



StrataShield Solar Reflective UV

Aliphatic, liquid applied waterproofing membrane

Product overview

StrataShield Solar Reflective UV is a single component, cold liquid applied waterproofing membrane based on an aliphatic polyurethane resin. When cured, the product forms a colour-stable, high performance, jointless solid elastomeric membrane.

StrataShield Solar Reflective UV is designed with a new chemical technology that consists of an indirect curing induced by the moisture in the air. This results in a very short curing time, rapid rainproof protection and an optimal surface appearance because CO₂ gas is not generated during the curing process.

Typical use

StrataShield Solar Reflective UV is normally applied as a second layer (exposed) over the first layer of an aromatic monocomponent polyurethane membrane. It can also be used as an aliphatic protective top coat for all types of polyurea, polyurea or polyurethane waterproofing membranes. In addition, the product has a high reflective capacity making it ideal for use within a cool roof system.

Features & benefits

- Compatible with numerous substrates including concrete, mortar, brick, fibre cement, tiles, bituminous membranes, PVC, EPDM, wood, steel, zinc, aluminium (subject to use of suitable primer)
- Seamless, elastic membrane
- Crack-bridging properties
- Excellent weather resistance
- Good adhesion properties
- Does not yellow if exposed to sunlight
- High reflective capacity (white colour)

Substrate requirements

In order to achieve a good penetration and bonding, the substrate must be clean and dry, free of dust, loose particles, oils, organic residues or laitance. The surface must be flat and levelled, and any cracks or fissures must be repaired prior to application. A pull-off load test must also be performed showing a minimum resistance of 1.5N/mm².

Recommended environmental conditions

The substrate temperature should be between 5°C and 40°. It should also be at least 3°C above the dew point in order to avoid condensation of moisture over the surface. Please note that very damp supports can lead to bubble formation under the membrane surface. The curing time of the resin in very low temperature conditions may be reduced by adding a suitable additive - please consult Strata Technical Services for further guidance.

Technical characteristics: pre-application

Properties	Unit / Description
Chemical description	Solvent borne single-component aliphatic polyurethane
Physical state	Liquid
Packaging	Metal containers: 5 / 10 / 25 kg
Non-volatile content	85%
Flash point (ASTM D 93)	45°C
Colour	White (other colours on request)
Density (23°C)	1.32 g/cm ³
Viscosity (5°)	30,000 mPa.s
Viscosity (10°)	20,000 mPa.s
Viscosity (20°)	12,500 mPa.s
Viscosity (30°)	7,000 mPa.s
VOC content	198 g/l
Pot life (100g, 23°C)	2 hours (skin formation)
Storage	Keep below 35°C, away from ignition sources and moisture
Use before	Up to 9 months from manufacture in sealed original container

Technical characteristics: final product

Properties	Unit / Description
Final state	Solid elastomeric membrane
Shore hardness (ISO 868)	80A
Density of film	1.45 g/cm ³
Max elongation	>250%
Max tensile stress	>6 MPa
UV resistance	Aliphatic PU (non yellowing)
Solar reflection index (SRI) value (ASTM E1980-01)	99.2-100.3 (white colour, 2-6 m/s)

Chemical resistance

Chemical	Result (0=worst, 5=best)
Water (24 hours, 25°C)	5
Hydrochloric acid (200g/L, 2 hours, 80°C)	4
Hydrochloric acid (200g/L, 24 hours, 25°C)	4
Sodium hydroxide (40g/L, 24 hours, 25°C)	5
Ammonia 3% (24 hours, 25°C)	5
Acetone (24 hours, 25°C)	1
Ethyle acetate (24 hours, 25°C)	3
Xylene (24 hours, 25°C)	5
Engine oil (24 hours, 25°C)	5
Brake fluid (24 hours, 25°C)	2

Application guidelines

Stir and homogenize the product before use. Some of the contents settle during storage and must be redispersed. Allow several minutes for air bubbles to be released. Stirring should be done at low speed. If needed, the product may be thinned with up to 10% of StrataShield PU Solvent, as a viscosity adjustment. Never use universal or unknown solvents (e.g. White spirit or alcohols).

StrataShield Solar Reflective UV may be applied by roller, brush or trowel. The typical system described comprises a first (base) layer of StrataShield Flex resin (1.5 kg/m²), reinforced with StrataShield GF Reinforcement Fleece, followed by a second (final) layer of StrataShield Solar Reflective UV, which is exposed (applied at approximately 0.7 kg/m²). To create a "cool-roof" system, the second layer (StrataShield Solar Reflective UV) should be in white colour. It is recommended that the two layers are applied in different colours.

Although not strictly necessary, it is strongly recommended that the entire contents of the container is used during application. However, if some product remains in the packaging, ensure that it is completely sealed after use.

Use a spiked roller after the application of the non-reinforced resin layer, to eliminate any bubbles and to help distribute the liquid resin across the entire surface.

Curing time

Curing time will be dependent on particular environmental conditions. The curing rate will increase with higher temperatures and higher levels of humidity. The table below gives a rough estimation of the curing time under various conditions for a 1.5 kg/m² coat.

Environmental conditions	Skin formation
20°C, 40% RH, 250 microns	1.25 hours
20°C, 40% RH, 500 microns	1.5 hours
20°C, 40% RH, 1,000 microns	2.5 hours
20°C, 75% RH, 250 microns	1 hour
20°C, 75% RH, 1,000 microns	1.5 hours

Return to service

At 20°C, 60% RH, return to service is after 24 to 48 hours. Final hardness is achieved after 10-15 days.

Cleaning and maintenance

StrataShield Solar Reflective UV can be cleaned from tools etc using StrataShield PU Solvent, along with acetone and alcohols. Once cured, the product cannot be dissolved.

Routine maintenance work must be carried out regularly on the treated roofs according to the intended use. This should include the removal of leaves, dirt moss and other vegetation, checking flashings, gratings etc are in place and generally ensuring that the drainage and stormwater systems are kept in good working order. If aesthetic appearance of the roof is an important issue, it is essential to regularly clean the surface with water (some mild detergent may be added), according to the use.

For stain removal, a surface treatment using StrataShield PU Solvent or isopropyl alcohol may be attempted. Strong acids are not recommended, and some solvents may damage the membrane. If this happens, the affected area must be cut out and repaired with a new application.

Health and safety

StrataShield Solar Reflective UV contains isocyanates and flammable solvents. Always follow the instructions provided in the material safety data sheet and take the precautions described there. As a general rule, suitable ventilation must be ensured during application and all ignition sources must be avoided. This product is intended for professional use only and should only be used in the way described on this datasheet.

Environmental considerations

Empty containers must be handled taking the same precautions as if they were full. Containers must be considered as hazardous waste, to be transferred to an authorized waste manager. If any residual product remains in the containers, do not mix it with other substances without checking for possible dangerous reactions.

Further information

The information contained in this datasheet, along with any advice provided (either written or verbal) through testing are based on our experience and do not constitute any product guarantee for the installer.

We recommend that all of the information provided is carefully studied before proceeding with application, and strongly advise that suitable tests are carried out onsite before application in order to determine the suitability and compatibility for the specific project.

The application, use and processing of our products are beyond our control, and therefore under the exclusive responsibility of the installer. As a result, the installer will be solely responsible for any damage derived from the partial or complete disregard of our guidance or the general mis-use of any of our materials.