DRIZORO® Construction Products

MAXELASTIC® POLY

CE

HOT SPRAYED 100 % PURE POLYUREA MEMBRANE FOR WATERPROOFING AND PROTECTION OF CONCRETE

DESCRIPTION

MAXELASTIC® ***POLY*** is a hot-applied, two-component, solvent-free, 100% pure polyurea of high reactivity suitable for waterproofing and protection of concrete.

Once applied, it provides a high performance continuous elastomeric membrane for waterproofing of roofs, terraces, bridge decks, underground structures, etc.

Suitable for the waterproofing of drinking-water reservoirs.

MAXELASTIC® ***POLY*** has certificates of European Technical Evaluation for use in waterproofing of roofs (ETAG 005) and waterproofing of bridge decks (ETAG 033).

APPLICATION FIELDS

- Waterproofing and protection of all types of roofs, green roofs, terraces, balconies, etc.
- Waterproofing of bridge decks, retaining walls and foundations, parking decks, etc.
- Waterproofing of channels, drinking water reservoirs, wastewater treatment plants and other water retaining structures, etc.
- Protection of both polyurethane and polystyrene foam thermal insulation layers.
- Protective coating on drainage boxes, silos, retaining tanks or areas exposed to spillages and spattering of chemical compounds.

ADVANTAGES

- Forms a seamless continuous membrane.
- Non-toxic, suitable for contact with drinking water.
- Very good chemical resistance to water, seawater, wastewater, fuels, grease and oils, de-icing salts, diluted alkali, and acid solutions, etc.
- Very good elasticity, tear strength, and abrasion resistance.
- Very good adhesion on cement surfaces, concrete, fibre-cement panels, polyurethane, wood, and metal.
- Withstands high temperatures, up to 180°C (occasionally and short time exposure).
- High yields by spraying means.

APPLICATION INSTRUCTIONS

Surface preparation

Surface to be coated must be structurally sound, firm, without cement laitance, etc. It must be dry, clean, and free of paints, coatings, efflorescence, loose particles, grease, oils, curing agents, form release agents, dust, gypsum, organic growth, or any other contaminants that may affect to adhesion. Surface moisture content should not exceed 5 %. For cleaning substrate, preferably in case of the smooth and/or poorly absorbent substrates, use sand blasting or high-pressure water cleaning methods, not being desirable aggressive mechanical means.

Concrete and cement-based substrate

The substrate must be solid and in good condition, with no loose or loose surfaces, surface grout, and as uniform as possible. The concrete tensile strength of the substrate must exceed 1.5 N/mm² (measured by pull-off test). It is recommended to achieve a surface preparation profile between CSP 4 and CSP 6, according to the criteria of the *International Concrete Repair Institute (ICRI).*

Before applying ***MAXELASTIC®*** ***POLY*** all voids, holes, honeycombs, cavities, cold joints, tie holes, and static cracks without movement, once opened and routed to a minimum depth of 2 cm, must be repaired with ***MAXREST®*** (Technical Bulletin No. 2). Rebars and other metal elements exposed during the substrate preparation should be cleaned and passivated with ***MAXREST®*** ***PASSIVE*** (Technical Bulletin No. 12), while non-structural and surface iron elements must be cut to a depth of at least 2 cm and then covered with ***MAXREST®***.

Expansion joints or cracks subject to movements once opened up and clean, should be treated with a suitable elastomeric sealant from ***MAXFLEX®*** range.

Prime and seal the porosity of the concrete substrate with solvent-free epoxy primer ***MAXEPOX® PRIMER***, or water-based epoxy primer ***MAXEPOX® PRIMER-W***, or solvent-free polyurethane primer ***MAXURETHANE® PRIMER*** o ***MAXELASTIC® POLY PRIMER*** with a coat of 0,2 to 0,3 kg/m^2 depending on substrate porosity. Very porous substrates may require additional coats to get a perfectly sealed surface and close porosity. Primer must be perfectly dry, between 24-48 hours depending on temperature conditions

Metal substrates
On metal surface use as primers ***MAXEPOX® PRIMER-W*** or ***MAXEPOX® AC*** of about 0,25–0,30 kg/m^2. Primer must be perfectly dry, between 24-48 hours depending on temperature conditions.

