

# **SOLAR-SHIELD®**

## ***Fluid Applied Borosilicate Roof and Wall Coatings***

*Waterproofs with an attractive finish. Protects substrate from heat & sun's UV rays. Repairs interior and exterior surface cracks. Excellent adhesion to most substrates. Superior flexibility at extremely low temperatures*

***No heat gain or loss***

***Reduce Noise levels***

***Condensation Control***

# SHOLAR-SHIELD

FLUID APPLIED BOROSILICATE ROOF COATINGS



## PRODUCT INFORMATION

An innovative roof waterproofing technology combining strength, lightweight protection and integral insulation.

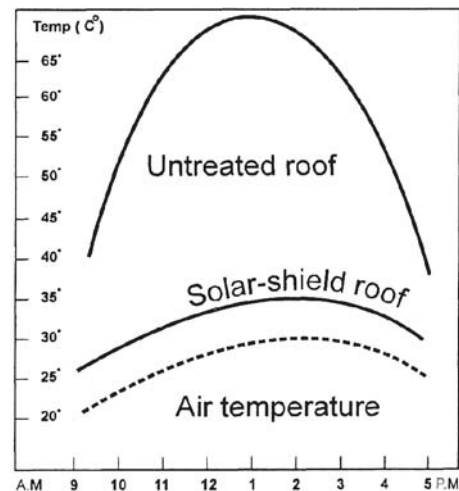
The SOLAR-SHIELD is a fluid-applied borosilicate elastomeric roof mastic. Once in place the SOLAR-SHIELD Roof system becomes a seamless, continuous monolithic membrane impervious to adverse weather conditions, airborne contaminants, and extreme temperature fluctuations. As shown by accelerated ageing tests, the SOLAR-SHIELD lasts' longer than conventional roofs. It is cold applied, so it is safer going on, and it is environmentally cleaner, eliminating poisonous fumes



## SPECIAL FEATURES

- A high degree of puncture-resistance due to outstanding tensile strength
- Exceptional elongation
- Absolute bondability to a wide variety of substrates
- Stability under extreme temperature fluctuations
- Resistance to ageing & UV radiations
- Ease of application
- Space Age technology. The SOLAR - SHIELD is applied directly to certain clean, dry, in place substrates. These include concrete, metal, etc. It offers an exclusive roofing formula featuring hollow borosilicate beads. These beads are an integral component in a material similar to the insulative and reflective lightweight coatings used on the NASA space shuttle.  
This unique fluid applied borosilicate coating can be sprayed or rolled on to form a seamless monolithic seal over any size or shape roof. The SOLAR-SHIELD effectively dissipates and reflects solar radiation back into the atmosphere, resulting in an impressive reduction of solar loading.
- Variable permeability. The polymers used in the SOLAR-SHIELD expand when wet, offering unexcelled protection against damaging moisture penetration. The polymers shrink when dry, allowing any trapped moisture buildup to safely escape to the atmosphere.

- **Temperatures on the roof stay within 10 degrees of ambient air.** This lowers temperatures under the roof by as much as 45 degrees. Proven temperature reductions of up to 40% are not unusual with a single application of SOLAR-SHIELD. A SOLAR-SHIELD roof can pay for itself through energy savings by drastically reducing solar loading, a critical factor inn lowering air conditioning costs.
- **Effect of SLOAR-SHIELD On surface temperature**
- **Integral insulation:**



Borosilicates are a poor conductor of heat and is a far more effective insulator than the bulky materials generally used for this purpose. This makes the SOLAR-SHIELD unsurpassed in its ability to dissipate heat.

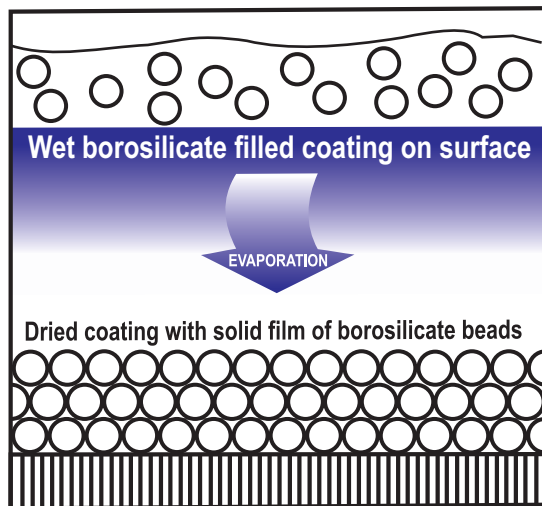
The high performance SOLAR-SHIELD coating also insulates against roof expansion and contraction. This drastically reduces the possibility of roof leaks caused by thermal shock and reduces maintenance costs accordingly.

