

SR 1080

Slip Resistant Polyurea

1-Description

AKFIX POLYUREA SR 1080 is a two component, solvent-free and 100% pure polyurea system. It has been specially designed to provide long lasting skid resistant surface with the safety of R11 slip resistance rating. AKFIX POLYUREA SR 1080 is a high performance waterproofing and coating product that combines speed, strength and flexibility. Unlike all known complex non-slip floor applications, it is an effective product that can be applied one step application easily without using aggregate broadcasting. The spray applied one process application method results in significant time and labor savings over traditional anti-skid flooring systems.

2-Properties & Features

- High anti skid property - R11 skid resistance rating
- Fast application with a single product- significant labor saving
- Very fast cure- significant time saving
- Seamless
- Applicable in any desired thickness
- Very good adhesion to concrete
- High tensile strength and abrasion resistance
- Excellent flexibility and crack bridging
- Excellent chemical resistance
- Excellent resistance to weather conditions

3-Fields of Application

- Car park decks and ramps
- Garages and internal garages
- Roof and terrace decks
- Factories and industrial floors
- Pedestrian walkways

4-Application Conditions

- The surface must be strong and of sufficient strength. Application should not be made on screed concrete which has low quality. The compressive strength for surface must be minimum 25 MPa, the lowest adhesion strength should be 1,5 MPa.
- Before application on fresh concrete the concrete should be allowed to dry for at least 28 days.
- The surface and ambient temperature should be at least 41°F and not more than 95°F.
- Relative air humidity should be less than 85%.
- The maximum amount of surface moisture should be 4% for the surfaces applied polyurethane primer (AKFIX PRIMER S80), maximum 6% for surfaces applied moisture tolerant epoxy primer (AKFIX PRIMER 80), maximum 7% for surfaces applied water based epoxy primer (AKFIX PRIMER W80).
- Attention should be paid to condensation on the surface. Application should not be made early in the morning. The surface temperature should be at least 37°F higher than the dew point.
- Do not apply on frozen, melting surfaces or on surfaces where rain is expected within 6-8 hours.
- The above conditions apply to both primer and polyurea application.

5-Surface Preparation

- The application surface should be clean and dry. The elements that prevent adhesion should be cleaned from the surface. Do not wash to clean the surface.
- If necessary, the surface should be wiped off with suitable wiping machines in order to remove the weak concrete on the surface for to open the eyelets and openings. The glazed top layer of ceramic surfaces should be roughened. Dust happened after wiping should be removed from the surface by brush or vacuum cleaners.
- Dilatations on the surface should be insulated with the appropriate polyurethane based filler material (AKFIX PU DF 25) and dilatation tape.
- Any fractures, gaps and segregations on the surface must be repaired with suitable epoxy mortar (AKFIX EP MORTAR 310) or cement based repair mortars.
- Corner chamfers should be supported with appropriate repair mortar or chamfer tape.
- The large screed concrete surfaces should be cut. The inside of the joints should be filled with polyurethane or polyurea based sealant (AKFIX WP 35)
- Sanding and polishing should be done according to the standards for corrosive areas in metal surface coatings. The joints on the cleaned metal surface should be covered with polyurethane based sealant (AKFIX WP 35), flexible tape or steel paste.
- As a result of these processes, dust and debris on the surface should be removed from the surface for the last time.

6-Primer Application

- If the surface moisture is less than 4% on absorbent surfaces (concrete, wood etc.), it is recommended to use a low viscosity primer (AKFIX PRIMER 90 - AKFIX PRIMER E80) for the first coat primer application. This application will reduce the amount of epoxy primer to be applied on the second layer priming and the number of pinholes on the surface in polyurea application.
- After the impregnation primer application, one can choose between AKFIX PRIMER S80, AKFIX PRIMER 80 or AKFIX PRIMER W80 according to surface moisture.
- If the surface moisture is above 4%, the moisture tolerant primer (AKFIX PRIMER 80) or AKFIX PRIMER W80 should be used instead of first layer impregnation primer.
- For metal surfaces, choose AKFIX PRIMER M80.
- For non-absorbent surfaces (ceramic, glass or metal), choose AKFIX PRIMER S80, AKFIX PRIMER 80 or AKFIX PRIMER W80.
- To obtain a homogeneous primer mixture, the primer should be mixed with an electric mixer for 3-4 minutes, low speed (~ 300 - 400 rpm) or with suitable equipment. Do not mix at high speed for a long time to prevent air bubbles.
- The prepared primer mixture is applied to the surface by brush, roller or airless spraying machines.
- Before applying AKFIX POLYUREA SR 1080, make sure that the primed surface is sufficiently dry. The primed surface should not be too wet or completely dry. It is sufficient to leave a feeling of adhesion in your hand.

