DRIZORO® Construction Products

MAXURETHANE® FLEX

SOLVENT-FREE FLEXIBLE POLYURETHANE MEMBRANE FOR WATERPROOFING AND PROTECTION OF CONCRETE

CE

DESCRIPTION

MAXURETHANE® FLEX is a two-component, solvent-free, flexible and waterproof polyurethane membrane suitable for long-term protection of concrete and metal substrates.

APPLICATION FIELDS

- Waterproofing and protection of drinking water reservoirs.
- Waterproofing and protection of structures for water retention: dams, canals, pipelines, swimming pools, tanks, fountains, etc.
- Waterproofing and chemical protection of concrete in water treatment and purification plants: digesters, decanters, etc.
- Waterproofing and exterior protection against aggressive water and soil salts in foundations, retaining walls, pipes and other underground structures.
- Waterproofing of wet areas such as bathrooms, kitchens, rest-rooms, etc.
- Waterproofing of terraces and balconies under ceramic pavement.
- Waterproofing of jardinières and areas exposed to roots.
- Coating and protection of metal tanks or silos and steel pipes.

ADVANTAGES

- Non-toxic, suitable for contact with potable water.
- Full flexibility and good elasticity, withstands thermal movements and vibrations of the substrate.
- Forms a continuous waterproofing membrane without joints or connections, fitting to the geometry of substrate.
- Very good adhesion on concrete and metal surfaces.
- Very good chemical resistance against sewage, marine water, oils, petrols, both acid and alkalies diluted, etc.
- Resistant to permanent immersion in a temperature range between -20°C and +55°C.
- High wear and abrasion resistance.
- Unalterable in permanent immersion applications, long-lasting protection without maintenance.
- Easy to apply with a brush, roller or airless spray.
- Solvent-free and non-flammable, suitable for poor ventilated working areas.

APPLICATION INSTRUCTIONS

Surface preparation

Surface must be sound, completely dry and clean, free from dirt, remains of paints, gypsum,

efflorescence, greases, oils, as well as de-moulding agents, curing agents or any existing coating which could affect the adhesion. For cleaning and preparing the surface, use sandblasting or high-pressure water; aggressive mechanical means are not recommended.
Prior to application the surface moisture content must not exceed 5 %.

Wall/floor joints and wall/wall joints must be sealed properly as concave corners with ***MAXREST®*** (Technical Bulletin No. 2) or ***MAXPLUG®*** (Technical Bulletin No. 4).

Surface damages such as defects, cavities, honeycombs, peelings should be repaired and levelled with the structural repair mortar ***MAXREST®*** .

Reinforcements must be cleaned of rust and scale and then, coated with the oxide converter and anti-corrosive protection ***MAXREST® PASSIVE*** (Technical Bulletin No. 12). All steel surfaces must be dry and degreased, free of dust. Clean any rust preferably by dry sandblasting or shotblasting.

Expansion joints and cracks subject to movement, once repaired and cleaned, should be treated with a suitable sealant from the ***MAXFLEX®*** range.

Applications on porous substrates, prime surface with 0,2-0,3 kg/m^2 of ***MAXEPOX® PRIMER*** (Technical Bulletin No. 174). Wait until primer is fully dry to touch, 12-24 hours approximately, before applying ***MAXURETHANE® FLEX***.

On low-porosity, non-absorbent and/or polished substrates such as metal, vitrified tiles, ceramic tiles, mosaic tiles, etc., use ***MAXPRIMER® PUR*** (Technical Bulletin No. 195) as a primer.

Mixing
MAXURETHANE® FLEX is supplied in pre-weighed sets. The hardener, component B, is fully poured into the resin, component A. To make sure the proper full reaction between the two components, scrape the sides and bottom of both packaging to ensure complete mixing.

The mixture can be done manually or better using a low-speed drill (300-400 rpm maximum), until achieving a homogeneous product in colour and appearance. Avoid producing too much air while mixing the product.

