AQUA SHIELD PRIMER

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 surface conditions, and a moisture-adressed product is need 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.

AQUA SHIELD PRIMER is tha best solution as a primer for waterproofing or flooring polyurethane application on supports with moisture content greater than 4%.

Nevertheless, this product is not useful when moisture has a freatic origin, with pressures greater than 1,5 N/mm2.

AQUA SHIELD 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.

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	>100ºC	>100ºC
Colour	Colourless	Slightly yellow
Density		

Temp (ºC)	Density (g/cm3)
25	1,14

Temp (ºC)	Density (g/cm3)
25	1,05

Viscosity

Approximate values Brookfield

Temp (ºC)	Viscosity (mPa.s)
35	70
25	150
15	300
5	500

Temp (ºC)	Viscosity (mPa.s)
35	170
25	280
15	500
5	1800

VOC	0	2 g/L, 2%
A/B mixing ratio	A=100, B=244 by weight A=100, B=266 by volume	
Mixture properties	Density: 1,07g/cm3 at 23ºC Viscosity: 1300 mPa.s at 23ºC Colour: milky white	

Pot life

Temp (ºC)	Pot life (100, min)
10	90
25	45
35	30

Storage	Keep between 10º and 30ºC. 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/cm3
UV resistance	This product shows a very slight yellowing upon UV exposure, without loss of mechanical properties..
Chemical resistance	Permanent contact (3 days, 80ºC)

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

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
Methoxipropyl acetate	5
Acetic acid (10%)	3
Bleach	5
Sodium hydroxide	5

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(40 g/L)	
Acetone	2
Skydrol	5

Adhesion strength

Surface	Adhesion strength (mPa)
Concrete	>4,9

Use temperature	Stable up to 80ºC
Gloss (60º)	14%

SURFACE REQUIREMENTS

In order to achieve a good penetration and bonding, surface 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

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

SURFACE 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, milki 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 apperar 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 favours the drying process. High humidity conditions make the initial milky film to remain white and sticky.

Conditions	Dry to touch (h)
25ºC, 5%hr	6
25ºC, 90% hr	10 (milky)
35ºC, 20% hr	2
6ºC, 50ºC	>100
-15ºC	>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 o flooring jobs where appearance is important, it is recommended to ensure AQUA SHIELD 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 polyrethane is applied, some blisters may develop.

TOOL CLEANING

Component A can be cleaned using SINDEC 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 contains still have some material left, do not mix with other product before considering the risk of potential 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.
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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