- **Hollow borosilicate beads: The magic behind SOLAR-SHIELD.**  
The 8-10 microns spheres that make up the SOLAR-SHIELD are pure hollow borosilicates. Each closed cell-smaller in diameter than a human hair-acts as an efficient insulator.

# Space shuttle technology offers:

- Tough sealless elastomeric membrane
- Energy efficient ● Cost effective ● Long lasting

Once applied, water evaporates from the SOLAR-SHIELD aqueous emulsion, and these hollow beads approach each other, eventually touch, then fuse into a continuous membrane the seamless SOLAR-SHIELD. And since these spheres are over sixty two percent voids, the entire SOLAR-SHIELD Roof System is very light in weight causing no concern of dead load to existing roofs.



## UA USES, APPLICATIONS

- SOLAR-SHIELD can be used for virtually any roof application whether it is new construction or retrofit applications.
- SOLAR-SHIELD will bond to concrete, Unprimed or galvanized metal, old asphalt surfaces and bituminous roofing felt.
- Apply directly... no mechanical fasteners or heat needed.

## OB OTHER BENEFITS

- Labour Savings.
- Rapid set time.
- Lightweight.
- Superior flexibility at extremely low temperatures.
- Excellent elongation and recovery properties.

## TD TECHNICAL DATA

Tensile Strength, ASTMD 412	: 615 psi
Elongation at break, ASTMD 412	: 200%
Permeability ASTME 96	: 8.8 perm-in
Water absorption ASTMD471	: <1% by weight
Brittleness ASTMD746	: passed 90° bend Test at -37°C
Heat aging ASTMD 865	
Tensile strength	: 640psi
Elongation at break	: 210 %
Thermal Transmission At .127 mm thickness Of SOLAR-SHIELD ASTMC177	
K-value	: .0453 W/m.K
R-value	: 22 m.K/W

## SP SURFACE PREPARATION

- Concrete and cementitious substrates must be well compacted with a wood float type finish, be at least 28 days old and well dried.
- Wooden or metal panels to be firmly fixed in positions.
- TERRAZZO ROOF TILES: Clean and repair damaged joints. Remove all loose material.
- METAL ROOFS: Wire brush to remove moss, mildew and loose paint. Derust Corroded areas, then clean surfaces with a broom before priming.

## PA PRODUCT APPLICATION

- Stir well SOLAR-SHIELD before use.

- Apply a prime coat diluting SOLAR-SHIELD with 20% water.
- Primer must be completely dry.
- Apply SOLAR-SHIELD by soft brush, roller or spray gun.
- For spraying SOLAR-SHIELD may be slightly diluted with water. Too great a dilution may lead to sedimentation and blocking of spray gun.
- **For water proofing and heat insulation.**  
Apply two coats each at an approximate rate of 0.75 Itr. to 1 Itr. /M<sup>2</sup>, depending upon the site requirement.
- **For thermal insulation:-** Apply two coats each at the rate of .250 Itr. to .375 Itr. /M<sup>2</sup>.
- Where substantial movement is anticipated in the substructure, reinforce SOLAR-SHIELD by incorporating a non-woven polyester scrim as part of a "Sandwich" membrane system. Lay this mesh in the wet first coat before application of subsequent coats.
- All detailing to pipes, upstands, drains, projected line etc. should be reinforced in this way.



#### **HS HOW SOLAR-SHIELD WORKS**

It is a unique Formulation different from Other methods of insulation based on 3 Laws of Physics.

- The borosilicate beads in Solar-Shield behave like glass but even better. Glass can be heated by a torch until it melts and yet it can be safely held in hand at the same time.
- The SOLAR-SHIELD dissipates heat, within seconds blow lamp flame is removed from glass or borosilicate beads, they can be safely handed from one hand to another. That means that over 1200°C of heat have been dissipated in seconds.
- The hollow borosilicate spheres reflective quality affects the warming phenomenon called "Mean Radiant Temperature," where heat waves from a source such as direct sunlight cause a person to feel warmer even though the actual air temperature is no different between a shady and sunny location. It is the molecular friction within the skin which makes the body feel warmer. So the surrounding air can be cooler but the body will feel warmer in the presence of SOLAR-SHIELD, meaning thermostats can be set lower for the same degree of comfort.



#### **PG PACKAGING**

1 gallon, 4 gallon



#### **TA TECHNICAL ASSISTANCE**

Technical assistance can be attained by contacting our local distributor or direct to us.

*Reduce your energy bills!  
Insulate with SOLAR-SHIELD!*

SOLAR-SHIELD EXTERIOR COATINGS. This coating features the thermal and sound deadening properties of the SOLAR-SHIELD roof coatings, reformulated for vertical surface application.

SOLAR-SHIELD INTERIOR COATINGS. By using borosilicate beads, this coating will reflect room heat making the room temperature feel warmer than it actually is and at the same time prevent heat loss.



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