ROOF COATINGS SPECIFICATIONS

DESCRIPTION * * * THERMO-SHIELD® ROOF COATING IS A HIGHLY EFFICIENT ENERGY-SAVING FLEXIBLE COATING. THERMO-SHIELD® ROOF COATING IS A WATER-BASED, PURE ACRYLIC RESIN SYSTEM FILLED WITH HOLLOW SODIUM BOROSILICATE CERAMIC MICROSPHERES. EACH MICROSPHERE ACTS AS A SEALED CELL AND THE ENTIRE MASTIC ACTS AS A THERMALLY EFFICIENT BLANKET COVERING THE PROTECTED STRUCTURE. THERMO-SHIELD® ROOF COATING IS HIGHLY REFLECTIVE AND DISPLAYS EXCELLENT DIRT PICK-UP RESISTANCE. IT ALSO RETAINS ITS FLEXIBILITY AT LOW TEMPERATURES.

TYPICAL USES* * * PRIMARILY USED AS A ROOF COATING, IT MAY BE UTILIZED WHEREVER A WEATHER RESISTANT, FLEXIBLE, MEMBRANE LIKE COATING IS REQUIRED.

PRIMERS*** NO PRIMER IS USUALLY REQUIRED. FOLLOW INSTRUCTIONS FOR PROPER APPLICATION REGARDING WARRANTED SYSTEMS ON BITUMEN ROOFS. OUR FLEX-TAC BARRIER & BONDING COAT IS REQUIRED TO OBTAIN GOOD ADHESION BETWEEN THE OIL BASED SUBSTRATE AND OUR WATER BASED ROOF COATING. FLEX-TAC IS USUALLY USED WITH POL-E-FORCE REINFORCING FABRIC. SEE APPLICATIONS INSTRUCTIONS FOR DETAILS.

RUSTY METAL WILL REQUIRE A RUST INHIBITOR AND A METAL PRIMER.

SURFACE PREPARATION*** ALL SURFACES MUST BE CLEAN AND FREE FROM DUST, DIRT, OIL AND GREASE. MINIMALLY, SURFACES SHOULD BE CLEANED WITH A POWER WASHER PRIOR TO COATING PROVIDING THIS WILL NOT DAMAGE THE ROOF OR CAUSE LEAKING.

COLOR* * * TINTING MAY BE ACHIEVED WITH THERMO-SHIELD® ROOF COATINGS BY THE ADDITION OF UNIVERSAL COLORANTS. DARKER COLORS WILL GIVE A CORRESPONDINGLY LOWER REFLECTIVITY TO THE COATING SYSTEMS.

PERCENT NONVOLATILE*** 51.67% BY VOLUME / 51.14% BY WEIGHT

THEORETICAL COVERAGE*** 33.3 SQUARE FEET PER GALLON AT 27 MIL DRY FILM THICKNESS AND NO LOSS (TO BE APPLIED IN 2 OR MORE COATS). (27 MIL = 686 MICRON)

DRYING TIME TO SET: 45 MINUTES TO RE-COAT: 12 HOURS TO THROUGH: 12 HOURS (AT 75 DEG. FAHRENHEIT AND 50% RELATIVE HUMIDITY.)

AFTER 45 MINUTES THERMO-SHIELD® ROOF COATING HAS SURFACE SET TO THE POINT WHERE IT IS NO LONGER SUSCEPTIBLE TO AIRBORNE DUST AND WILL NOT RUN IN THE PRESENCE OF INCREASED HUMIDITY (AT 75 DEG. F. AND 50% RELATIVE HUMIDITY.) DO NOT APPLY THERMO-SHIELD® COATING IF PRECIPITATION IS IMMINENT OR IS LIKELY TO OCCUR BEFORE THERMO-SHIELD® ROOF COATING IS DRIED THROUGH, OR IF TEMPERATURE IS EXPECTED TO DROP BELOW 40 DEG. FAHRENHEIT.

FLEXIBILITY* * * WILL PASS 180 DEG BEND AT 34 DEG F AFTER 6-MONTH 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 G-53, Q-UV, 3000+ HOURS. NO EVIDENCE OF CHALKING, DELIMITATION OR LOSS OF FLEXIBILITY.

RESISTANCE TO WATER PONDING*** THERMO-SHIELD® ROOF COATING DISPLAYS EXCELLENT RESISTANCE TO PONDING WATER. THIS IS A RESULT OF CAREFUL BALANCING OF THE FOLLOWING PROPERTIES:

- PASSAGE OF BULK WATER AT 50 HOURS 40-55 mg/m²
- PERMEABILITY (ASTM E-94-80) 8.8% PERMS
- FILM SWELLING (AT EQUILIBRIUM) 10-17%
- Strong and Elastic ASTM D-865
  - Tensile Strength at 25% Elongation 38Kg/cm²
  - Tensile Strength at Break 40Kg/cm²
  - Ultimate Elongation at Break 70%
- Breathe trapped water vapor ASTM 1653
  - Permeability - water vapor transmission 50 grains/m²/hour
- Good resistance to long term ponding of water
  - Not more than 60 mg/m² 50 hours
- UV Resistance ASTM G-53
  - Q-UV, 3000 + hours
  - No chalking, delaminating or loss of flexibility
- Resistance to Ozone surface cracking ASTM 1149
  - No sign of failure
- Chemical Resistance ASTM 1308 to 27 chemicals
  - 16-hour spot tests on salt solutions, acids, petroleum products and other harsh chemicals
  - No harmful effect
- Solar Reflectance ASTM ES93-82
  - Solar (g) Reflectance (white color) 82%
  - Infrared 94%
- Fire Resistance UL 790 & ASTM E-108
  - Class A rating
- Thermal Conductivity ASTM E1225
  - 0.0515 K
- Oakridge National Laboratories
  - 3-year testing program
  - Reduced summer heat flux through insulated bitumen panel by 66% (the best out of 26 products tested)

