

Sprayed, hot-applied polyurea membrane for flooring applications.

DESCRIPTION

POLYUREA MALEABLE is a 2-component polyurea resin, which cures into a hard membrane for flooring applications, and allows sand broadcasting on 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	>100°C	>100°C
Colour	Dark yellow	Dark yellow
Density		
	Temp (°C)	Density (g/cm3)
	20	1.03
	60	1.01

Viscosity

approximate Brookfield

Temp (°C)	Viscosity (mPa.s)	Temp (°C)	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 MALEABLE.
Pot life	Gel time mixture A+B (20 g) 1.5 min at 25°C 1 min at 60°C
Storage	Keep between 10° y 30°C. 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 (Epoxy 100 primer)	5.6
Steel (primer Activator)	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 (Polynat)

Abrasion resistance

40 mg
Taber, CS10, 1kg-1000 cycles

SURFACE REQUIREMENTS

In order to achieve a good penetration and bonding, surface 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 10°C and 40°C. Relative air humidity should be less than 85%.

SURFACE PREPARATION

Concrete surface must be prepared mechanically using shot blasting 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

Mix 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 MALEABLE must be applied using a 2-component hot spraying equipment. Recommended temperatures are:

- Component A: 50°C
- Component B: 50°C
- Hose: 50°C

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

Note: Apply a minimum thickness of 700 g / m2 in this case, use arid at a rate of 2kg / m2 (saturation) of size 0.1-0.3mm. For thicknesses of POLYUREA MALEABLE



POLYUREA SL SPRAY



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greater than 1 kg / m2 use aggregate at a rate of 3kg / m2 (saturation) of size 0.4-0.9mm

Contact Jofa Resins for more detailed technical information.

Sand broadcasting: it is possible to broadcast sand 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.

CURING TIME

POLYUREA MALEABLE 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 (25°C, 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 Sindec 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 MALEABLE
No hiding power	Horizontal?	Too little product	Apply 1 kg/m2 Ensure full A+pigment

		Too little pigment	homogeneization
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 MALEABLE 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 general 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.

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. 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.



JOFA RESINS
SUPPLIER OF AMAZING PRODUCTS & SERVICES

Unit 26 Weald Hall Farm Commercial Centre,
Canes Lane, North Weald, Essex CM16 6FJ
(+44) 0203 940 4560
www.jofaresins.com

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