Fosroc Polyurea FLM

constructive solutions

Fast setting, pure polyurea elastomeric waterproof coating.

General Information

Fosroc Polyurea FLM is a spray-applied, 100% solids, flexible, two-component, rapid curing pure Polyurea system, designed as a floor protective coating. It combines the advantages of seamless, waterproof coating with very long life cycles and high durability.

Polyurea FLM consists of Fosroc Polyurea FLM Part A ISO and Fosroc Polyurea FLM Part B AMINE and a pigmented colour pot. The system offers excellent surface properties and overall physical properties.

Uses

Protective coating for flooring applications in a wide range of environmental conditions. Typical applications include:

- Industrial floors
- Processing plants
- Food processing areas
- Stadia
- Workshops & production facilities
- Manufacturing plants
- Plant rooms

Note: Anti-slip and other coating properties may be

provided by the introduction of fillers or fibres by modified spray gun. Refer to the Fosroc Polyurea Method Statement, and contact Fosroc for further advice.

Advantages

- Environment friendly - zero VOC
- Excellent chemical resistance, thermal stability and UV Resistance *
- Very fast turn-around time. The coated substrate can be put into service within an hour
- Excellent impact, abrasion and puncture resistance Seamless and monolithic, including day joints Significantly enhances the durability of reinforced concrete
- Low permeability values
- Designed for service temperatures from -30oC to +135oC

*See Limitations

Specification

The protective and/or wateproofing coating shall be Fosroc Polyurea FLM, a 100% solids, flexible, two component,rapid curing pure Polyurea coating system providing high corrosion, abrasion and thermal shock resistance. It shall meet the values under the section " Properties".

Properties

Typical Physical properties @ 23°C

Solids by Volume	:	100%
Volatile Organic Compounds	:	0 g/litre
Viscosity	:	A ISO = 1000 mPas B AMINE < 1500 mPas
Density at 25°C	:	1.01 g/ml
Tensile Strength ASTM D-412	:	> 16 N/mm^2
Modulus 100 / 200 / 300 % D412	:	9 / 12 / 15 N/mm^2
Tear strength ASTM D624C	:	85±5 (N/mm)
Elongation ASTM D-412	:	>300%
Shore -D ASTM D2240	:	47
Abrasion (1kg, H22 wheels) ASTM D4060	:	29 mg/1000 cycles
Abrasion (1kg, CS17 wheels) DIN EN ISO 5470	:	≤ 0.02 mg/ 1000cycles
Service temperature ASTM D4060	:	-30°C ± 135°C
Colour Other colours available to order	:	RAL 7005 Grey

Chemical Resistance

(ASTM D3912, 72 hours immersion)

Chemical	Result	Max service temp.
Hydraulic Oil	R	50°C
Motor Oil	R-DIS	50°C
Diesel Fuel	R	25°C
Petrol	R-DIS	25°C
Skydrol		NR
Sodium Hydroxide (50%)	R	50°C

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Ammonia (0.880) 33%	R 2	5°C
Sugar solution conc.	R	50°C
Bleach (5%)	R-DIS	50°C
Butanol	R-C	25°C
Lactic Acid (20%)	R	50°C
Phosphoric Acid (10%)	R	50°C
Hydrochloric Acid (20%)	R-C	50°C
Nitric Acid (30%)	R-C	25°C
Sulphuric Acid (10%)	R	50°C

R : Recommended

R-DIS : Recommended – Discolouration only

R-C : Recommended – Conditional; discolouration and/or slight softening or swelling – wash down within one hour to avoid effects

NR : Not Recommended

Note: The chemical resistance recommendations given above apply to spillage and secondary containment applications with up to 72 hours contact duration; for any other requirements / chemicals contact Fosroc for further advice.

Clarification of property values

The typical physical properties given above are derived from independent testing of Fosroc Polyurea FLM spray applied in accordance with the Fosroc Polyurea Method Statement, in controlled laboratory environment. Results derived from testing field-applied samples may vary.

Processing parameters

Block Temperature	:	+70°C to +80°C
Hose Temperature	:	+70°C to +80°C
Volume ratio	:	1:1
Pressure	:	120 - 150 bar
Gel Time	:	5 - 10 sec
Walkable	:	2 minutes
Trafficable (light duty)	:	15 - 20 minutes
Trafficable (medium duty)	:	24 hours
Trafficable (heavy duty)	:	7 days

Instructions for Use

Refer to Application section below and Fosroc Polyurea Method statement for further detail.

Surface preparation

All surfaces should be clean, dry and free from contamination.

Concrete

Dry abrasive blasting, wet abrasive blasting, vacuum-assisted abrasive blasting, and centrifugal shot blasting, as described in ASTM D 4259, must be used to remove contaminants, laitance, and weak concrete, to expose blow holes, and to produce a sound concrete surface with adequate profile and surface porosity.

