



StrataShield Rapide

Spray-applied polyurea waterproofing system

Product overview

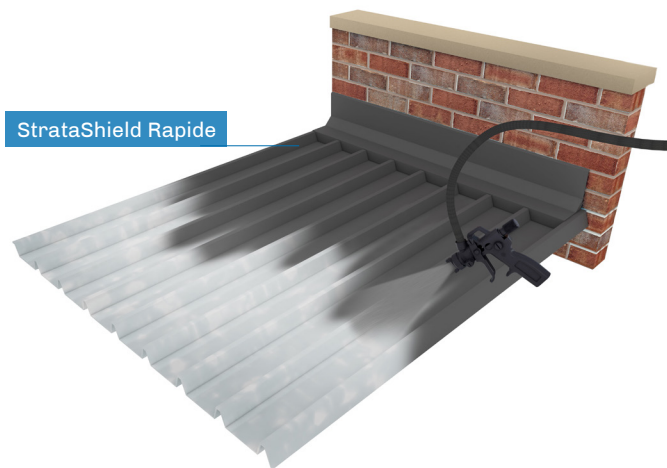
StrataShield Rapide is an elastomeric, 2-component, polyurea waterproofing system with excellent crack-bridging capability. It is applied by hot mechanical spraying equipment and is extremely fast curing. StrataShield Rapide can also be combined with different geotextiles where the substrate is particularly damp or wet.

Typical use

StrataShield Rapide is supplied in a dark grey UV stable finish (RAL 7011) and exhibits high elasticity and good crack-bridging properties. It can be used for a wide range of applications but is typically used as a fast-curing, high performance waterproofing system for flat roofs and podium decks.

Features & benefits

- Extremely fast curing
- Excellent crack-bridging properties
- Elastomeric membrane
- Hot spray-applied waterproofing solution
- BBA Certified system - Certificate No: 23/6727
- 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/mm².

Recommended environmental conditions

For all applications, both the substrate and air temperatures should be between 10°C and 40°, with relative humidity less than 85%. Higher humidities do not prevent correct polymerisation but may make adhesion increasingly difficult due to condensation on surfaces. In addition the moisture content of the substrate must be below 4% as higher levels of moisture may make adhesion increasingly difficult.

Technical characteristics: pre-application

Properties	Unit / Description	
	Component A	Component B
Chemical description	Polyamine	Aromatic isocyanate prepolymer
Physical state	Liquid	Liquid
Packaging	Metal container: 185 kg	Metal container: 211 kg
Non-volatile content	100%	100%
Flash point (ASTM D 93)	>100°C	>100°C
Colour	Dark yellow, but component A is pigmented by addition of pigment paste (Pigment Spray) delivered with each kit	
Density (20°C)	1.02 g/cm ³	1.12 g/cm ³
Viscosity (20°C)	600 mPa.s	2,000 mPa.s
Viscosity (30°C)	200 mPa.s	1,000 mPa.s
Viscosity (50°C)	60 mPa.s	400 mPa.s
A/B mixing ratio	A=100 / B=117 by weight A=100 / B=100 by volume	
Density/Viscosity	Fast polymerisation	
Curing performance	Gel time mixture A + B (20g) 4 secs at 20°C / 3 secs at 60°C Tack free time: 30 secs at 70°C	
Storage	Keep between 10°C and 30°C away from ignition sources and moisture	
Use before	Up to 12 months after manufacture date	

Substrate preparation

Concrete substrates must be prepared mechanically using high pressure sand or abrasion, in order to remove the surface and obtain an open pore. Substrates must be primed and levelled until a regular surface is obtained. Sharp irregularities should be eliminated using an abrading disc machine. Remove all dust and loose particles from the substrate by brushing or vacuum cleaning. If underlying moisture is suspected, it is recommended to apply 2 coats of an approved epoxy primer with the second coat second coat including quartz sand spread over its surface – please consult Strata Waterproofing for further guidance. Metal substrates should be cleaned and primed with StrataPrime Bonding Agent prior to application of the polyurea system.

Mixing and application guidelines

Both the Component A and Component B elements should be preconditioned between 25°C - 30°C and then individually stirred and homogenised using suitable mixing equipment before being loaded into the machine.

Add the required Pigment Spray to the Component A and stir before loading. Recirculate both components while heating up to the required application temperatures. StrataShield Rapide must then be applied using 2-component hot spraying equipment. The recommended temperatures are:

- Component A: 68°C
- Component B: 70°C
- Hose: 67°C

Pressure must be adjusted to 140 bar. Furthermore, during spraying, check the coating thickness to ensure that the curing evolution is correct. StrataShield Rapide is applied at 1.5-2.0 kg/m², obtaining a 1.5-2.0 mm thickness. Please contact Strata Waterproofing for further application details.

Curing time

StrataShield Rapide cures to touch a few minutes after application. The following table gives approximate hardness values as a reference only (1mm, polypropylene substrate, 25°C, 50% RH).

Time	Shore Hardness
5 minutes	28A
10 minutes	40A
20 minutes	55A
1 hour	70A
24 hours	80A
4 days	88A

Recoating

It is recommended to obtain the right thickness with a single application. Where an epoxy primer has been previously applied, StrataShield Rapide should only be sprayed once the primer has fully cured.

Return to service

Under most conditions (25°C, 50% RH), the membrane is rain-resistant after 10 minutes.