Pot life for application is only 20-30 minutes at 20°C, apply immediately after mixing.

Application
Apply ***MAXURETHANE® FLEX*** using a short-haired roller or solvent-resistant brush, pressing lightly onto the substrate. When applying by airless spraying, it can be diluted with the minimum amount of ***MAXSOLVENT®*** necessary to allow spraying, if required.

Waterproofing and protection of concrete, mortar, metal and other substrates in general: Apply ***MAXURETHANE® FLEX*** homogeneously in two perpendicular coats with a coverage of 0,3-0,5 kg/m^2 per coat, to achieve a total consumption of 0,6-0,8 kg/m^2. Allow first coat to dry between 6 and 12 hours depending on environmental and ventilation conditions. For vertical surfaces, apply in three coats achieving the same total consumption.

To improve the adhesion of ceramic adhesive mortars, dust dry silica sand onto the final coat of ***MAXURETHANE® FLEX*** while it is still fresh.

Concrete joints and other singular points: On wall/slab joints, cracks, concrete joints and other critical points subject to movements, a first coat with 0,3 kg/m^2 of ***MAXURETHANE® FLEX*** will be applied and then, the glass fibre veil ***DRIZORO® VEIL*** of 20 cm wide will be spread and completely embedded on this fresh coat. Once it dries, apply a second coat of ***MAXURETHANE® FLEX*** with 0,3 kg/m^2.

Waterproofing exposed to UV radiation: Once the final coat of ***MAXURETHANE® FLEX*** has cured for at least 24 hours, apply ***MAXURETHANE® 2C*** (Technical Bulletin No. 87) as a protective barrier against UV rays.

Application conditions
Do not apply if rainfall, dew, condensation or water contact is expected within the first 24 hours after application. Do not apply below 5°C or when such temperatures are expected within 24 hours. Do not apply on frozen surfaces.

Do not apply above 85% of relative humidity. Surface and ambient temperature must be at least 3°C higher than dew point. Measure the relative humidity and dew point for applications carried out in proximities of marine environment.

Curing
Allow a minimum curing time of 7 days at 20°C and 50 % R.H. before putting into service, performance of flooding tests or covering with tile mortars. Lower temperature or higher R.H. increase the curing time.

MAXURETHANE® FLEX

Cleaning
Use ***MAXSOLVENT***® for cleaning tools and equipments immediately after use. Once it cures, it can only be removed by mechanical means.

CONSUMPTION

Total coverage is estimated between 0,6-1,0 kg/m^2, applied in two or three coats. Consumption may vary depending on porosity, surface conditions and application method. A preliminary test on-site will determine consumption exactly.

IMPORTANT INDICATIONS

- Do not apply on substrates subject to negative hydrostatic pressure.
- Prior to application the surface moisture content must not exceed 5 %. Allow enough time for substrate to dry after rain, dew or other inclement weather and after cleaning surface.
- Allow 28 days curing time for new concrete and mortar before application.
- Do not apply when relative humidity exceeds 85 %, as this may result in poor curing.
- Do not add non-specified solvents or other compounds to ***MAXURETHANE*** ® ***FLEX***.
- Avoid condensation, humidity, and contact with water for at least 72 hours after application.
- For other use not specified in this Technical Bulletin or further information, consult our Technical Department.

PACKAGING

MAXURETHANE ® ***FLEX*** is supplied in pre-weighed 25 kg set. It is available in grey, white, green and red colour.

STORAGE

Twelve months in its original unopened packaging, in a dry and covered place protected from frost and direct sunlight, with temperatures between 5°C and 35°C. Storage at higher temperatures may result in an increase of viscosity.

SAFETY AND HEALTH

MAXURETHANE ® ***FLEX*** is a non-toxic product, but skin and eye contact must be avoided. Safety goggles and protective gloves should be used during application. In case of skin contact, wash affected areas with soap and water. In case of eye contact rinse thoroughly with clean water but do not rub.

