (shiny surface). Can be used over flat roofs with good drainage.

Long-term performance and durability resulting in lower maintenance & cleaning costs and longer asset life. Prevents corrosion over metal roofs. Color: Translucent (Clear Coat) with matte finish. Note: Over light colored shingles, there is a very slight amber color that may be visible for the first two weeks, after which becomes completely clear; this is a natural part of the curing process.

ADVANTAGES:

THERMAL INSULATION: Excellent thermal insulation performance to maximize control of heat loss and heat gain, contributing to reduced energy costs in all seasons. Resistant to moisture infiltration and weathering for consistent thermal performance over time.

MOLD/BACTERIA RESISTANCE: Resistant to growth of mold and mildew. Coating has been tested to ASTM D5590 and ASTM G21 for mold resistance. Product has been tested for resistance to Gleocapsa Magma, the bacteria that causes black/dark green streaks on roofs.

WEATHERING RESISTANT: Protects roof surfaces from weathering by coating them in a protective moisture and weather resistant clear coat. Reduces damage from harmful UV rays by providing excellent UV resistance. Can increase lifespan roofing materials.

ENVIRONMENTALLY FRIENDLY: Non-toxic, non-flammable, water-based coating is low VOC, low odor, and environmentally friendly.

CORROSION RESISTANT FOR METAL: The hydrophobic nature of this product allows it to provide excellent corrosion resistance.

USES:

- ✓ Clay Tiles (except for slurry)
- ✓ Concrete Tiles (except for slurry)
- ✓ Wood Shingles
- ✓ Slate Tiles (except for slurry) ✓
- Composite Tiles
- ✓ Metal Roofs

BENEFITS:

- ✓ Energy savings
- ✓ Mold resistant, without use of harsh chemicals
- ✓ Moisture repellent
- ✓ Corrosion resistance for metal roofs
- ✓ Cost effective, with long-term savings and short payback period
- ✓ Non-toxic, water-based, low VOC
- ✓ 10-year warranty
- ✓ Outstanding durability and weathering
- ✓ Easily applied by brush, roller or paint sprayer.
- ✓ Clear, with matte finish, allowing the beauty of your roof to shine through
- ✓ Provides protection from harmful UV rays
- ✓ Reduces need for regular power washing of roof due to staining
- ✓ Breathable, won't act as a vapor barrier
- ✓ Easy cleanup with soap and water

PRODUCT DATA:

Theoretical coverage rate for One Gallon (3.79 Liters)	Yields approximately 5 mils/127 microns wet film thickness (1 coat) over 450 square feet (42 square meters) of surface area, depending on surface.
Coverage rate for typical application thickness for One Gallon (3.79 litres)	Yields approximately 10 mils/254 microns wet film thickness (2 coats) over 225 square feet (21 square meters) of surface area, depending on surface.
Typical applied coat thickness	5 wet mils (127 microns) per coat
Typical dry film thickness (DFT) of 1 coat	1 mil (25.4 microns) DFT
Typical touch dry time for 1 coat	20 minutes to 1 hour
Typical "before rain" dry time	30 minutes after last coat is dry
Typical full cure time	30 days, dependent upon environmental variables
Shelf life	2 years, from date of manufacture
VOC content	49.13 g/L (actual)
Viscosity	300 to 700 (cps)
Accelerated Salt Fog Corrosion Test (GM9540P)	Completed 24 cycles, no rust present <i>The GM9540P Accelerated Corrosion Test is an advanced cyclic method originally developed by General Motors and now the corrosion test preferred by the US Navy. Passing 8 cycles is considered the standard for an anticorrosion coating.</i>
Cross Hatch Adhesion - ASTM D-3359	0% 5B, edges remain smooth, no flaking
Pull Apart Strength - ASTM D-4541	2400-2450 psi
Flame Spread/Smoke Developed - ASTM E84	Class A
U/V Cabinet Aging Cabinet	Passed 10 year equivalent with no discoloration or loss of adhesion
Mold Resistance - ASTM D5590 & ASTM G21	Zero or minimal growth
Microbiology Testing for Gleocapsa Magma	Zero growth
Thermal conductivity testing on concrete roof tile	30% decrease in thermal conductivity
Thermal resistance testing on concrete roof tile	45% increase in thermal resistance
Emissivity as tested on concrete roof tile	0.91
Permeability	5 perms/inch @ 23 deg C.

LIMITATIONS:

- Do not use as a final floor covering.
- Do not use over slurry or glazed roof tiles.
- Do not install where long-term submersion in liquid or continuous exposure to moisture is a possibility.
- Do not install over poor surfaces, such as those with flaking paint, grease or other contaminants.
- Do not allow application to be subject to rain or condensation for at least 30 minutes after last coat is touch dry.
- Do not allow application to be subject to freezing temperatures during first 30 days.
- Do not rely on visual measurement for coating thickness. Always use a wet film thickness (WFT) and/or dry film thickness (DFT) gauge in several areas to ensure proper application thickness. See Crystal Application Handbook for further details.

NOTE ABOUT CURE TIME:

The product reaches full insulating ability AFTER a cure time of approximately 30 days, which is dependent upon environmental variables. Test of thermal performance should be performed after full cure. Thermal benefits will typically begin to be seen approximately two weeks after application, and will continue to improve as the cure time completes. Final cure is complete when thermal performance has reached a steady state.

All statements, technical information and recommendations contained in this document are based upon tests or experience that Industrial Nanotech believes are reliable. However, many factors beyond Industrial Nanotech's control can affect the use and performance of an Industrial Nanotech product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the Industrial Nanotech product to determine whether it is fit for a particular purpose and suitable for the user's method of application. No warranty, expressed or implied is given regarding the accuracy of this information. Except where prohibited by law, Industrial Nanotech will not be liable for any loss or damage arising from the Industrial Nanotech product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability. For questions, contact Industrial Nanotech, Inc. at 800-767-3998 or +1 239-254-0346. Nansulate® products are Made in the USA.