Application
MAXELASTIC® POLY is supplied ready to use by a suitable spraying means. Thus, the working temperatures for component A (Isocyanate -red drum-) and component B (Amine -blue drum-) are 75°C and 70°C, respectively. Additionally, the hoses must have a working temperature of at least 70°C. When opening the drums, stir slightly mechanically the component B for a homogeneous mixture of the components.

Apply two coats in perpendicular direction with a recommended thickness of about 1,0 mm per coat, i.e., 2,0 mm per total application. Observe a waiting time of about 5 minutes between coats to avoid an excessive heat accumulation by its exothermic curing.

It is advisable for the first coat -and for checking purposes- to apply the same with the lowest possible consumption. The purpose is to check problems due to the presence of moisture in substrate and/or areas without priming, which may lead pinholes or blisters on the surface treated with polyurea. Once checked, the remainder coat should be applied by its usual consumption.

For outdoor applications, i.e., exposed to UV-rays, once ***MAXELASTIC® POLY*** has cured 24 hours at 20°C, apply as UV-barrier topcoat, one or two coats of aliphatic polyurea ***MAXELASTIC® POLY-F*** or the aliphatic polyurethanes ***MAXELASTIC® PUR-E, MAXELASTIC® PUR-F*** or ***MAXURETHANE® 2C*** depending on type of traffic expected or the slip resistance desired.

Application conditions
Substrate and ambient application temperature is from 10°C to 40°C. Do not apply with substrate and ambient temperature is at or below 10°C, or when such temperatures are expected to fall below 10°C within 24 hours after application. Do not apply to frozen or frost-covered surfaces.

Substrate and ambient temperature must be at least 3°C higher than dew point. Do not apply with R.H. higher than 85 %. Measure the relative humidity and dew point before applying the product for applications carried out in proximities of marine environment.

Curing
Allow a minimum curing time of 12 hours 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.

CONSUMPTION

Estimated consumption for ***MAXELASTIC® POLY*** is 1,0 kg/m^2 per coat with an average thickness of about 1 mm per coat, i.e., a total consumption of 2,0 kg/m^2 and 2,0 mm thickness approximately, applied in two coats. These figures are for guidance and may vary depending on porosity, texture, substrate conditions and application method. Perform a preliminary test on-site to ascertain the total consumption exactly.

IMPORTANT INDICATIONS

- Surface moisture content must be below 5 %. Allow substrate to dry enough after rain, water contact, damp, dew, condensation, etc, as well as after washing surface.
- Do not apply on substrates subject to negative hydrostatic pressure.
- When applied on concrete surfaces, the tensile strength of the substrate must exceed 1.5 N/mm² (measured by pull-off test).
- For other uses not specified on this Technical Bulletin or further additional, consult the Technical Department.

PACKAGING

MAXELASTIC® POLY is supplied in pre-weighed two-component sets of 450 kg. Component A and B in 225 kg drum, respectively. It is supplied in standard grey colour. Red and black colour by special request.

STORAGE

Twelve months in its unopened and undamaged original sealed packaging. Store in a cool, dry, and covered place, protected from moisture, frost and direct sunlight, with temperatures between 5°C and 35°C. Storage at temperatures above 35°C may lead to an increase of viscosity.

SAFETY AND HEALTH

MAXELASTIC® POLY is not a toxic product but direct contact with skin and eyes must be avoided. Use proper clothes, rubber gloves and safety goggles during application. In case of skin contact, wash affected area with soap and water. In case of eye contact, rinse immediately thoroughly with clean water but do not rib. If the irritation persists, seek medical assistance.

Consult the Material Safety Data Sheet for ***MAXELASTIC® POLY***.

Disposal of the product and its packaging should be carried out according to the current official regulations and it is the responsibility of the final user of the product.

