



Liquid polyurethane waterproofing membrane

DESCRIPTION

One component liquid waterproofing composition, after polymerization gives an elastomeric, cold-applied polyurethane membrane. The membrane cures in a continuous and elastic form, as a totally adhered layer. This waterproofing layer guarantees total water tightness and withstands building movements.

APPLICATION

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

PROPERTIES

A continuous, elastic, weather-resistant membrane with excellent adhesion. It does not require a mesh or felt (geotextile) reinforcement, except at specific points (edges, corners, etc.).

CERTIFICATIONS

- ETA: European Technical Assessment document N° 06/0263 – CE marking: 10 and 25 years
- Roof fire resistance N° 08/32309237 and WF381582 (Notified body 0833)
- Resistance to root perforation. Without reinforcement, N° 07/32305556. Reinforced with Geomax, N° 07/32305557. Reinforced with Rayton Fiber 150, N° 2024GT0188
- Abrasion Taber N° 10/101.729-1626
- Alpes Contrôles: Cahier de Clauses Techniques CCT
- BBA: British Board of Agreement 11/4836
- IETcc report 19.221-II (2007) on thermal resistance



TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

Chemical description	Solvent borne single-component aromatic polyurethane	
Physical state	Liquid	
Packaging	Metal container: 6 / 25 kg	
Non-volatile content	76-85%	
Flash point	45°C (ASTM D 93)	
Available colours	Available colours shown in the current price list	
Density	1.3 g/cm ³ (20°C)	
Viscosity	Temperature (°C)	Viscosity (mPa.s)
	10	20000-30000
	20	6000-15000
	30	1000-10000
VOC (g/L and %) VOC class	VOC content: 184 g/l Product subclass: i II Solvent based single-component performance products. Limit from 01/01/2010: 500 g/l Phase II from 01/01/2010: 500 g/l	
Pot life	4 - 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 appearance	Solid elastomeric membrane		
Colour	Depending on chosen pigmentation		
Hardness (Shore)	65-70 A (ISO 868)		
Density film	1.3 g/cm³		
Mechanical properties	Maximum elongation: 450-600%		
	Tensile strength: 2.5-4.3 MPa (EN-ISO 527-3)		
Tear strength	14 N/mm (ISO 34-1, Method B)		
Water vapour permeability	μ>1000 (EN 1931)		
Abrasion	14,3 mg (Taber, 1000 cycles, CS-10, UNE 48250)		
Adhesion	Surface	Bond strength (MPa)	
	Concrete	2.0	
	Ceramics	2.6	
	Polyurethane foam	1.4	
Heavy metal content (mg/kg)	Antimony (Sb): <1		
	Arsenic (As): <1		
	Lead (Pb): <1		
	Cadmium (Cd): <0.1		
	Chromium (Cr): <1		
	Nickel (Ni): <1		
	Mercury (Hg): <0.1		
	Selenium (Se): <1		
Chemical resistance	Cobalt (Co): 1.1		
	Permanent contact (0=worst, 5=best)		
	Chemical	Conditions	Result
	Water	24 h, 25°C	5
	Salt water	24 h, 90°C	5
	Hydrochloric acid solutions	200 g/l, 24 h, 25°C	4
		200 g/l, 2 h, 80°C	4
		3 g/l, 24 h, 25°C	5
		3 g/l, 24 h, 80°C	4
	Sodium hydroxide	40g/l, 24 h, 25°C	5
	Ammonia 3%	24 h, 25°C	5
	Acetone	24 h, 25°C	1
	Ethyl acetate	24 h, 25°C	3
	Xylene	24 h, 25°C	5
	Motor oil	24 h, 25°C	5
	Brake fluid	24 h, 25°C	2
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.		
Thermal resistance	Stable up to 140°C. Resists heat impact (160°C) of poured asphalt when combined with Geomax fabric.		
External fire performance of roofs	B _{ROOF} (t1) for any roof slope and B _{ROOF} (t4) (EN-13501-5)		
Reaction to fire	Class E (EN 13501-1)		

SUPPORT REQUIREMENTS

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

- Flat and levelled (Impermax is self-levelling).
- Cohesive (pull off test must have a minimum resistance of 1,5 N/mm²).
- Even and regular surface.
- Free from cracks and fissures. If any, they must be previously repaired.
- Clean and dry, free of dust, loose particles, oils, organic residues or laitance.



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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
- 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)	Relative humidity (%)	Dry to touch (h)
4	60	30-35
24	52	8-9
43	12	12-14
43	50	3-4

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

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



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	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 to 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

CLEANING AND MAINTENANCE

A maintenance work must be carried out regularly on the treated roofs according to the intended use.

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, in order to prevent gutter obstructions
- Check proper condition of several structures (flashing, seams, retaining walls...)
- Verification of possible damages due to improper use

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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 PU 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 application.

SAFETY

Impermax 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, 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 contained in this DATA SHEET, together with any advice provided by us, whether in writing, verbally or through testing, is given in good faith based on our experience and on the results obtained from tests carried out by independent laboratories. However, such information shall not constitute any guarantee for the applicator, who should regard it solely as guidance and for information purposes only. We recommend that this information be carefully evaluated before the use and application of any of these products. It is particularly advisable to carry out on-site trials to determine the suitability of the treatment for the intended purpose and under the specific conditions applicable in each case. Our recommendations do not exempt the applicator from the obligation to thoroughly understand the correct method of application of these systems before use, nor from carrying out any prior tests deemed necessary where there is any doubt as to their suitability for a particular project, installation or repair, taking into account the specific circumstances in which the product is to be used. Application, use and processing of our products are beyond our control and are therefore the sole responsibility of the installer. Consequently, the applicator shall be solely and exclusively liable for any loss or damage arising from total or partial failure to comply with the User and Installation Manual and, in general, from the improper use or application of these products.

This Technical Data Sheet supersedes all previous versions.