Authorized Distributor:

- Rocket Science For Home, Business, Industry And Agriculture.
- Tremendous Energy Savings
- Long Lasting Performance
- Promotes A Healthy Environment
- Proven Results ... Impress ROI
- Made In The USA
- A Coating That Insulates
- 10-20 Year Factory Warranty
- Always Low VOC
- In Service For 25 Years
- Energy Star Compliant
Ceramics are a well known non-conductor of heat, as shown in this remarkable picture where the ceramic cube glows from an interior temperature of 2200 degrees f, yet can be safely held by a bare hand. Space Shuttle science use’s a ceramic composite that is over 90% void. These voids contain a vacuum. In Physics Law it states that nothing by conduction through a vacuum. In the late 1970’s General Industries Corp, a specialty chemical company, along with Rohm and Haas, who developed the special resins and polymers and the 3-M Company, who developed a practical way to use this Space Shuttle technology here on Earth in the form of vacuumed ceramic micro-spheres (less than 100 microns). These spheres are 60% void and in that void there is a complete vacuum. This picture shows just a thin layer of the vacuum ceramic micro-spheres protecting a hand from the incredible heat. This heat blocking protection can now be applied long lasting system to just about any substrate or surface, stand alone roof system, top coat, or repair.

Thermo-shield Fluid Applied Ceramic Roof System contains over 50% by volume of these special vacuum ceramic micro-spheres.

Thermo-shield formula’s are complex combinations of Acrylics, Elastomers, Mastics, Weather-proofers, Dispensers, Reflector Materials, Mildew Inhibitors, Fungicides, Bonding Resins, Anti-shrink Materials, and other Materials Here to Fore Unavailable. The resins are made up of very complex polymers that can hold onto huge amounts of solid particles and still have great adhesion. Normal resins lose much of their adhesion as solids are added. We add huge amounts of our vacuum ceramic micro-spheres, which should float to the surface, but are held in fluid suspension by the polymers. When applied, and the coating has cured, (water evaporates) these micro-spheres pack closely together forming a very effective heat blocking micro-structure. Special polymers also allow the substrate to breath. Under wet conditions they swell allowing no moisture to penetrate, but when dry, the substrate is allowed to vent off any trapped or built up moisture with an impressive 8.8 perm rating. Thermo-shield Roof forms a solidly bonded, seam free, highly flexible system that has an effective use range of -50 degrees f to +400 degrees f.

Hemispherical Spectral Reflectance testing shows excellent reflectivity in the spectrums that account for heat transfer by radiation: 88% in the Visible Light spectrum, and 84% in the Infrared Light (hot) spectrum. It also directly reflects 16% of the harmful UV radiation. Independent Lab tests show UV exposure actually makes the coating stronger by radiation not directly reflected is emitted back into the atmosphere as infrared energy, not heat in roof. This leaves less than 2% radiant energy to be absorbed as heat.

Thermo-shield Roof also has a very low conductivity value. To put it in perspective, let’s look at the conductivity or K-value of other common building materials. (Taken from the 2005 ASHRAE Standards Handbook)
Clay Fired Brick 2.50-10.20,....Stucco 9.70, ....Hardwood, Oak 1.25, Wafer Board 0.63,...Fiberboard Acoustical Tile 0.42, ...Loose Fill Cellulose 0.27...
Thermo-shield Roof has a K Value of 0.05
This radiant barrier technology can even cut heating costs during cold weather, keeping more heat in your home, building, or facility.

As a stand alone Roof
On OSB Wafer Board...
...On Rigid Fiberboard Insulation/Taper System
...On Concrete...

Steel, Wood, Galvanized, Shingles, Aluminum, EPDM, Composition, Tile, Modified Bitumen, Fiberglass, Urethane Foam, Canvas, Stone, Etc, Etc.

At 33.3 sq. ft. per gallon coverage (27 mils DFT) Thermo-shield Roof is guaranteed not to leak, even with ponding water, 100% for a full 10 years. Thermo-shield is being used in fountains and water features for a remarkable non-toxic waterproof liner. After 10 years apply 1/2 the amount of original application and qualify for extended 10 year factory warrantee.
LOW VOC, Non-Toxic in liquid or cured state. No noxious fumes. Water based, easy clean up.
Incredible Fire Resistance with Type 1 Rating. UL Class A Type 1 Fire Resistance Rating is also available.
Completely Washable. Resists many harsh chemicals including oils, gasoline and acids.
Vacuum Ceramic Microspheres block sound transfer and add improved acoustics.
HEAT BLOCKING PERFORMANCE EQUAL TO AN R-22 !

Thermo-shield Roof can be tinted to any color you choose!