POLYUREA H SL

Polyurea system for flooring applications and crack repair

DESCRIPTION

Polyurea H SL is a two-component, slow-curing polyurea resin designed for the rapid application of seamless flooring membranes, with or without aggregate broadcasting, as well as for filling expansion joints, cracks, and voids.

APPLICATIONS

- Industrial and decorative flooring.
- Filling and sealing of expansion joints and construction joints.
- Repair and sealing of cracks and voids.

TECHNICAL DATA

PRODUCT INFORMATION BEFORE APPLICATION		
	Component A	**Component B**
Chemical description	Polyol/Polyamide	Aromatic isocyanate prepolymer
Physical state	Liquid	Liquid
Packaging	Metal container 182 kg + pigment (4 kg) 18.2 kg + pigment (0.4 kg)	Metal container 214 kg 21.4 kg
Non-volatile content	Approx. 100%	100%
Flash point	>100ºC	>100ºC
Colour	Dark yellow	Dark yellow
Density	1.03 g/cm^3 20ºC 1.01 g/cm^3 60ºC	1.15 g/cm^3 20ºC 1.14 g/cm^3 60ºC
Viscosity	2200 mPa.s 20ºC 100 mPa.s 60ºC	595 mPa.s 20ºC 100 mPa.s 80ºC
A/B mixing ratio	A=1, B=1.12 by weight A=1, B=1 by volume	
Mixture properties	Fast polymerization. See Pot life data	
Colour	Dark yellow, but component A is pigmented by addition of pigment paste (Pigment Spray) for Polyurea H SL	
Pot life	Gel time mixture A+B (20 g) 1.5 min at 25ºC 1 min at 60ºC	
Storage and shelf	Keep between 10º y 30ºC. Product is hygroscopic: protect from moisture. Component B may become hazy upon storage at low temperatures. Reheat mildly before use. Shelf life: months from the date of manufacture when kept in its original unopened container	

FINAL PRODUCT INFORMATION	
Final state	Solid hard membrane
Colour	Available colours: light grey, dark grey, rust red, blue (may darken during storage and exposure to sunlight). Other colours under request.
Hardness (Shore)	95A/55D (ISO 868)
Tear resistance	78 N/mm (ISO 34-1 Method B)
Mechanical properties	Elongation at break: 160% Tensile strength: 13 MPa (EN ISO 527-3)
UV resistance	Good resistance to UV-induced degradation. Aromatic polyureas undergo change of colour under sunlight. Additional UV protection can be achieved by application of an aliphatic fast curing topcoat (Kryptanate)
Chemical resistance	Surface contact 24h, room temperature (5=best, 0=worst):

	Product	Results
	Water	5
	Isopropyl alcohol	3
	Xylene	0
	Sodium hydroxide 20%	5
	Sodium hydroxide 33%	5
	Sodium hydroxide 50%	5
	Glycerine (50% in water)	5
	Sulphuric acid 10%	5
	Ammonia 3%	4

	Substrate	Adhesion strength (MPa)
Adhesion strength	Concrete (Rayston Epoxy 100)	5.6
	Steel (PU Primer)	3.6
Abrasion resistance	40 mg Taber, CS10, 1kg-1000 cycles	

SUPPORT REQUIREMENTS

To achieve a good penetration and bonding, substrate 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.

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 shot blasting, scarifying, or diamond grinding equipment, to grind the surface and obtain an open pore. Substrates must be primed and repaired 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 vacuum cleaning.

MIXING AND HOMOGENISATION

Add the required pigment to the A-component and stir before loading at low speed for a few minutes. Excess stirring may lead to undesirable moisture pick up. Recirculate both components while heating up to the required application temperatures. Best mixing equipment should have extensible blades with overall width equivalent to 1/3 of drum diameter.

APPLICATION GUIDELINES

Polyurea H SL must be applied using a 2-component hot spraying equipment. Recommended temperatures are:

- Component A: 60ºC
- Component B: 60ºC
- Hose: 59ºC

Pressure should be 140-150bar. During application, check layer thickness and curing speed. Spray Polyurea H SL at 2-3 kg/m^2 as a rule.

Aggregate Broadcasting:
To broadcast aggregate onto the membrane and achieve a slip-resistant finish, the aggregate must be applied after the initial gel time has elapsed; otherwise, it will settle improperly. Once this stage has been reached, there is an application window of approximately 3 to 4 minutes for broadcasting the aggregate (at 15°C).

Contact Krypton Chemical for more detailed technical information.

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CURING TIME

Polyurea H SL cures to touch after a few minutes after application, with quartz sand spreaded. Walking is possible after 2-4 hours.

RE-APPLICATION

Usually, needed thickness can be obtained in one single coat.

RETURN TO SERVICE

Under most usual conditions (25ºC, 50% rh), the membrane with sand broadcast, resists light pedestrian traffic after 2 hours.

TOOL CLEANING

Solvent use for machine component cleaning is discouraged. A cleaning plasticizer fluid is suitable. Component B must be completely removed from all air-exposed parts and replaced with cleaning fluid.

PRESERVATION AND MAINTENANCE

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 fresh product.

FAQ

Problem	Question	Cause	Solution
Product does not cure	AB ratio is correct?	Pressure differences	Check and correct machine operation
Bubbles or open pores	Porous support?	No primer	Apply suitable primer before Polyurea H SL
No hiding power	Horizontal?	Too little product	Apply 1 kg/m^2
		Too little pigment	Ensure full A + pigment homogenisation
Colour change	Exposed to sunlight?	UV-reaction	Use a last coat in dark grey or red
	Can it be applied without pigmentation?		Not recommended. Polyurea H SL is always delivered with the pigment of choice. Use of pigment helps to obtain a uniform appearance.

SAFETY

Component B contains isocyanates. Always follow the safety instructions in the Material Safety Data Sheet. As a rule, a good ventilation and/or respiratory protection is needed (combined organic vapor filters + 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.

ENVIRONMENT

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 contains still have some material left, do not mix with other product with no knowledge of potentially dangerous reactions. Component A and B may be mixed on a 1/1 ratio to get an inert material, but never do it in volumes larger than 5 liters to prevent a dangerous heat evolution.

FURTHER 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 conducting tests “on-site” 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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