IMPERMAX COLD POLYUREA

Cold-applied self-levelling polyurea membrane for waterproofing applications

DESCRIPTION

Two component self-levelling polyurea, solvent-borne, cold-applied and quick curing.

APPLICATION

- Waterproofing of flat roofs (including “blue roofs”), balconies and terraces.
- Waterproofing of outdoors concrete structures.
- Quick and easy repair of hot spray-applied polyurea membranes.

PROPERTIES

- Excellent crack bridging ability.
- Highly flexible and elastic membrane.
- Fast curing, even at low temperatures.
- Thick layer (up to 2kg/m^2 applied in a single layer over a horizontal support).

CERTIFICATIONS

- ETA Certificate: European Technical Assessment Nº. 17/0509 – CE Marking valid for 10 and 25 years.
- BBA: British Board of Agreement: 11/4836
- External fire performance: $B_{roof}(t4)$
- Root resistance according to CEN/TS 14416:2014 (reinforced with fiberglass)

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	Rust red, tile red, dark grey	Clear yellow
Density	1.3 g/cm^3 (20ºC)	0.99 g/cm^3 (20ºC)
Viscosity	10ºC: 20000-30000 mPa.s 20ºC: 6000-10000 mPa.s 30ºC: 1000-1500 mPa.s	20ºC: 5 mPa.s
VOC class as per 2004/42/EC	217 g/L (17%) A, j	
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): 5 / 23 / 35	Pot life (min): 180 / 60 / 30
Storage	Keep between 10º and 30ºC (recommended)	
Use before	12 months after manufacture months (Note: 9 months if component A is black or white pigmented)	

INFORMATION ON THE FINAL PRODUCT	
Final state	Solid elastomeric membrane
Colour	Standard colours: rust red, tile red, dark grey (like RAL 7011). Other colours under request. It experiences a very fast colour change under sunlight. A light grey membrane will turn greenish grey in a short time. This colour change does not affect its mechanical properties.
Hardness (Shore)	75A (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 resistance factor	μ = 1485 (EN-1931: 2001)
Crack bridging properties (static)	Class A5, -10ºC (EN-1062-7, Method A)
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 pigmented topcoat.
Thermal resistance	Degradation begins at 180ºC
External fire behavior	$B_{roof}(t4)$ over combustible, non-combustible support and warm roof system (EN-13501-5))
Reaction to fire	Class E (EN 13501-1)

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/mm^2).
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%.

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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, 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.

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 influences 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/m^2 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 h
23ºC, 40% hr	1.5 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. Longer times can lead to adhesion issues. Same remark applies to any PU topcoat applied afterwards. 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 potentially 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.

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