



Liquid applied waterproofing membrane, based on an aliphatic polyurethane resin

DESCRIPTION

Single-component, cold liquid applied waterproofing membrane based on an aliphatic polyurethane resin. When cured a colour-stable (not yellowing), high performant, jointless solid elastomeric membrane is obtained.

Impermax A resin is designed with a new chemical technology that consists of an indirect curing induced by the moisture in the air. That permits a very short curing time, quick rainproof behaviour and an optimal surface appearance because CO₂ gas is not generated during the curing process.



APPLICATIONS

The waterproofing system can be applied over different types of surfaces (concrete, mortar, brick, fibre cement, tiles, bituminous membranes, PVC, EPDM, wood, steel, zinc, aluminium ...), always using a suitable primer.

Typical projects:

- Balconies, terraces and roofs.
- Wet rooms (baths, showers and kitchens).
- Pathways with pedestrian traffic.
- Stands, grandstands, stairs.

Impermax A will normally be applied as a second layer (exposed) over a first layer of an aromatic monocomponent polyurethane membrane. That system would save a step in the waterproofing process, since it would not be necessary to apply a low-thickness aliphatic protective topcoat over the second layer of membrane.

Impermax A can also be used as an aliphatic protective topcoat for all types of polyurea, polyurea or polyurethane waterproofing membranes. In addition, in white, it has a high reflective capacity of the energy coming from the sun, "cold roof" system.

PROPERTIES

Seamless, elastic (able to bridge-over the fissures of the support), weather resistant membrane. Good adhesion properties. Does not yellow if exposed to sunlight.



CERTIFICATION

- ETA (European Technical Assessment) number 06/0263. CE mark.
- SRI Index (ASTM E1980-01) Tecnalia RI Report 12-02655-1



TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

Chemical description	Single component aliphatic polyurethane, solvent borne	
Physical state	Liquid	
Packaging	Metal container: 5 / 10 / 25 kg	
Non-volatile content	85%	
Flash point	45°C (ASTM D 93)	
Colour	White, Grey 7001, Grey 7040	
Density	1.32 g/cm ³ (20°C)	
Viscosity	Temperature (°C)	Viscosity (mPa.s)
	5	30000
	10	20000
	20	12500
	25	9500
	30	7000
VOC (g/L and %)	VOC content: 198 g/l	
VOC class as per 2004/42/EC	Product subclass: i II Solvent based single component performance products.	
	Phase II from 01/01/2010: 500 g/l	
Pot life	2 horas (skin formation)	
Storage	Keep below 35°C, away from ignition sources and moisture	
Use before	6 months after manufacturing date	

INFORMATION ON THE FINAL PRODUCT

Final state	Solid elastomeric membrane	
Colour	According to pigmentation	
Film density	1.45 g/cm ³	
Hardness (Shore)	80A (ISO 868)	
Mechanical properties	Maximum elongation: >250%	
	Tensile strength: >6 MPa (EN-ISO 527-3)	
Tear strength	18 N/mm (ISO 34-1 method B)	
Thermal resistance	Up to 140°C	
Adhesion	Surface	Adhesion (MPa)
	Concrete (Epoxy primer)	>2.5
	Concrete (Epoxy primer + Impermax or Impermax QC)	>1.8
	Polyurethane foam	>1.4
	Steel (PU Primer)	1.2
	43,5 mg (Taber, 1000 cycles, CS-17)	
Abrasion resistance		
Solar reflectance	White colour: 81.1% (ASTM E-903-96)	
Thermal emittance	White colour: 0.83 (ASTM C1371-04a)	
Solar reflectance index, SRI	White colour: 100 (ASTM E1980-01)	



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(Convective coefficient, medium wind)

CHEMICAL RESISTANCE

Continuous contact (0=worst, 5=best)

Chemical	Conditions	Result
Distilled water	24h, 25°C	5
Salt water	24h, 90°C	5
Hydrochloric acid	200 g/l, 24h, 25°C	4
	200 g/l, 2h, 80°C	4
Sodium hydroxide	40 g/l, 24h, 25°C	5
Ammonia	24h, 25°C	5
Acetone	24h, 25°C	1
Ethyl acetate	24h, 25°C	3
Xylene	24h, 25°C	5
Engine oil	24h, 25°C	5
Break fluid	24h, 25°C	2

SUPPORT REQUIREMENTS

In order to achieve a good adhesion, support must be:

1. Flat and levelled.
2. Compact and cohesive (pull off test must show a minimum resistance of 1,5 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

Support temperature should be between 5°C and 40°. Anyhow, temperature of support must be 3°C above the dew point, to avoid condensation of moisture over the surface.

Very damp supports can lead to bubble formation under the membrane surface.

Curing time of the resin (very low temperature conditions) may be reduced by adding the Pur Cat Additive.

PREPARATION

Treatment of critical spots is necessary, much in the same way as in Impermax.

MIXING OR HOMOGENIZATION

Stir and homogenize 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 solvent, as a viscosity adjustment. Never use universal or unknown solvents (e.g White spirit or alcohols)

APPLICATION GUIDELINES

Impermax A may be applied by roller, brush or trowel. If needed to be applied with an airless, please ask for advice to the technical services of Krypton Chemical, S.L.

The system described in the ETA certificate comprises a first base layer (over a primed and well-prepared support) of Impermax / Impermax ST / Impermax QC (1.5 kg/m²), reinforced with fiberglass (Rayston Fiber 150) and a second final layer of Impermax A, which is exposed (about of 0.7 kg/m²).

To build up a "cool-roof" system, the second layer (Impermax A) should be in white colour.

It is recommended to apply the two layers in different colours.

Although not strictly necessary, it is strongly recommended to use entirely the resin in the container. If there is some product left, ensure it is completely sealed after its use.

Use a spiked roller after the application of the layer of the non-reinforced resin, to crash any bubble and to help distribute the liquid resin all over the surface.

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 1,5 kg/m² coat.

Temperature (°C)	Relative humidity (%)	Thickness (microns)	Skin formation (h)
20	40	250	1.25
20	40	500	1.5
20	40	1000	2.5
20	75	250	1
20	75	1000	1.5

RETURN TO SERVICE

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

TOOL CLEANING

Impermax A can be cleaned with Rayston Solvent, acetone and alcohols. Once cured, it cannot be dissolved.

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.

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 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 must be cut and repaired with a new Impermax A application.

SAFETY

Impermax A 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



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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 INFORMATIONS

The information contained in this DATA SHEET, as well as our advice, both written as verbal or provided through testing, are based on our experience, and they do not constitute any product guarantee for the installer, who must consider them as simple information.

We recommend to study deeply all information provided before proceeding to the use or application of any of our products, and strongly advise to conduct tests "on-site" in order to determine their convenience for a specific project.

Our recommendations do not exempt of the obligation of installers to deeply study the right application method for these systems before use, as well as to conduct as many preliminary tests as possible should any doubt arise. The application, use and processing of our products are beyond our control, and therefore under the exclusive responsibility of the installer. In consequence, the installer will be the only responsible of any damage derived from the partial or total in-observation of our indications, and in general, of the inappropriate use or application of these materials.

This Data Sheet supersedes previous versions.