

## Expandable polyurea for waterproofing spray applications

### DESCRIPTION

Polyurea Rayston X5 is a polyurea system that increases its volume 3 to 5 times and helps to fill all voids and height differences in substrates of different nature. The product has good mechanical properties and in some decks not exposed to traffic may be used as a waterproofing membrane and using the right top coat (Impertrans / Colodur / Impertop Fast 2K, Impermax A). The product may also be used as a primer onto substrates like bitumen felt, etc before application of 2 - 3 mm polyurea for 25 year guarantee under ETAG 005.

### APPLICATIONS

- Primer onto different height / uneven ROOFING substrates (bitumen, metal, fibrecement).
- Waterproofing membrane for roofs and decks not exposed to traffic (metal, fibrecement, etc).
- Comfort layer in flooring areas needing a cushioning / shock absorption capacity
- Product has a limited puncture resistance compared to pure or hybrid polyurea membranes. Use in decks and roofs not exposed to traffic.

### TECHNICAL DATA

#### INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B	Component C
<b>Chemical description</b>	Polyol/Polyamine	Aromatic isocyanate prepolymer	Waterborne catalyst
<b>Physical state</b>	Liquid	Liquid	Liquid
<b>Packaging</b>	Metal container 186 kg 18.5 kg	Metal container 210 kg 21.0 kg	Plastic 4 kg 0.5 kg
<b>Non-volatile content (%)</b>	100%	100%	100%
<b>Flash point</b>	>100°C	>100°C	>100°C
<b>Colour</b>	Dark yellow	Light yellow	White
<b>Density</b>	1.04	1.14	1.05
<b>Viscosity</b>	20°C: 1100 50°C: 320	20°C: 390 50°C: 125	20°C: <100 50°C: <50
Approximate values Brookfield mPa.s			

<b>A/B mixing ratio</b>	AC=100, B=110 by weight AC=100, B=100 by volume
<b>Density and viscosity of the AB mixture</b>	Fast polymerization (see pot life data)
<b>Colour</b>	Off white, after cream time.
<b>Curing TIME</b>	Cream time 25°C, 7-8s Cream time 50°C, 4s
<b>Storage</b>	Keep between 10°C and 30°C.
<b>Use before</b>	12 months after manufacturing date, kept in its sealed container

#### INFORMATION ON THE FINAL PRODUCT

<b>Final state</b>	Elastomeric solid foam
<b>Colour</b>	Off white. Turns to yellow under sunlight. No other colours available.
<b>Density</b>	200 kg/m3
<b>Hardness (shore)</b>	45-50A
<b>Mechanical properties</b>	Maximum elongation: >125% Tensile strength: 1.7 MPa (UNE EN ISO 527-1/3) Tear strength 7.7 N/mm (UNE EN ISO 527-1/3)

**Static indentation** P3 at TH3, complies.

**As per EOTA-007**

**Adhesion strength**

Surface	Adhesion strength (MPa)
Fibrous cement	0.85
Fibrous cement (with humidity primer)	>5
Steel	0.8

**UV resistance**

Polyurea Rayston X5 is an aromatic isocyanate based product. A colour change is to be expected under sunlight. This change does not affect its mechanical properties, but a topcoat with polyurea, polyurethane or polyaspartic is strongly recommended.

**Thermal resistance**

Stable up to 80°C

**Thermal conductivity**

0.044 (10°C)  
0.045 (20°C)  
0.046 (30°C)  
0.048 (40°C)

### SUPPORT REQUIREMENTS

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

1. Compact and cohesive (pull off test must show a minimum resistance of 1,4 N/mm<sup>2</sup>).
2. Clean and dry, free of dust, loose particles, oils, organic residues or laitance
3. Thoroughly dry. Fibrecement with high humidity content substrates may require the use of a special primer (H Primer) before application onto them.

Support temperature must be between 10°C and 40°C. Support moisture must be less than 1,5%

### MIXING

Stir and homogenise separately both components using suitable mixing equipment before being loaded into the machine. Recirculate both components while heating up to the required application temperatures.

### APPLICATION GUIDELINES

Polyurea Rayston X5 must be applied using 2-component hot spraying equipment. Recommended temperatures are:

- Component A: 60°C
- Component B: 60°C

Pressure must be adjusted to 100-120 bar.

Recommended spray gun: Master II type (Gama)

For a good finish, apply the recommended amount (specific for each project) in two successive layers: a first very thin coat (150-250 g/m<sup>2</sup>), and the rest of the intended amount 5-10 minutes after.

Priming:

On non porous substrates there is no need of other primers. Surfaces must be clean, oil-free and free of loose materials.

On porous substrates with some moisture it is recommended to seal the surface with humidity primer or Primer GC

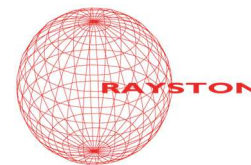
Polyurea Rayston x5 is sensitive to moisture. To prevent bubble formation, spray only on fully dry surfaces.

### CURING TIME

Polyurea Rayston X5 cures to touch after a few seconds after application.

### 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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### **SAFETY**

Component B of Polyurea Rayston X5 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 filters+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 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.**