Blow holes

All blow holes and minor surface imperfections shall be filled with Nitomortar FC prior to application of Primer. See separate product data sheet. Nitomortar FC should be allowed to cure for 12 - 18 hours at 20°C, Lightly abrade the surface and wipe with a cloth lightly weetted with Fosroc Equipment Cleaner and allowed to dry prior to priming.

Steel

The steel must be of first class quality and must not have been allowed to rust more than corresponding to grade B of BS EN ISO 8501-1:2007. Any laminations must be removed.

Blast cleaning to Sa 2½. (ISO 8501-1:2007). Roughness: using abrasives suitable to achieve a coarse surface of Grade Medium G (50-85…m, Ry5) (BS EN ISO 8503- 2:2001).

All welding seams must have a surface finish which ensures that the quality of the paint system will be maintained. All sharp edges must be removed or rounded off to ensure that the specified film thickness can be built-up on all surfaces. The radius of the rounding must be minimum 2 mm.

Priming

Following correct preparation, the substrate must be primed. Fosroc Primer 195 should be used.

For concrete, suggested application rate is 2.5 - 4 m2 per litre; dependant on concrete porosity. On very porous concrete higher application rates may be required. Consult Fosroc for further recommendations.

For steel substrates, a suggested rate of 6.5 m2 per litre is recommended.

Add the entire content of Part B into Part A and mix with a slow speed drill and paddle for 3 minutes until homogeneous.

Apply by brush, roller or squeegee to a uniform thickness. Initial spreading may be caried out by spray but a final rolling shold be carried out to ensure full wetting and even distribution of the primer.

A broadcast of 0.2 - 0.5 mm kiln-dried sand onto the uncured primer should be carried out to ensure optimum adhesion properties. Excess sand shold be removed prior to application of the Fosroc Polyurea FLM.

The primer shall be allowed to become touch-dry prior to application of Fosroc Polyurea FLM. Typically 1.5 hours at 20°C, 2 hours at 10°C.

Pot life Primer 195: 30 minutes at 25°C, 60 minutes at 15°C.

Application

Spray Equipment:

A high pressure spray proportioning machine/spray gun for plural heated polyurea components such as those manufactured by GlasCraft or Graco should be used for this product.

A list of appropriate equipment is listed in the Fosroc Polyurea Method Statement.

Application Method

Add the pigment paste, to the Part B AMINE drum and mix with a slow speed 300-400rpm bunghole mixer for 20 minutes until homogeneous.

If pigmented material is stored it should be mixed with a bunghole mixer for 20 minutes prior to use.

Avoid moisture contamination of bulk material, seal drums for storage. Do not add solvent.

Heat the spray lines to 70 – 80°C.

Apply the Fosroc Polyurea FLM at the specified thickness (1.5 – 3.0 mm) to the primed substrate in a cross hatch pattern with a minimum of two alternate directional passes.

If non slip surfaces are required consult Fosroc Polyurea Method Statement.

Day joints : when overcoating material applied for more than 12 hours. Remove any dirt / dust contamination. Wipe surface of cured coating with NEP (N-ethyl pyrrolidone).

Apply Polyurea when surface is dry, typically 30 minutes with a 100mm overlap.

Due to the fast cure rate of Fosroc Polyurea FLM overspray can only be removed mechanically.

Estimating

Supply

Fosroc Polyurea FLM Part A ISO component
: 200 ltr drums

Fosroc Polyurea FLM Part B AMINE component
: 200 ltr drums
: 195 ltr drums + separate colour pack

Fosroc Primer 195 Part A Base
: 12.5kg in 25 ltr pail

Fosroc Primer 195 Part B Hardener
: 7.5kg in 10 ltr pail

Fosroc Equipment Cleaner : 5 litre

Coverage

Fosroc Polyurea FLM : 1.5 – 3.0 ltrs per m^2 (1.5 - 3.0 mm) depending on specification

Fosroc Primer 195 : Concrete : 2.5 - 4 m^2/ltr
: Steel : 6.5m^2 / litre

Storage

Fosroc Polyurea FLM and Primer 195 have a shelf life of 12 months if kept in a dry, air conditioned store between +5°C and +30°C in the original unopened containers.

Limitations

Fosroc Polyurea FLM should not be applied over existing coatings.

Fosroc Polyurea FLM is not colour stable when exposed to sunlight and UV. This will not affect the cured physical properties of the product. If longterm aesthetics regarding colour stability is of critical importance, contact Fosroc for further advice.

Application should not be undertaken by the methods described if the temperature is below 5°C or is 5°C and falling or where the prevailing relative humidity exceeds 90% or the dew point is less than 3oC above the surface temperature. Consult Fosroc if these conditions are not met for specific advice.

Precautions

Health and Safety

For further information refer to appropriate Product Safety Data Sheet.

Flash Point

Fosroc Polyurea FLM and Primer 195 are nonflammable.

Flash Point Fosroc Equipment Cleaner: 44°C

Important note :

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products whether or not in accordance with any advice, specification, recommendation or information given by it.

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