



DESCRIPTION

A single-component liquid waterproofing product which, upon polymerisation, forms a cold-applied polyurethane elastomeric membrane. Its slightly thixotropic behaviour allows it to be applied to vertical surfaces with minimal sagging. The membrane cures to form an elastic, continuous coating, in the form of a layer bonded to the substrate. This results in a waterproof film that ensures the substrate remains watertight whilst accommodating any movement in the substrate.

APPLICATION

It can be applied to various types of surfaces (concrete, mortar, brick, fibre cement, ceramic tiles, bituminous products, steel, zinc, aluminium):

- Balconies, terraces, ...
- Baths (showers), kitchens and difficult access spots
- Flooring with light pedestrian traffic
- Stairs, stadiums, stands, ...
- Canals and water tanks

PROPERTIES

Elastic and seamless coating, weather resistant and excellent bonding. No reinforcement usually required except at critical points.

CERTIFICATIONS

- ETA: European Technical Agreement Document N° 06/0263 –10-and-25-year CE marking
- Root resistance according to CEN/TS 14416:2014 (reinforced with fiberglass)



TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

Chemical description	Solvent borne single-component aromatic polyurethane		
Physical state	Liquid		
Packaging	Metal cans: 6 / 25 kg		
Non-volatile content	85%		
Flash point	45°C (ASTM D 93)		
Available colour	See available colours in the current price list		
Density	1.3 g/cm ³ (20°C)		
Viscosity	Temperature (°C)	Speed (rpm)	Viscosity (mPa.s)
	20	100	12000
	20	5	30000
	35	100	8000
	35	5	15000
VOC (g/L and %)	VOC content: 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	4 to 6 hours (1 kg, 20°C, 50% hr)		
Storage	Store in the original container at a temperature below 35°C, protected from moisture and sources of ignition. Under these conditions, the shelf life is 12 months from the date of manufacture. For products pigmented in black or white, the shelf life is 9 months from the date of manufacture.		

INFORMATION ON THE FINAL PRODUCT

Final state	Solid elastomeric membrane		
Colour	Depending on the chosen pigmentation		
Hardness (Shore)	65-70A (ISO 868)		
Density of film	1.35 g/cm³		
Mechanical properties	Maximum elongation: 421% Tensile stress: 3.4 MPa (EN-ISO 527-3)		
Chemical resistance	Permanent contact. (0=worst, 5=best)		
	Chemical	Test conditions	Result
	Water	24h, 25°C	5
	Salt water	24h, 90°C	5
	Hydrochloric acid solutions	200 g/l, 24h,25°C	4
		200 g/l, 2h,80°C	4
		3 g/l, 24h,25°C	5
		3 g/l, 24h,80°C	4
	Sodium hydroxide	40 g/l, 24h,25°C	5
	Ammonia (3%)	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
Adhesion	Surface	Force (MPa)	
	Concrete	2.0	
	Ceramics	2.6	
	Polyurethane Foam	1.4	
UV resistance	Products include anti UV additives. A colour change is expected due to its aromatic polyurethane composition. This discolouration does not affect its properties.		
Water vapour permeability	μ>1000 (EN 1931) 20 g/m² day		
Tear strength	14 N/mm (ISO 34-1, Method B)		
Abrasion	14.3 mg (Taber, 1000 cycles, CS-10, UNE 48250)		
Thermal resistance	Stable up to 140°C.		
External fire performance of roofs	B _{ROOF} (t1) for any roof slope and B _{ROOF} (t4) (EN-13501-5)		

SUPPORT REQUIREMENTS

To achieve a good penetration and bonding, support must be:

1. Flat and levelled
2. Compact and cohesive (pull off test must show a minimum resistance of 1.4 N/mm²)
3. Even and regular surface
4. Free from cracks and fissures. If any, they must be previously repaired
5. Clean and dry, free of dust, loose particles, oils, organic residues, or laitance

RECOMMENDED ENVIRONMENTAL CONDITIONS

The recommended substrate temperature for application is between 5°C and 40°C. If the temperature exceeds 45°C, additional measures shall be taken in accordance with the manufacturer's instructions. High humidity conditions may result in the formation of blisters beneath the surface. In cases of very low temperatures, or to accelerate curing, Pur Cat Additive or Superaccelerator PU may be used as an additive.

SUPPORT PREPARATION

All critical details must be treated preventively, including but not limited to:

- Half pipes
- Junctions with vertical surfaces



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Liquid polyurethane waterproofing membrane

- Parapets
- Skylights
- Expansion joints and cracks
- Drainage outlets

Refer to the application manual for further information.

