IMPERMAX COLD POLYUREA

Cold-applied polyurea waterproofing membrane

DESCRIPTION

Two component easily cold-applied polyurea thick waterproofing coating.

APPLICATION

- Waterproofing of concrete structures, roof, terraces, etc.
- Waterproofing of water tanks.
- Waterproofing of secondary containments.
- See Manual of Waterproofing Systems of Krypton Chemical for further details.

PROPERTIES

- Crack bridging ability
- Highly elastic membrane
- Fast curing
- Thick layer (up to 2kg/m^2 applied in a single layer)

CERTIFICATIONS

Certificate ETE/ETA number. 17/ 0509 for 10 and 25 years as per ETAG 005

BBA: British Board of Agreement: 11/4836

External fire performance: $B_{roof}(t4)$

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B
Chemical description	Polyisocyanate prepolymer	Polyamine mixture
Physical state	Liquid	Liquid
Packaging	Metal container 25 kg	Metal container 1,5 kg
Non-volatile content (%)	Approx 85%	43%
Flash point	45ºC	26ºC
Colour	Red	Clear yellow
Density	1.3 g/cm3 (20ºC)	0.99 g/cm3 (20ºC)
Viscosity approximate Brookfield	Temp (ºC) / Viscosity (mPa.s): 10 / 20000-30000; 20 / 6000-10000; 30 / 1000-1500	5 mPa.s (20ºC)
VOC voc class as per 2004/42/EC	184 g/L (15%)	572 g/L (57%)
A/B mixing ratio	A=100, B=6 by weight A=100, B=8 by volume	
Colour	Red. Other colours available on request	

Pot life	Temperature (ºC)	Pot life(min)
	5	180
	23	60
	35	30

Storage	Keep between 10º y 30ºC (recommended).
Use before	12 months after manufacture months (Note: 9 months if component A is white or black pigmented), provided it is kept in its sealed container

INFORMATION ON THE FINAL PRODUCT

Final state	Solid elastomeric membrane
Colour	Standard colour is Red. Other colours available under request. Note: Colour changes very fast under sunlight (yellowing), For example grey turns to green. This change does not impair the membrane mechanical properties
Hardness (shore)	75 A (ISO 868)
Mechanical properties	Elongation (EN-ISO 527-3): 600% Tensile strength(EN-ISO 527-3): 5.7 MPa Tear strength (ISO 34-1 method B): 34 N/mm
Water vapour permeability	µ=2000, 14 g/m2 day, (EN 1931)
Chemical resistance	Permanent contact. (0=worst, 5=best)

Chemical	Conditions	Result
Water	15d, 80ºC	5
Brine	5d, 80ºC	5
Diesel	16d, 80ºC	5
Xylene	7d, 80ºC	1
Ethyl acetate	7d, 80ºC	0
Isopropyl alcohol	7d, 80ºC	0
Sodium hydroxide (40g/L)	7d, 80ºC	5
Hydrogen peroxide (33%)	7d, 25ºC	4
Ammonia (3%)	7d, 80ºC	5
Sulphuric acid (10%)	7d, 80ºC	4
Hydrochloric acid conc.	7d, 80ºC	0
Bleach	7d, 80ºC	4

Adhesion strength

Surface	Adhesion (MPa)
Concrete	2.0
Ceramics	2.6
PU foam	1.4

UV resistance	Good resistance to UV-induced degradation. Aromatic polyureas undergo change of colour under sunlight. This change does not affect its mechanical properties. Additional UV protection can be achieved by application of an Impertrans or Colodur topcoat altogether with a Colour Paste.
Thermal resistance	Degradation begins at 180ºC
Fire resistance	B roof= t1 (external fire exposure test)

SUPPORT REQUIREMENTS

In order 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

Support temperature must be between 10ºC and 40ºC. At higher temperatures, additional measures to be advised by the manufacturer must be taken. Support moisture must be less than 4%

RECOMMENDED ENVIRONMENTAL CONDITIONS

Air temperature should be between 10ºc and 40ºC. Relative air humidity should be less than 85%.

SUPPORT 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 are eliminated using an abrading disc machine.
Eliminate all dust and loose particles from the substrate by brushing or vacuum cleaning.

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Primers over concrete recommended are EP Aquacoat, Humidity Primer or Porosity Sealer.

MIXING

Stir and homogenise separately both components using suitable mixing equipment.
Pour gently Component B into the Component A and mix with a low-speed stirring before use. Wait some minutes before application and use the mixture normally.
Addition of Component B has an effect on the viscosity and solids content of Component A. Please take this into account when calculating the amount and thickness of product if a final coat of 1,5-2 mm minimum is to be obtained.

APPLICATION GUIDELINES

Apply with roller or spreader. Use a spiked roller afterwards to prevent bubble formation. Airless spraying is possible, in this case, apply in three (at least) coats 0.5-0.7 kg/m2 each to prevent defects due to solvent swelling.

CURING TIME

Curing time for mixtures 1 mm thick, approximate:

Conditions	Dry to touch (h)
35ºC, 30% hr	1.5 h
23ºC, 40% hr	3 h
5ºC, 60% hr	7 h

RE-APPLICATION

Usually, needed thickness can be obtained in one single coat. If necessary, a second coat can be applied immediately afterwards. In any case, do not wait more than 2 hours for a second coat. If spraying over a previously applied epoxy primer, ensure the primer is completely cures (*ca* 8 hours)

QUESTION AND ANSWERS

Question	Answer
What if a different ratio is used?	Less Component B than needed makes curing time longer, but no damage is expected.
	Using more components B than needed does not reduces drying time, and will strongly damage final membrane properties.
What happens in case of rain?	Early rain-resistant, skin development takes quickly. Use of the Impermax Cold Polyurea can, therefore, be highly recommended in case of risk of rain.

TOOL CLEANING

Use Rayston solvent for general cleaning.

SAFETY

Component A contains isocyanates. Component B contains organic amines. Always follow the safety instructions in the Material Safety Data Sheet. As a general rule, a good ventilation and/or respiratory protection is needed (combined organic vapour filtres+particles) along with protective clothing. This product must be used only for the applications here described. This product is intended for industrial and professional use. It is not suitable for DIY-type applications.

ENVIRONMENTAL PRECAUTIONS

Empty containers must be handled with the same precautions as if they were full. Treat empty containers as hazardous waste, and transfer them to an authorized waste manager. If the containers still have some material left, do not mix with other product with no knowledge of potential dangerous reactions.

OTHER INFORMATION

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.