PRODUCT DATA SHEET

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StrataShield Flex

Single component, cold-applied liquid PU waterproofing membrane

Product overview

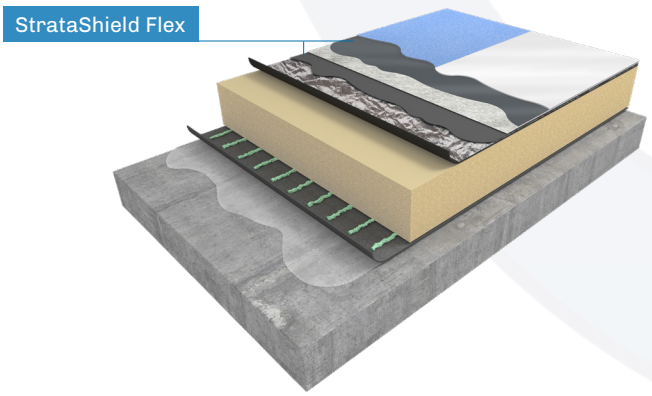
StrataShield Flex is a high performance polyurethane liquid waterproofing membrane which is cold applied to the substrate. It is a single component, low-sagging product which, once cured, provides an elastomeric, long lasting waterproofing solution. Furthermore, when used in conjunction with StrataShield Catalyst, the product develops chemical-cure properties and can be applied 'wet-on-wet' as part of the StrataShield ProFlex system.

Typical use

StrataShield Flex is ideal for use on a variety of flat and low-pitched roofs. The system incorporates a wide range of primers and accessories, ensuring its compatibility for use on a wide range of substrates, and making it suitable for both new build and refurbishment projects.

Features & benefits

- Cold-applied, flame free waterproofing solution
- Excellent bond to the substrate
- Chemically-cured (when combined with StrataShield Catalyst) for 'wet-on-wet' rapid roof protection
- Elastomeric solution which withstands building movements
- BBA Certified system - Certificate No: TBC
- Withstands 6m head of water - approved for use on zero falls roofs and blue roof systems



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 1.4 N/mm^2.

Recommended environmental conditions

The substrate temperature should be between 0°C and 40°. At higher temperatures, specific precautionary measures must be taken - please consult Strata Technical Services for further advice. Air temperature must be between 0°C and 30°C. Please note that high moisture conditions can lead to bubble formation under the membrane surface. In cold weather, or when curing time has to be shorter, accelerators can be used. Further information is available on request.

Technical characteristics: pre-application

Properties	Unit / Description
Chemical description	Solvent borne single-component aromatic polyurethane
Physical state	Liquid
Packaging	Metal cans: 6 / 25 kg
Non-volatile content	85%
Flash point (ASTM D 93)	45°C
Colour	–
Density (20°C)	1.3 g/cm^3
Viscosity (20°C, 100 Rpm)	10,000 mPa.s
Viscosity (20°C, 5 Rpm)	20,000 mPa.s
Viscosity (35°C, 100 Rpm)	5,000 mPa.s
Viscosity (35°C, 5 Rpm)	100,000 mPa.s
VOC content (g/L i %)	184 g/l
VOC class as per 2004/42/EC	Product subclass: i II Solvent based single-component performance products Limit from 01/01/2010: 500 g/l
Pot life (1 kg, 20°C, 50% hr)	4-6 hours
Storage	Keep at a temperature below 30°C, away from ignition sources and moisture
Use before	Can be used up to 12 months after manufacture in its sealed original container (NB: 9 months if white or black pigmented).

Technical characteristics: final product

Properties	Unit / Description	
Final state	Solid elastomeric membrane	
Colour	Depending on the chosen pigmentation	
Shore hardness (ISO 868)	65-70A	
Density of film	1.35 g/cm^3	
Elongation / Tensile stress (EN-ISO 527-3)	100%	2.0 MPa
	200%	2.8 MPa
	300%	3.0 MPa
	400%	3.4 MPa
Max elongation	421%	
Max tensile stress	3.4 MPa	
Adhesion (concrete)	2.0 MPa	
Adhesion (ceramics)	2.6 MPa	
Adhesion (polyurethane foam)	1.4 MPa	
UV resistance	Products includes anti UV additives. A colour change is expected due to its aromatic polyurethane composition. This discolouration does not affect its properties.	
Water vapour permeability (EN 1931, μ>1000)	20 g/m^2 day	
Tear strength (ISO 34-1, Method B)	14 N/mm	
Abrasion (Taber, 1000 cycles, CS-10, UNE 48250)	14.3 mg	
Thermal resistance	Stable up to 140ºC	
Fire resistance External fire exposure test (according to BS 476:Part 3, 2004): Category EXT.F.AC	B roof= t4	

