

# IMPERMAX POLYUREA H FLEX ALUM

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Sprayed, hot-applied polyurea waterproofing membrane

## DESCRIPTION

Impermax Polyurea H Flex Alum is a two component polyurea resin, which cures very fast into an elastomeric membrane with an excellent crack-bridging ability. This resin can only be applied by a two-component spraying equipment.

Impermax Polyurea H Flex Alum is the aluminium metallized version of the reference Impermax Polyurea H Flex. Both references have the same mechanical properties and hold the same certificates.

The only difference between the metallic version and the rest of the colours is that the Impermax Polyurea H Flex Alum has an improved electrical conductivity (antistatic effect) and that due to its special colour does not turn yellow if exposed to sunlight, therefore it does not need an aliphatic topcoat to keep the colour and the aesthetical appearance.

## APPLICATION

Impermax Polyurea H Flex Alum is designed to protect and waterproof outdoors structures, mainly roofs and terraces. Either for aesthetical reasons or to save a step in the waterproofing process (not need to apply an aliphatic topcoat).



## CERTIFICATIONS

- Fire test B2 (DIN 4102-1:1998): Ignitability when subjected to direct impingement of flame. Class B2
- ETA: European Technical Assessment document N° 21/0740 (EAD 030675-00-0107) – CE marking



## TECHNICAL DATA

### INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B
<b>Chemical description</b>	Polyol/Polyamide	Aromatic isocyanate prepolymer
<b>Physical state</b>	Liquid	Liquid
<b>Packaging</b>	Metal container 192 kg (pigment added)	Metal container 208 kg
<b>Non-volatile content (%)</b>	Approx 100%	100%

<b>Flash point</b>	>100°C	>100°C																																
<b>Colour</b>	Aluminium	Slightly yellow																																
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<b>VOC (2004/42/CE)</b>	<2g/L, <0,2% A, j	0 A, j																																
<b>A/B mixing ratio</b>	A=1, B=1.08 by weight A=1, B=1 by volume																																	
<b>Density and viscosity of the mixture</b>	Fast polymerization. See Pot life data.																																	
<b>Colour</b>	Aluminium																																	
<b>Pot life</b>	Gel time mixture A+B (20 g) 8-9 s at 25°C 4-6 s at 60°C																																	
<b>Storage</b>	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.																																	
<b>Use before</b>	12 months after manufacture, provided it is kept in its sealed container.																																	

### INFORMATION ON THE FINAL PRODUCT

<b>Final state</b>	Solid elastomeric membrane															
<b>Colour</b>	Aluminium effect.															
<b>Hardness (shore)</b>	90A/40D (ISO 868)															
<b>Mechanical properties</b>	Elongation at break: 400% Tensile strength: 14 MPa (EN-ISO 527-3)															
<b>Chemical resistance</b>	Permanent contact (7 days, 80°C 0=worst, 5=best)															
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<b>UV resistance</b>	Good resistance to UV-induced degradation. Excellent gloss and color retention when exposed to sunlight.															
<b>Fire resistance</b>	Class B2															
<b>Tear strength</b>	69 N/mm (ISO 34-1 Method B)															
<b>Electric resistance</b>	3,55 x 10 <sup>9</sup> Ω (EN-1081:2019, method A, vertical resistance)															
<b>Surface resistivity</b>	1,60 x 10 <sup>13</sup> Ω/square (ASTM D257-14)															
<b>Volume resistivity</b>	6,80 x 10 <sup>12</sup> Ω x cm (ASTM D257-14)															



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## SUPPORT REQUIREMENTS

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

1. Flat and levelled
2. Compact and cohesive (pull off test must show a minimum resistance of 1,4 N/mm<sup>2</sup>).
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%.

## 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. Eliminate all dust and loose particles from the substrate by brushing or vacuum cleaning.

## MIXING

Stir and homogenise separately both components using suitable mixing equipment before being loaded to the machine. Recommended mixing equipment should have extensive blades, width equivalent to 1/3 of drum diameter. Be sure that pigment in component A is well mixed and liquid has a homogeneous aspect before loading it into the machine. However, excess stirring may lead to undesirable moisture pick up. Recirculate both components while heating up to the required application temperatures.

## APPLICATION GUIDELINES

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

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

Pressure should be between 135 and 170 bar.

During application, check layer thickness and curing speed.

Spray Impermax Polyurea H Flex Alum at 2 kg/m<sup>2</sup> as a general rule.

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

Impermax Polyurea H Flex Alum cures to touch after a few minutes after application.

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

Time	Hardness (shore A/D)
10 min	74/27
20 min	77/29
1 hr	80/30
24 hr	88/35

## RE-APPLICATION

Usually, needed thickness can be obtained in one single coat. If necessary, a second coat can be applied immediately afterwards. To obtain a good adhesion, it is recommended to clean the previous coat applied with xylene.

## RETURN TO SERVICE

Under most usual conditions (25°C, 50% rh), the membrane is resistant to rain droplets after 15 minutes, and able to resist light pedestrian traffic in 1 hour. After 2 days, 90% of the final properties are reached.

## 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

A maintenance work must be carried out regularly on the treated roofs according to the intended use.

This work includes the following tasks:

- Leaf removal
- Grass, dirt, moss and other vegetation removal
- Keeping storm water system in good working order.
- Ensure gratings are in place, in order to prevent gutter obstructions.
- Check proper condition of several structures (flashing, seams, retaining walls...)
- Verification of possible damages due to improper use.

If aesthetic appearance of the roof is an important issue, it is essential to regularly clean the surface with water (some mild detergent may be added), according to the use.

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 Impermax Polyurea H Flex Alum.

## 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 Impermax Polyurea H Flex Alum
No hiding power	Horizontal?	Too little product	Apply 1 kg/m <sup>2</sup>
		Too little pigment	Ensure full A+pigment homogenization

## 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.



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## **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 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 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.**



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