POLYUREA H SL

Sprayed, hot-applied polyurea membrane for flooring applications.

DESCRIPTION

Polyurea H SL is a 2-component polyurea resin, which cures into a hard membrane for flooring applications, and allows sand broadcasting ont the fresh product.

APPLICATION

General fast-applied flooring systems. Decorative and industrial floors, where fast application is needed.

TECHNICAL DATA

INFORMATION ON THE PRODUCT 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 22.75 kg+ pigment 0,5 kg	Metal container 214 kg 26.75 kg
Non-volatile content (%)	Approx 100%	100%
Flash point	>100ºC	>100ºC
Colour	Dark yellow	Dark yellow

Density

Temp (ºC)	Density (g/cm3)	Temp (ºC)	Density (g/cm3)
20	1.03	20	1.15
60	1.01	60	1.14

Viscosity

approximate Brookfield

Temp (ºC)	Viscosity (mPa.s)	Temp (ºC)	Viscosity (mPa.s)
10	5340	10	1400
20	2200	20	595
30	970	30	390
40	590	40	220
50	390	50	140
60	100	60	80

A/B mixing ratio	A=1, B=1.12 by weight A=1, B=1 by volume
Density and viscosity of the mixture	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	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.
Use before	12 months after manufacture, provided it is kept in its sealed container.

INFORMATION ON THE FINAL PRODUCT

Final state	Solid hard membrane
Colour	Variable, depending on the chosen pigmentation. For colours available, please contact Krypton Chemical.
Hardness (shore)	95A/55D (ISO 868)
Mechanical properties	Elongation at break: 160% Tensile strength: 13 MPa (EN-ISO 527-3) Tear strength: 78 N/mm (ISO 34-1, Method B)

Adhesion strength

Substrate	Adhesion strength (mPa)
Concrete (EP 100 primer)	5.6
Steel (PU primer)	3.6

Chemical resistance

Surface contact 24 h, 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

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)

Abrasion resistance

40 mg
Taber, CS10, 1kg-1000 cycles

SUPPORT REQUIREMENTS

In order 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/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

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, in order 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

StAdd 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

APPLICATION GUIDELINES

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

- Component A: 55ºC
- Component B: 60ºC
- Hose: 50ºC

Pressure should be 140-150 bar.
During application, check layer thickness and curing speed.
Spray Polyurea H SL at 2-3 kg/m2 as a general rule.

Contact Krypton Chemical for more detailed technical information.

Sand broadcasting: it is possible to broadcast snad or aggregates onto a top layer of product. To do so, it is recommended to wait until viscosity raises (ca 1 min). The product is open to sand broadcast for 4-10 minutes after spraying.

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	pigmentation?	pigment of choice. Use of pigment helps to obtain a uniform appearance.

CURING TIME

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

RE-APPLICATION

Usually, needed thickness can be obtaines 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.

CLEANING 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 has to 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 Too little pigment	Apply 1 kg/m2 Ensure full A+pigment homogeneization
Colour change	Exposed to sunlight?	UV-reaction	Use a last coat in dark grey or red
	Can it be applied without		Not recommended. Polyurea H SL is always delivered with the

SAFETY

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

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.