



Hybrid polyurea membrane for furniture and other industrial applications

DESCRIPTION

Polyurea FH is a 2-component polyurethane-polyurea system for elastic membrane application with crack-bridging capability. It is an extra fast-curing system that can only be applied by hot mechanical spraying equipment. Polyurea FH can be combined with different geotextiles to obtain on site applied, seamless liners.

APPLICATIONS

Furniture, general protection. On-site applied soft liners, totally seamless. Polyurea FH can be completed with an aliphatic polyurethane topcoat to ensure UV protection.

PROPERTIES

- Crack-bridging capability. Highly elastic membrane.
- Very fast curing, using two-component spraying equipment.
- It can be pigmented.

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B
Chemical description	Polyamine-polyol	Aromatic isocyanate prepolymer
Physical state	Liquid	Liquid
Packaging	Metal container	Metal container
Note: Pigment is delivered in a third container. See Pigment Spray data sheet for specific details.	192 kg 19,2 kg	204 kg 20,4 kg
Non-volatile content (%)	100%	100%
Flash point	>100°C	>100°C
Colour	Yellow (without pigment)	Yellow
Density	Temp (°C) Density (g/cm3)	Temp (°C) Density (g/cm3)
	20 1,0	20 1,05

Viscosity

Approximate values Brookfield	Temp (°C)	Viscosity (.s)	Temp (°C)	Viscosity (.s)
	20	1200	20	3000
	30	750	30	1000
	50	295	50	400
	70	165	70	200

A/B mixing ratio	A=100, B=105 by weight A=100, B=100 by volume
Density and viscosity of the AB mixture	Fast polymerization (see pot life data)
Colour	Dark yellow, but component A is pigmented by addition of pigment paste (Pigment Spray) delivered with each kit of Polyurea FH.
Pot life data	Gel time mixture A+B (20 g) <2 s at 25°C Tack free time 1 min
Storage	Keep between 10°C and 30°C.
Use before	12 months after manufacturing date.

INFORMATION ON THE FINAL PRODUCT

Final state	Elastomeric solid membrane
Colour	Several available colours on request
Hardness (shore)	75A
Mechanical properties	Maximum elongation: 350% Tensile strength: 6 (UNE EN ISO 527-1/3)

Tear strength 42 N/mm
(UNE EN ISO 527-1/3)

UV resistance

Polyurea FH is an aromatic isocyanate based product. A colour change is to be expected under sunlight. This change does not affect its mechanical properties. An additional UV protection can be provided with an Impertrans/Colodur topcoat.

SUPPORT REQUIREMENTS

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

1. Coct and cohesive (pull off test must show a minimum resistance of 1,4 N/mm2 in concrete).
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 10°C and 40°C. Support moisture must be less than 4%

TEMPERATURE AND HUMIDITY CONDITIONS

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

MIXING

Stir and homogenise separately both components using suitable mixing equipment before being loaded into the machine. Add the required Pigment Spray to the A-component and stir before loading. Recirculate both components while heating up to the required application temperatures.

APPLICATION AND RECOMMENDED QUANTITIES

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

- Component A: 60°C
- Component B: 70°C
- Hose temperature 65°C

Pressure must be adjusted to 150 bar.

During spraying, check coating thickness to ensure curing evolution is correct. Polyurea FH is applied at 1,5-2,0 kg/m2, obtaining a 1,5-2 mm thickness. Please contact Krypton Chemical for specific application details.

CURING TIME

Polyurea FH cures to touch after a few minutes after application.

Approximate hardness values are provided here as reference only (1 mm, polypropylene support, 25°C 50% RH)

time	Hardness shore A
10min	50
1 hr	58
3 hr	64
6 hr	68
3 days	72

RECOATING

It is recommended to obtain the right thickness with a single application.

Where an epoxy primer has been previously applied, spray Polyurea FH only after the primer is fully cured.

RETURN TO SERVICE

Under most conditions (25°C, 50% rh), the membrane is rain-resistant after 10 minutes.

TOOL CLEANING

In order to keep equipment in good conditions (spraying gun, gaskets), it is recommended not to use solvents. A cleaning fluid like Rayston Fluid can be used instead. Component B must be thoroughly removed and replaced with this fluid.



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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 a new Polyurea FH application.

FAQ

Problem	Question	Answer	Solution
Does not cure or remains sticky	Ratio AB correct?	Different pressure	Check and correct pumping equipment
Gray colour darkens upon exposure to sun	Exposed?	Components react with UV light.	Apply an aliphatic topcoat afterwards (eg Impertrans, Colodur)

SAFETY

Component B of Polyurea FH contains isocyanates and Component A contains corrosive polyamines that can cause burns. Always follow the safety instructions in the Material Safety Data Sheet. As a general rule, a good ventilation, protective clothing and respiratory protection is needed (combined organic vapor filter+particles A2P). 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 container still has some material left, do not mix with other products 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 dangerous 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.