Technical characteristics: final product

Properties	Unit / Description	
Final state	Solid elastomeric membrane	
Colour	Dark Grey (RAL 7011)	
Gloss (60°C)	80-85%	
Shore hardness (ISO 868)	87A / 35D	
Elongation / Tensile stress (EN-ISO 527-3)	50%	9.8 MPa
	100%	11 MPa
	200%	13 MPa
	300%	15.5 MPa
Max elongation	324%	
Max tensile stress	16.2 MPa	
Adhesion (primed concrete)	4.0 MPa	
Adhesion (primed plywood)	1.6 MPa (cohesive wood failure)	
Adhesion (primed steel)	5.3 MPa	
Adhesion (high density PU foam 150 kg/m ³)	>1.5 MPa (foam failure)	
Adhesion (primed fibrous cement)	2.5 MPa (cement failure)	
UV resistance	StrataShield Rapide is an aromatic isocyanate based product. A colour change is to be expected under sunlight. This change does not affect its mechanical properties. An additional UV protection can be provided with a topcoat of StrataShield Balcony Resin.	
Water permeability (EN ISO 7783)	0.9 g/m ² * d - Class II as per EN1504-2	
Liquid water permeability (EN 1062-3, 2008)	0.002 kg/m ² h0.5	
Tear strength (ISO 34-1, Method B)	69 N/mm	
Abrasion (Taber, 1000 cycles, CS-10, 1 kg)	10 mg	
Thermal resistance & low temperature test (UNE_EN 495-2001)	Stable up to 200°C (6 hr test) Can be folded at -45°C without cracking or breaks.	
Fire resistance: External fire exposure test (according to EN 13501-5:2005+A1 :2010)	B roof= t1	
Indentation (UNE-EN ISO 12236:2007)	At 2mm thickness, StrataShield Rapide gives a resistance to indentation equivalent to a p4 level (approx 25 kg/cm ²) at TH4 (90°C) as directed by EOTA guide ETAG 005. The combined liner of StrataShield Rapide with selected geotextiles gives an static indentation resistance higher than 4000 kN	
Radon resistance (ISO 11665-13)	Radon diffusion coefficient: 2.6 x 10 ⁻¹¹ m ² /s	

Chemical resistance

Chemical (immersion test)	Result (0=worst, 5=best)
Water (15 days, 80°C)	5
Salt water (15 days, 80°C)	5
Xylene (7 days, 80°C)	2
Ethyl acetate (7 days, 80°C)	1
Isopropyl alcohol (7 days, 80°C)	0
Sodium hydroxide 50% (7 days, 80°C)	5
Hydrogen peroxide 33% (7 days, 80°C)	4
Phosphoric acid 10% (7 days, 80°C)	4
Sulphuric acid 54% (7 days, 80°C)	4
Hydrochloric acid (12M/37% - 7 days, 80°C)	0
(6M/18% - 7 days, 80°C)	1
(3M/9% - 7 days, 80°C)	4
(0.75M/2% - 7 days, 80°C)	5
3% Ammonia (7 days, 80°C)	5
Bleach (7 days, 80°C)	4
Diesel (16 days, 80°C)	5
Engine oil (7 days, 80°C)	5
Crude petroleum (21 days, 80°C)	2
Glycerine (7 days, 80°C)	5

Cleaning and maintenance

Maintenance work must be carried out regular basis on the treated roofs according to the intended use. This work includes the following tasks:

- Removal of leaves, grass, dirt, moss & other vegetation
- Ensuring that the storm water drainage system is in good working order
- Ensuring that gratings are in place to prevent any gutter obstructions
- Checking the condition of flashings, seams & retaining walls
- Checking for potential damage caused by improper use

If the 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). It may also be necessary to reapply decorative layers (e.g. StrataShield Balcony Resin) if they become worn out due to traffic, weather, corrosion, etc.

For stain removal, a surface treatment with a recommended solvent or isopropyl alcohol may be attempted – please consult Strata Waterproofing for further guidance. Strong acids are not suitable and some solvents may damage the membrane. If this happens, the affected area must be cut and repaired with a new application of StrataShield Rapide.

Tool cleaning

Solvents should not be used in order to keep equipment in good condition (spraying gun, gaskets etc). Please consult Strata Waterproofing for details of recommended cleaning fluids. Component B must be thoroughly removed and replaced with the recommended cleaning fluid.

Health and safety

Component B of StrataShield Rapide contains isocyanates and Component A contains corrosive polyamines that can cause burns. Always follow the instructions provided in the material safety data sheet and take the precautions described there. As a general rule, good ventilation, protective clothing and respiratory protection is needed (combined organic vapour filters + particles A2P).

This product is intended for professional use and industrial applications 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 authorised waste manager. If the containers still have some material left, do not mix with other products without knowledge of any potential dangerous reactions. Component A and B may be mixed on a 1/1 ratio in order to get an inert material, but never do this in volumes larger than 5 litres in order to prevent a dangerous heat evolution.

Trouble shooting

Problem	Observation / Solution
Product is not curing as expected or remains sticky	Is the Component A/B ratio correct? If the ratio is correct, a different application pressure may be required. Check and correct the pumping equipment
Bubbles or open holes in the membrane	Is the substrate porous? If so, a suitable primer may need to be used. Open holes are frequent with fast-curing polyurea. Apply the recommended primer before applying the Polyurea system
Not enough holding power	Is the substrate horizontal? If so, has the correct application rate been used? Use 1 kg/m² minimum. If no pigment is showing, ensure that the pigment is suitably mixed and homogenised in Component A.
Grey colour darkens upon exposure to the sun	Is the substrate exposed? The components of the system will react with UV light. Apply an aliphatic top coat afterwards such as StrataShield Balcony Resin.

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.