

EX1050

Expandable Pure Polyurea

1-Description

AKFIX EX1050 is an Expandable Pure Polyurea system that is developed as a seamless coating for waterproofing, and sealing. It expands approximately 4-5 times its original volume during the spray application and helps to fill all voids and height differences in substrates of different nature. Thanks to these features, it can be easily used on all kinds of surfaces for waterproofing and coating purposes.

2-Properties & Features

- 100% solids, VOC free
- Fast cure and service time
- Very good adhesion to concrete substrates.
- Environmentally friendly
- Waterproofing and thermal insulation behavior
- Suitable for horizontal and vertical applications
- Reduces application processes by eliminating hand applied cementitious skim coats and patch repair materials.
- Good resistance to weather conditions
- Suitable for internal and external applications.
- Enable to bond to any surface, such as cement, concrete, polyurethane, wood, metal, etc.
- Excellent resistance to weather conditions

3-Fields of Application

- Waterproofing and protection membrane for concrete and metal roofs, terraces and balconies not exposed to traffic.
- As a surface repair and restoration layer on concrete substrates to minimize surface preparation labor prior to the application of protective membranes.
- To fill and protect a variety of porous surfaces.
- Primer onto different height / uneven roofing substrates.
- Waterproofing exterior basements, retaining walls and foundations.
- As a protective coating for thermal insulation polyurethane foam products.

4-Product Information

Packaging	225 kg drum (A - MDI Prepolymer), 200 kg drum (B - Amine Resin)
Shelf Life	9 months
Storage Conditions	Store in cool and dry conditions between +10°C and +30°C

5-Technical Data

Component Properties	Unit	Method	A Component	B Component
Chemical Structure	-	-	MDI Prepolymer	Amine Resin
Physical Condition	-	-	Liquid	Liquid
Density (25°C)	gr/ml	ASTM D 1217	1,11 ± 0,03	1,02 ± 0,02
Viscosity (25°C)	cps	ASTM D 4878	200 - 400	400 - 700
Solid Content	%	ASTM D 2697	100	100
VOC Content	%	ASTM D 1259	0	0
Color	-	-	Light Yellow	Dark Grey (RAL 7043), Desired RAL Codes

Reaction Properties	Unit	Method	Data
Gel Time	Second	-	15-20
Tack Free Time	Second	-	45-50

Finished Product Properties	Unit	Method	Value
Tensile Strength	MPa	ASTM D 638	≥ 5
Elongation	%	ASTM D 638	≥ 125
Shore A	-	ASTM D 2240	70 - 75
Density	Kg/m ³	ASTM D 792	230
Thermal Conductivity	W/mK	EN 12667:2003	0,051
Adhesion Strength	N/mm ²	ASTM D 4541	Concrete: ≥ 2 Steel: ≥6
Capillary Water Permeability	kg/m ² h ^{0,5}	EN 1062-3	0,01
Compression strength	kPa	ASTM D1621	>100
UV Resistance test	hour	ASTM G154	No swelling, crack and deformation (1000 hrs)

6-Application Requirements

In order to achieve a good penetration and bonding:

- The surface must be solid and of sufficient strength. Application should not be made on screed with low concrete quality. The minimum adhesion strength should be 1.5 MPa.
- Before applying on fresh concrete, it should be waited for at least 28 days for the concrete to dry.
- Surface and ambient temperature must be at least 10°C and at most 40°C.

7-Surface Preparation

- The application surface must be clean, dry and sound surfaces and the elements that will prevent adhesion must be removed from the surface.
- Dilatations on the surface should be insulated with the appropriate polyurethane based filler material and dilatation tape.
- Check the seals and overlaps for metal surfaces and where necessary seal with a proper product.
- Akfix EX1050 Expandable Pure Polyurea system can be applied to many different surfaces and the procedure will vary depending on its nature or state. A primer may be required, subject to type and/or condition of the substrate. Consult technical service personnel for specific primer recommendations and substrate preparation procedures.

8-Polyurea Application

Preparation of Components:

Before starting the application, the component B must be mixed in the barrel for at least 30 minutes until a homogenous mixture obtained. The mixing process must continue during application.

It is important that the temperature of components A and B be in the range of 20-25 °C before application. The components should not be diluted in any way.

Spray Machine Settings:

Akfix EX1050 Expandable Pure Polyurea is could be applied with a spray machine operating at high pressure and temperature. Machine settings must be checked continuously during application.

Parameters	Data
A Component (MDI Prepolymer) Temperature	55°C
B Component (Amine Resin) Temperature	50°C
Hose Temperature	50°C
Machine Pressure	140-160 bar

Mixing ratio:

It should be checked continuously whether the mixing ratio is correct or not during the application.

Mixing Ratio	Unit	Data
A/B	Volume	100/100
	Weight	112/100

Application:

It is recommended that the product should be sprayed in multi-directional (north-south/east-west) passes to ensure uniform thickness.

To reduce the possibility of blisters and blow holes when applying Akfix EX1050 Expandable Pure Polyurea to cementitious or other porous surfaces:

- Do not apply on damp or wet substrates.
- Start spray application after peak heat of the day when surface is cooling.
- Attention should be paid to the condensation that may occur on the surface. Application should not be done early in the morning. The surface temperature must be at least 3°C higher than the dew point
- Do not apply as a waterproofing barrier on the negative side of a structure where hydrostatic pressure is possible

For application details please contact our technical department.

9-Top Coat Application

Akfix EX1050 Expandable Pure Polyurea is an aromatic polyurea, therefore as all aromatics color change will occur under direct sunlight. This does not affect the physical properties and performance of the product but an aliphatic topcoat recommended for color stability and increase longevity in sun exposure areas. The final coat should be applied within 0-12 hours after the application of the main coat.

10-Consumption

Product	Data
Akfix EX1050 Expandable Pure Polyurea	1,0 – 1,1 kg/m ² (4 – 5 mm thickness)

* Consumption in the table is theoretical. Consumption may vary according to surface permeability, weather conditions, and the technique of application.

11-Cleaning

Clean all tools and application equipment with suitable cleaner solvent immediately after use. Hardened / cured material can only be cleaned by mechanical methods

11-Safety

Contains Diphenylmethane-4,4'-Diisocyanate. Harmful by inhalation. Irritating to eyes, respiratory system and skin. Do not breathe spray/vapor. Wear suitable protective clothing and gloves. Use only in well-ventilated areas. Pressurized container. Keep away from direct sunlight and do not expose temperatures over 50°C. Do not pierce or burn, even after use. Keep away from sources of ignition, no smoking. Keep out of the reach of children.

12-Disclaimer

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