Chemical resistance

Chemical	Result (0=worst, 5=best)
Water (24h, 25°C)	5
Salt water (24h, 90°C)	5
Hydrochloric acid solutions	
(200g/l, 24h, 25°C) (200g/l, 2h, 80°C) (3g/l, 24h, 25°C) (3g/l, 2h, 80°C)	4 4 5 4
Sodium hydroxide (40g/l, 24h, 25°C)	5
3% Ammonia (24h, 25°C)	5
Acetone (24h, 25°C)	1
Ethyl acetate (24h, 25°C)	3
Xylene (24h, 25°C)	5
Motor oil (24h, 25°C)	5
Brake fluid (24h, 25°C)	2

Application guidelines

If needed, the product may be thinned with up to 10% of an approved solvent, as a viscosity adjustment. Never use universal or unknown solvents (e.g. white spirit or alcohols). Mix preferably by hand without mechanical means.

Apply the product by roller, brush, spreader or airless equipment. It is useful to apply in 2 differently coloured coats, at 1 kg/m^2 each. Although not strictly necessary, it is strongly recommended that the entire contents of the container is used during application (subject to normal coverage rates). However, if some product remains in the packaging, ensure that it is completely sealed after use. Use a spiked roller immediately after spreading in order to reduce bubbling.

Please consult the StrataShield Catalyst data sheet for further guidance in utilising the StrataShield Flex resin within the StrataShield ProFlex 'wet-on-wet' system.

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 following table gives a rough estimation of the curing time under various conditions for a 1 mm coat.

Environmental conditions	Dry to touch	With added StrataShield Catalyst
5°C, 60% RH	>24 hours	7 hours
23°C, 40% RH	>10 hours	3 hours
35°C, 30% RH	>10 hours	1.5 hours

Return to service

At usual conditions the membrane achieves up to 90% of its final properties in 3 days. It can usually be walked on after 1 or 2 days. Final hardness is achieved within 10-15 days, after which full contact with water is allowed.

Cleaning and maintenance

StrataShield Flex can be cleaned with any solvent approved by the manufacturer, along with acetone and alcohols. Once hardened, 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. It may be necessary to reapply certain decorative layers if they become worn due to traffic, weather, corrosion, etc.

For stain removal, a surface treatment using an approved 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 Flex 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.

Trouble shooting

Problem	Observation / Solution
Product is not curing as expected	Has a suitable solvent been used? Some solvents are not suitable Apply a second coat using a recommended solvent as a dilutant
	Has the product been diluted too much? Too much solvent can slow the curing rate. Use a less diluted product
	Is the temperature suitable for application? At low temperatures curing can take longer. Below 15°C the use of accelerators is recommended
Surface of product appears to be bubbling	Is the substrate porous? If so, high temperatures can cause bubbling. Wait until temperature drops and apply a first coat, diluted at less than 500 g/m^2
	Is the substrate non-porous? If so, stirring too fast can cause bubbling. Wait for deaeration after stirring and use a spiked roller after application
Blistering	Has moisture go into the pigment? Ensure the correct primer is used. Cut out and repair any affected areas.
Poor hiding power	If on horizontal, too little product may have been used. If on vertical, this is normal for a self-levelling product. Use recommended minimum of 1 Kg/m^2 for each coat. Use thixotropy or thickening additives as recommended.
Grey colour turns to green	Is this important? Aromatic-type isocyantes turn to yellow/brown under sunlight. Use dark coloured or aliphatic top coat.
In case of rain	Rain droplets may cause craters if membrane has not developed a surface skin yet. Apply a second coat to correct these defects. Overall membrane properties are not affected by slight surface cratering.
High viscosity	This is normal and can rise during shelf life. Can be adjusted using an approved solvent.

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.

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