MIXING AND HOMOGENISATION

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

APPLICATION

Apply by roller, brush, spreader, or airless equipment. It is useful to apply in 2 differently coloured coats, at 1 kg/m² each. Although not strictly necessary, it is strongly recommended to use entirely the product of the container. If there is some product left, ensure it is completely sealed after use. Use a spiked roller immediately after spreading to reduce bubbling.

CURING TIME

Curing time is dependent on the environmental conditions. Curing rate increases with temperature and humidity rises. The following table gives a rough estimation of the curing time under diverse conditions for a 1 mm coat.

Temperature (°C)	RH (%)	Dry to touch (h)
4	60	30-35
24	52	8-9
35	12	15-20
35	50	4

RETURN TO SERVICE

At usual conditions the membrane achieves up to 90% of its final properties in 3 days. Usually walking time is 1 or 2 days. Final hardness is not achieved until 10 or 15 days. It is preferable to wait this time before contact with water is allowed.

TOOL CLEANING

Liquid Impermax ST can be cleaned with Rayston PU Solvent, acetone and alcohols. Once hardened, it cannot be dissolved.

TOOL CLEANING, CLEANING AND MAINTENANCE

Impermax ST liquid on tools can be cleaned with Rayston PU Solvent, acetone or alcohol. Once cured, it cannot be dissolved. Surfaces treated with Impermax ST must be maintained depending on how they are used.

This work includes the following tasks:

- Leaf removal
- Grass, dirt, moss and other vegetation removal
- Keeping storm water system in good working order.
- Ensure gratings are in place, to prevent gutter obstructions.
- Check proper condition of several structures (flashing, seams, retaining walls...)
- Verification of possible damages due to improper use.

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 decorative layers (Impertrans, Colodur) if they are worn out due to traffic, weather, corrosion, etc. For stain removal, a surface treatment with Rayston solvent or isopropyl alcohol may be attempted. Strong acids are totally inadequate. Some solvents may damage the membrane. If this happens, the affected area has to be cut and repaired with a new Impermax ST application.

FAQ

Problem	Question	Cause	Solution
Does not cure	Suitable solvent?	Some thinning solvents are not suitable	Apply a second coat using only Rayston PU Solvent as a diluent
	Too diluted	An excess of solvent slows the curing rate	Use less diluted product
	Temperature?	Normal at low temperatures	Below 15°C use of Pur Cat Additive or Superaccelerator PU
Bubbles	Porous support?	High temperature	Wait until temperature drops and apply a first coat, diluted at less than 500 g/m ²
	Non-porous support?	Stirring too fast	Wait deaeration after stirring. Use spike roller after application
Blister		Moisture pigment	Before: Apply Humidity Primer After: Cut out the blister and repair the area
Poor hiding power	Horizontal?	Too little product	Follow minimum 1 kg/m ² rule each coat
	Vertical?	Normal in a self-levelling product	Use Thixotropy Additive
Gray turns to green	Important?	Aromatic – type isocyanates turn to yellow/brown under sunlight	Last coat in dark colour or provide an aliphatic topcoat
In case of rain			Water droplets will create craters if the 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.
What if permanent contact is possible?			Use Impermax Aqua 2k version instead
Can hot asphalt be poured on the membrane			Laboratory testing shows that pouring of hot (160°C) asphalt on a combination of Impermax+Geomax does not affect the membrane
High viscosity		in-can evolution	Normal. Viscosity rises along the shelf life. It can be adjusted using Rayston PU Solvent



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SAFETY

Impermax ST contains isocyanates and flammable solvents. Always follow the instructions provided in the material safety data sheet and take the precaution described there. As a rule, a suitable ventilation must be ensured, and all ignition sources must be avoided. This product is intended to be used only for the uses and in the way here described. This product is to be used only by industrial or professional users. It is not suitable for DIY-type uses.

ENVIRONMENTAL PRECAUTIONS

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 there is some residual product in the containers, do not mix it with other substances without checking for possible dangerous reactions.

OTHER INFORMATION

The information in this DATA SHEET, together with any advice provided in writing, verbally, or through testing, is based on our experience and does not constitute a product guarantee for the installer; it should be regarded as general information only. We recommend carefully reviewing all information before using or applying any of our products and strongly advise carrying out on-site tests to determine their suitability for each specific project. Our recommendations do not exempt installers from the need to study the correct application method for these systems before use, or from carrying out all necessary preliminary tests whenever doubts arise. The application, use, and processing of our products are beyond our control and are therefore the sole responsibility of the installer. Consequently, the installer is solely liable for any damage resulting from partial or total failure to follow our instructions or, in general, from improper use or application of these materials.

This data sheet supersedes previous versions.