

HUMIDITY PRIMER

RAYSTON
products



Water-based epoxy primer

DESCRIPTION AND APPLICATION

Moist surfaces are troublesome when treated with any synthetic resin, both because of immediate adhesion difficulties and problems arising afterwards because of the upward water pressure.

In many cases, material and time constraints force applicators to work on less-than-optimal support conditions, and a moisture-addressed product is needed in order to:

- Minimize adhesion failures.
- Avoid blistering due to the water pressure from below (support saturation)
- Avoid air bubbles, due to the water vapour pressure which cannot be released (mostly encountered in elastic membrane treatments).
- Incompatibility of the support with one-component, moisture-cured polyurethane resins.

Humidity Primer is the best solution as a primer for waterproofing or flooring polyurethane application on supports with moisture content between 4 and 8%. Nevertheless, this product is not useful when moisture has a freatic origin, with pressures greater than 1,5 N/mm².

Humidity Primer is a 2-component, water-based epoxy resin. Components, once mixed, are totally compatible with moist supports, and the resulting polymerized product is a crystalline material with high adhesion and tensile strength. It effectively blocks residual moisture flow and prevent blistering of the polyurethane coating applied on top.



APPLICATION

This product is useful for any kind of waterproofing project, involving polyurethane sealing, such as:

- Roof and wall refurbishments.
- Waterproofing treatment of tanks and other water management facilities.
- Floorings in moisture-affected environments.

CERTIFICATIONS

ETA: European Technical agreement document N° 06/0263 -CE marking: 10 and 25 years.



TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B
Chemical description	Epoxy resin	Aqueous polyamine solution
Physical state	Liquid	Liquid
Packaging	Metal container 5,2 kg 1,4 kg	Plastic container 12,8 kg 3,6 kg
Non-volatile content (%)	Approx. 100%	31%

Flash point	>100°C	>100°C		
Colour	Colourless	Slightly yellow		
Density	Temperature (°C) 25	Density (g/cm ³) 1,14	Temperature (°C) 25	Density (g/cm ³) 1,05
Viscosity	Temperature (°C) 35	Viscosity (mPa.s) 70	Temperature (°C) 35	Viscosity (mPa.s) 170
Approximate values	25	150	25	280
Brookfield	15	300	15	500
	5	500	5	1800
VOC	0	2 g/L, 0.2%		
A/B mixing ratio	A=100, B=244 by weight A=100, B=266 by volume			
Mixture properties	Density: 1,07g/cm ³ at 23°C Viscosity: 1300 mPa.s at 23°C Non-volatile content: 51% Colour: milky white			
Pot life	Temperature (°C) 10	Pot life (100g/min) 90		
	25	45		
	35	30		
Storage	Keep between 10° and 30°C. Frost-sensitive. Component A may crystallize if stored for protracted periods under certain conditions. If this occurs, it can be restored to its original condition by heating it to 70 - 80 °C and stirring it thoroughly Use before 12 months after manufacturing date			

INFORMATION ON THE FINAL PRODUCT

Final state	Solid, hard, film
Colour	Light yellow
Hardness (shore)	64D
Mechanical properties	Maximum elongation: 3,2% Tensile strength: 39 MPa (EN-ISO 527-3)
Tear resistance	7,2 N/mm
Solid film density	1,3 g/cm ³
UV resistance	This product shows a very slight yellowing upon UV exposure, without loss of mechanical properties.
Chemical resistance	Permanent contact (3 days, 80°C)

Chemical	%weight gain
Water	5
Methoxypropyl acetate	25
Isopropyl alcohol	15
Skydrol	0
Xylene	10
Ammonia (3%)	10
Acetone	35
Diesel	5
Hydrogen peroxide	10
Sodium hydroxide (40 g/L)	10
Bleach	5
Sulphuric acid (10%)	30
Sulphuric acid (30%)	30
Sulphuric acid (50%)	30
Acetic acid (10%)	15



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Surface contact (24h, room temperature, 5=ok, 0=not recommended)

Chemical	Result
Water	5
Ethyl alcohol	5
Engine oil	5
Vinegar	5
Hydrogen peroxide	5
Sulphuric acid (10%)	4
Sulphuric acid (30%)	4
Sulphuric acid (50%)	4
Isopropyl alcohol	5
Xylene	4
Ammonia (3%)	5
Diesel	5
Methoxypropyl acetate	5
Acetic acid (10%)	3
Bleach	5
Sodium hydroxide (40 g/L)	5
Acetone	2
Skydrol	5

Adhesion strength	Surface	Adhesion strength (MPa)
	Concrete	>4,9

Use temperature	Stable up to 80°C
Gloss (60°)	14%

SUPPORT REQUIREMENTS

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

1. Flat and levelled (product is self-levelling)
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

- Diluted: 10-20% in water, 300-500 g/m²
- Non-diluted: 300-500 g/m²

Support temperature should be between 15°C and 40°. At higher temperatures, specific precautionary measures must be taken. Please follow manufacturer advice. Application under low temperature and high humidity conditions is not recommended.

SUPPORT PREPARATION

Concrete surfaces must be previously prepared by sandblasting or any other suitable means. Remove all dust and loose material before priming.

MIXING

Stir and homogenise thoroughly component A and B using a low-speed stirrer. The mixture turns to a whitish, milky dispersion. After application, the milky layer should turn to a colourless film in a one to two hours period, depending on temperature, humidity and thickness.

APPLICATION

Apply 200 to 500 g/m², by brush or roller. Higher quantities may lead to white/translucent areas and poor appearance.

On very absorbent substrates, dilution is allowed. Use 10 to 20% water.

On hot surfaces (e.g recently exposed to sun), moist the surface before starting application.

Application in excess can lead to resin retraction upon water evaporation. Do not exceed the recommended application quantities. If some white spots appear after curing, they must be removed before application of following coats.

CURING TIME

Data for a 500 g/m² application.

High temperature and low humidity favour the drying process. High humidity conditions make the initial milky film to remain white and sticky.

Conditions	Dry to touch (h)
25°C, 5%hr	6
25°C, 90% hr	10 (milky)
35°C, 20% hr	2
6°C, 50°C	>100
-15°C	>100, always milky

REAPPLICATION

A second coat may be applied, if needed, from the moment when the first coat is dry to touch, and not later than 24 hours.

RETURN TO SERVICE

When used as a primer for polyurethane waterproofing or flooring jobs where appearance is important, it is recommended to ensure Humidity Primer is fully cured and dry, by measuring the moisture content on the Primer film if necessary. If some of the initial water remains when a moisture-curing polyurethane is applied, some blisters may develop.

TOOL CLEANING

Component A can be cleaned using Rayston Solvent. Component B and the unreacted AB mixture can be cleaned with water.

QUESTION AND ANSWER

Problem	Question	Causes	Solutions
Film remains white and sticky	Cold, humid weather?	Slow reaction rate	Remove and change primer system

SAFETY

Epoxy components are potentially sensitizing. Always follow instruction provided in the Material Safety Data Sheet. As a general rule, suitable skin and eye protection must be worn. This product is intended to be used only for the uses and in the way here described. This product is to be used only by industrial or professional users. It is not suitable for DIY-type uses.

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 before considering the risk of potentially dangerous reactions. Never mix 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.



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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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