7-Polyurea Application

- **Preparation of Components:**
Before starting the application, the component B (amine resin) must be mixed in the barrel for at least 30 minutes until a homogenous color is obtained. The mixing process must continue during application. It is important that the temperature of components A and B be in the range of 77-86°F before application. The components should not be diluted in any way.
- **Spray Machine Settings:**
The polyurea is applied to floors with a spraying machine operating at high pressure and temperature. Machine settings must be checked continuously during application.

Parameters	Datas
A Component Temperature (MDI Prepolymer)	140-150°F
B Component Temperature (Amine Resin)	140-150°F
Hose Temperature	140°F
Machine Pressure	140-180 bar

After all preparations are completed, polyurea is applied to the surface by spraying in 2 layers with a minimum thickness of 2 mm. Then, a rough surface is obtained by applying the rain method at a distance of 2m from the polyurea applied surface until desired anti slip surface obtained.

- **Mixing ratio:**

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

It should be checked continuously if the mixing ratio is correct or not with looking at machine pressure bar hours.

8-Top Coat Application

If the applied AKFIX POLYUREA SR 1080 product is under direct sunlight, color change can be observed after a certain period of time. However, this does not affect the physical properties and performance of the product.

If color stability is desired, aliphatic top coat should applied. Polyaspartic polyurea system may be preferred as the top coat application. The final coat should be applied within 0 - 12 hours after the application of the main coat.

9-Consumption

Product	Consumption
AKFIX PRIMER	300 - 500 g/m ²
AKFIX POLYUREA SR 1080	3,0 - 3,2 kg/m ² (Base layer + rough layer)

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

10-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	700 - 800	300 - 600
Solid Content	%	ASTM D 2697	100	100
VOC Content	%	ASTM D 1259	0	0
Color	-	-	Transparent Yellow	Desired RAL Codes

Reaction Parameters

	Unit	Method	Datas
Gel Time	Second	-	2-3
Tack Free Time	Second	-	5- 10

Finished Product Features

Test Name	Unit	Method	Datas
Final Product Structure	-	-	Solid Elastomeric Membrane
Tensile Strength	MPa	ASTM D 638	16-18
Module	MPa	ASTM D 638	100 % elongation ≥ 15
Repeat coating time	hour	-	0-12
Elongation	%	ASTM D 638	125-150
Shore D	-	ASTM D 2240	45 - 50
Tear Resistance	N/mm	ASTM D 624	≥ 50
Taber Abrasion Resistance	mg	EN ISO 5470-1	< 200 (H22, 1000 cycle)
Impact Resistance	-	EN ISO 6272-1	Class III
Adhesion Strength	N/mm ²	ASTM D 4541	Concrete: ≥ 2 Steel: ≥ 6
Anti Slip Classification	-	DIN 51130	R11
UV Resistance Test	-	ASTM G53	no cracking and swelling

Chemical Resistances Per ASTM D543 For Immersion In Fluids Methods:

Chemical Name	Results	Chemical Name	Results
Sulfuric Acid (10%)	5	Potassium Hydroxide (10%)	5
Sulfuric Acid (20%)	4	Potassium Hydroxide (20%)	5
Sulfuric Acid (30%)	1	Sodium Hydroxide (50%)	5
Hydrochloric Acid (10%)	5	Brake Fluid	2
Hydrochloric Acid (20%)	4	Drinking Water (1mg/L chlor)	5
Nitric Acid (10%)	2	Chlorine Pool Water	5
Acetic Acid (10%)	5	Vinegar (5%)	5
Chromic Acid	4	Hydrogen Peroxide (3%)	4
Hydrofluoric Acid (10%)	1	Mineral oil	5
Phosphoric Acid (10%)	5	Hydraulic oil	5
Phosphoric acid (20%)	5	Engine oil	5
Diesel	5	Toluene	2
Gasoline	4	Methanol	5
Kerosene	5	Ethanol (10%)	5
Citric Acid (10%)	5	Aceton	2
Citric Acid (20%)	5	MEK	2

* These tests were done by dipping into chemicals for 6 months.

* 5: RESISTANT 4: RESISTANT. ONLY COLOR CHANGE 3. SWELLING 2: CONDITIONS (SHORT-TERM DISCRIMINATION) 1: NOT RECOMMEND

11-Packaging

Packacking

225 kg drum (A – MDI Prepolymer), 200 kg drum (B - Amine Side)

12-Shelf Life and Storage Conditions

- Polyurea components are moisture sensitive. Therefore, in original, unopened and undamaged packages, it is suitable for 9 months from date of production when stored correctly between 50°F and 86°F.
- Products should be stored in dry and places where not having direct sunlight.

13-Cleaning

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

14-Warning and Suggestions

- AKFIX POLYUREA SR 1080 B component contains corrosive polyamines and component A isocyanates. Follow the instructions in MSDS form before or after use or when a problem is encountered.
- Personal protective equipment and full face mask with appropriate filter should be used during application.
- There must be sufficient air circulation in the application area.
- Give empty barrels to authorized hazardous waste collector companies.

15-Disclaimer

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