

Solar Shield®

Fluid Applied Borosilicate Roof and Wall 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.

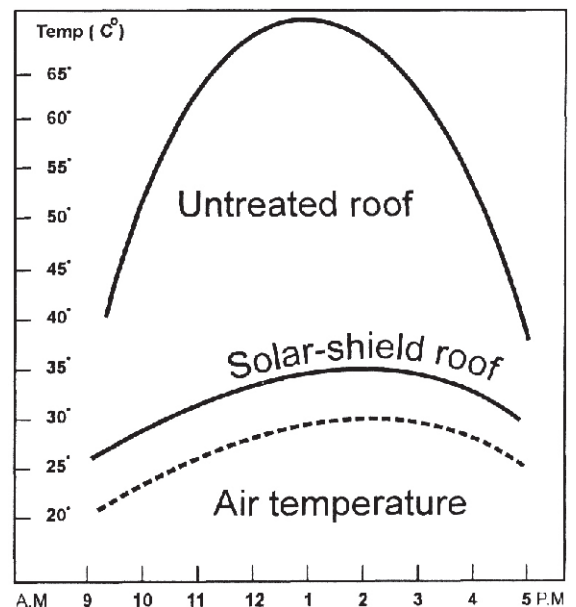
• **Temperatures on the roof stay within 10 degrees of ambient air.** This lowers temperatures under the roof by as much as 45 degrees. Proven temperature reductions of up to 40% are not unusual with a single application of SOLAR SHIELD. A SOLAR SHIELD roof can pay for itself through energy savings by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

Effect of SOLAR 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



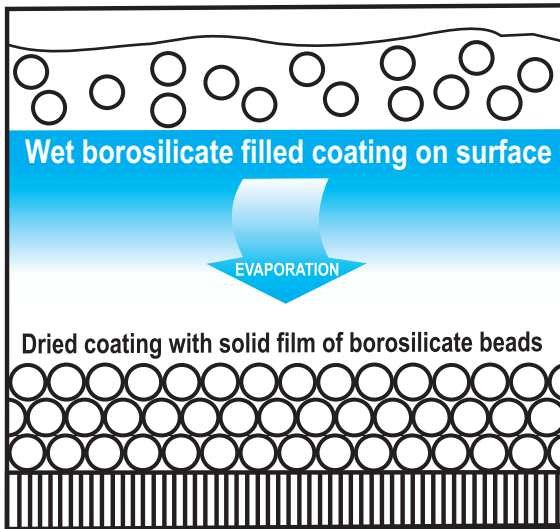
costs accordingly.

• 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.

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.

Thermal Insulation



Uses

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.

Other Benefits

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

Technical Data

Tensile Strength,	ASTMD 412	615 psi
Elongation at break,	ASTMD 41	200%
Permeability	ASTME 96	8.8 perm-in
Water absorption	ASTMD471	<1% by weight
Brittleness (-37°C)	ASTMD746	passed 90° bend
Heat aging	ASTMD 865	
Tensile strength		640psi
Elongation at break		210 %

Thermal Transmission

At .127 mm thickness

of SOLAR SHIELD ASTM C177

K-value

.0453 W/m.K

R- value

22m.K/W

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.

Product Application

- ! 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 ltr. to 1 ltr. /m², depending upon the site requirement.
- ! For thermal insulation:- Apply two coats each at the rate of .250 ltr. to .375 ltr. /m².
- ! 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.

Packaging

1 gallon, 4 gallon

Technical Assistance

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



**Delta Coatings
& Sealants**