

IMPERMAX POLYUREA H SUPREME

RAYSTON
products



Sprayed, hot-applied polyurea membrane

DESCRIPTION

Impermax Polyurea H Supreme is a polyurea-based system with very high elongation and, at the same time, excellent tensile strength, for applications on substrates exposed to large contraction / expansion movements. Low viscosity resin and easy application (compensated viscosities) with mechanical hot spraying equipment with a 1: 1 ratio by volume.

It is recommended to use aliphatic finishes with good elasticity for UV protection (such as Impertrans Pigmented or Impertrans Eco).

APPLICATION

- Roof waterproofing on concrete, metal, asphalt fabrics and other types of prefabricated membranes.
- Waterproofing and protection of concrete structures, especially those exposed to the outside
- Floating membranes for application in situ (together with Geomax Spray 200), totally continuous, without joints or overlaps, for primary or secondary water containment.



PROPERTIES

- Crack bridging ability.
- Highly elastic membrane.
- Fast curing.
- Pigmentable with Pigment Spray

CERTIFICATIONS

- **CE marking EN 1504-2:** surface protection of concrete structures, certification 0370-CPR- 2247
- Fire certification to an external fire. Class B_{roof} (t1)



TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B								
Chemical description	Polyamine	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.	191 kg 18.8 kg Pigment 0.4 kg	205 kg 20.8 kg								
Non-volatile content (%)	approx 100%	100%								
Flash point	>100°C	>100°C								
Colour	Dark yellow	Slightly yellow								
Density										
	<table border="1"><thead><tr><th>Temp (°C)</th><th>Density (g/cm³)</th></tr></thead><tbody><tr><td>25</td><td>1.05</td></tr></tbody></table>	Temp (°C)	Density (g/cm ³)	25	1.05	<table border="1"><thead><tr><th>Temp (°C)</th><th>Density (g/cm³)</th></tr></thead><tbody><tr><td>25</td><td>1.12</td></tr></tbody></table>	Temp (°C)	Density (g/cm ³)	25	1.12
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25	1.05									
Temp (°C)	Density (g/cm ³)									
25	1.12									

Viscosity	Temp (°C)	Viscosity (mPa.s)	Temp (°C)	Viscosity (mPa.s)
	Approximate	25	750	25

Mixing ratio A/B
A=1, B=1.05 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) delivered with each kit of Impermax Polyurea H Supreme..

Pot life
Gel time mixture A+B (20 g) 12 s at 25°C

Approximate
Tackfree in 20 seconds

Storage
Keep between 10° y 30°C.

Use before
12 months after manufacture date, provided it is kept in its sealed container.

INFORMATION ON THE FINAL PRODUCT

Final state
Solid elastomeric membrane

Colour
Variable according to pigmentation

Hardness Shore ISO868
90A/35D

Mechanical properties
Elongation at break: 690% Tensile strength: 20 MPa (UNE EN ISO 527-1/3)

UV resistance
Tear strength: 46 N/mm (ISO 34-1 method B)

Resistance to abrasion
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 topcoat.

Resistance to abrasion
10 mg (Taber, CS-10, 1000 c, 1 kg)

SUPPORT REQUIREMENTS

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

1. Flat and leveled
2. Coct 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

Support temperature must be between 10°C and 40°C. 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 10°C and 40°C. Relative air humidity should be less than 70%.

SUPPORT PREPARATION

Concrete substrates must be prepared mechanically using high pressure sand or abrasion, in order 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.



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Eliminate all dust and loose particles from the substrate by brushing or vacuum cleaning. Failure to adequately priming the surface may lead to premature delamination, cracking or contraction.

Metal substrates must be thoroughly sanded and the final surface must be free of dust. A suitable adhesion-promoting primer must be used (e.g. PU Primer) to prevent deformation, cracks or adhesion failure.

MIXING

Stir and homogenise separately both components using suitable mixing equipment before being loaded into the machine. **Best Mixing equipment should have extensible blades with overall width equivalent to 1/3 of drum diameter**. 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 GUIDELINES

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

Component A: 70°C
Component B: 75°C
Hose temperature: 70°C

Pressure should be 150 bar.

During application, check layer thickness and curing speed.
Spray Impermax Polyurea H Supreme at 1-2 kg/m².

Wind speeds in excess of 25 km/h may result in excessive loss of exotherm and interfere with the mixing efficiency of the spray gun affecting polyurea surface texture, cure, and physical properties and will cause overspray issues.

Contact Krypton Chemical for more detailed technical information.

CURING TIME

Approximate hardness values are provided as reference only (2 mm, polypropylene support, 20°C 50% RH)

Time	Hardness shore A
45 min	53
3 hours	56A
1 day	65A

REAPPLICATION

Usually, necessary 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. If spraying over a previously applied epoxy primer, ensure the primer is completely cured (ca 8 hours)

RETURN TO SERVICE

Under most usual conditions (25°C, 50% rh), the membrane is resistant to rain droplets after 5 minutes, and able to resist light pedestrian traffic in 1 hour. After 1 day, more than 90% of the final properties are reached.

TOOL CLEANING

Solvent use for machine component cleaning is discouraged. A cleaning plasticizer fluid like Rayston Fluid is suitable. Component B must be completely removed from all air-exposed parts and replaced with this cleaning fluid. A maintenance work should be carried out regularly on the treated surfaces according to the intended use

FAQS

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 Impermax Polyurea H

Supreme

Apply 1 kg/m²

No hiding power

Horizontal?

Too little product

Too little pigment

Ensure full A+pigment homogenization

Colour change

Exposed to sunlight?

UV-reaction

Use a last coat in dark grey or red

Not recommended.

Impermax

Polyurea H

Supreme is always delivered with the pigment of choice.

Use of pigment helps to obtain an uniform appearance

Can it be applied without pigmentation?

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

LEED-requirements compliant.

EQ Credit 4.2, Low emissin materials: Paints and Coatings.

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 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 Technical 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 Technical Data Sheet supersedes previous versions.



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