Seek medical attention if irritation persists. Request Safety Data Sheet of ***MAXURETHANE*** ® ***FLEX*** for further information.

Disposal of the product and its empty packaging must be made by the final user and according to official regulation.

TECHNICAL DATA

Product characteristics	
CE Marking, EN 1504-2 Description. Polyurethane coating for protection against ingress of water and CO_2. Coating (C). Principles / Methods. Protection against ingress with coating (Principle 1-PI / 1.3), Moisture control with coating (Principle 2-MC / 2.2)	
Coating color	Green, red, white and grey color
Ratio components A:B	4:1
Solids content A + B (%)	100
Density A+B (kg/l)	1,25 ± 0,1
Application and curing conditions	
Minimum temperature / Maximum relative humidity for application, (°C / %)	> 5 / < 85
Pot-life at 20°C (min)	20 - 30
Dry to touch, 20°C (hours)	6 - 12
Final curing time, 20°C (days)	7
Cured product characteristics	
Liquid water permeability, w ($kg/m^2 \cdot h^{0,5}$) EN-1062-3	< 0,01 Low permeability, Class III, W_3
Anti-carbonation barrier, S_d (m) EN-1062/6	94
Adhesion on concrete (MPa), EN-1542	3,4
Tensile strength (MPa), ASTM D-412	14,7
Elongation at break (%), ASTM D-412	84
Crack bridging ability UNE-EN 1062-7. Classification according to UNE-EN 1504-2	> 1,25 mm Class A4
Water vapor transmission rate (v) UNE EN-ISO 7783-2:1999; (Sd = 2,3 m)	Low transmission, Class III
Methane permeability ISO 15105-1 ml CH_4 / (m^2 day)	31,3
Ozone resistance UNE EN-ISO 1431-1	No cracks observed
Flash point	Non-flammable
Suitability for contact with potable water European Directive 2020/2184 and Spanish RD 03/2023	Approved
Suitability for contact with potable water British Standards BS-6920	Approved
Suitability for contact with food. European Regulation 10/2011. RD 866/2008 and RD 847/2011. Simulants A, B, D1 and D2. Global migration UNE-EN 1186-3 and specific migration UNE-EN 13130-1.	Fulfils the requirements
Consumption* per coat/ total consumption (kg/m^2)	0,3 - 0,4 / 0,6 - 0,8

*Consumption may vary depending on porosity, surface conditions and application method. A preliminary test on-site will determine consumption exactly.

Group of chemical compounds	Liquid used for testing	Results after 28 days as reduction in shore hardness (%) *
1.Gasoline	47,5 % Toluene 30,4 % Iso-octane 17,1 % n-heptano 3 % Metanol 2 % Butanol	5
9. Aqueous organic acids up to 10%.	Acetic acid (10%)	6
10. Inorganic acids up to 20%, and hydrolyzing acid salts in aqueous solution (pH<6) except acid and oxidant acids and their salts.	Sulphuric acid (20%)	8
11. Inorganic bases, and their hydrolyzing alkalis salts in aqueous solution (pH>8) except ammonium solutions and oxidant salts.	Sodium Hydroxide (20%)	5

*Shore hardness reduction should be < 50 % to meet requirements.

GUARANTEE

The information contained in this leaflet is based on our experience and technical knowledge, obtained through laboratory testing and from bibliographic material. ***DRIZORO®, S.A.U.*** reserves the right to introduce changes without prior notice. Any use of this data beyond the purposes expressly specified in the leaflet will not be the Company's responsibility unless authorised by us. We shall not accept responsibility exceeding the value of the purchased product. The data shown on consumptions, measurement and yields are for guidance only and based on our experience. The data is subject to variation due to the specific atmospheric and jobsite conditions so reasonable variations from the data may be experienced. In order to know the real data, a test on the jobsite must be done, and to be carried out under the client responsibility. We shall not accept responsibility exceeding the value of the purchased product. For any other doubt, consult our Technical Department. This version of bulletin replaces the previous one.

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