TECHNICAL DATA

Product characteristics *CE marking. (ETAG-005) ETE 15/0111* *Description and Uses:* Liquid applied roof waterproofing kit. Specific stipulations for kits based on polyurethane *CE marking. (ETAG-033) ETE 17/0953* *Description and Uses:* Liquid applied bridge deck waterproofing kit.		
	Component A (Isocyanate) Drum Red	Component B (Amine) Drum Blue
Density, (g/cm^3)	1,1 ± 0,1	1,09 ± 0,1
Viscosity, UNE-EN ISO 2555, (cps)	600	400
Solids content, (%)	100	
Mixing ratio for A:B by weight (kg:kg) / by volume (l:l)	100:102 / 100:100	
Application and curing conditions		
Temperature / Relative Humidity for substrate and ambient, (ºC / %)	10-40 / <85	
Drying time to touch at 20°C, (s)	4 – 6	
Waiting time between coats at 20°C, (min)	>5	
Curing time at 20°C, (h)	12	
Working temperature/pressure for spraying means, (°C / Bar)	Component A: 75°C Component B: 70°C 70°C / 185 bar	
Cured product characteristics		
Density, (g/cm^3)	1,1± 0,1	
Tensile strength at break, UNE-EN ISO 527-3 (MPa)	23	
Elongation at break, ISO 527 (%)	350	
Falling-weight test, UNE-EN ISO 6272-1	Class II > 10 Nm (1.000 g) Class II > 20 Nm (2.000 g)	
Resistance to fatigue movement, EOTA TR-008	Competent in 1.000 cycles	
Flexural strength at 5% / 10% of deflection , DIN ASTM D790	6,3 / 6,9	
Tear strength, DIN 53 5115 (N/mm)	58	
Adhesion on concrete with primer / steel without primer, (N/mm^2)	2,5 / 6,5	
Abrasion resistance, UNE-EN ISO 5470-1 (mg)	133	
Hardness, DIN 53 505 (Shore A / Shore D)	>90 / >50	
Water vapour permeability, UNE-EN 1931, μ	2.279	
Water-vapour transmission rate, UNE-EN ISO 7783 (g/m^2·d) Thickness of equivalent air coat	14 0,8 m – Class I: Permeable	
Water liquid permeability, (kg/m^{2}h^{0,5})	w < 0,1	
Permeability to CO_2, EN 1062-6.	Sd > 50 m	
Permeability to methane, DIN 53 380 (cm^{3}mm/(m)^2 24h	50	
Classification according to ETAG 005		
Adhesion for the system (kPa)	>50	
Working life	W3 (25 years)	
Climatic zones	S	
Imposed loads	P1 (Low) up to P4 (Special)	
Roof slope	S1 (<5%) to S4 (>30%)	
Win load resistance	>50 kPa	
Lowest / Highest surface temperature	TL3 (-20°C) / TH4 (90°C)	
Classification using data from external fire exposure, UNE-EN 13501-5	Broof (t1)	
Reaction to fire	Euroclass E	
Emission of dangerous substances	No VOC, no solvent	
Suitability for contact with potable water European Directive 2020/ 2184 and Spanish RD 03/ 2023	Approved	

Thickness / Consumption*	
Minimum thickness according to ETAG 005, (mm)	1,4
Consumption per coat / total application, (kg/m^2)	1,0,/ 2,0
Thickness per coat / total application, (mm)	1,0 / 2,0

* These figures are for guidance only and may vary depending on porosity, texture, substrate conditions and application method. Perform a preliminary test on-site to ascertain the total consumption exactly.

Resistance to severe chemical attack UNE-EN 13529:2005		
Class I: 3 days non-pressure	Initial Shore D	Final Shore D
H_2SO_4 , 20%	53	50
Oil motor		49
Sodium Chloride, NaCl , 20%		53
Lye		47
NaOH at 20%		51
Diesel oil		50

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. These data are 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 it will 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.

DRIZORO Construction Products

DRIZORO, S.A.U.
C/ Primavera 50-52 Parque Industrial Las Monjas
28850 TORREJÓN DE ARDOZ – MADRID (SPAIN)
Tel. (+34) 91 676 66 76 - (+34) 91 677 61 75 Fax. (+34) 91 675 78 13
e-mail: info@drizoro.com Web site: drizoro.com