MAXURETHANE® FLOOR

HIGH-PERFORMANCE, SOLVENT-FREE, FLEXIBLE, POLYURETHANE RESIN AS FLUID MORTAR, TROWELABLE MORTAR AND COATING FOR PROTECTION AND FINISH OF FLOORS

CE

DESCRIPTION

MAXURETHANE® FLOOR is a two-component, solvent-free, pigmented flexible polyurethane binder designed to provide a wide range of flooring systems with high mechanical and chemical properties, for protection and decorative finish of concrete pavements and cement mortars.
MAXURETHANE® FLOOR can be applied directly as a sealer coating or mixed with controlled silica aggregates, to obtain fluid mortars, trowelable mortars or anti-slip broadcast multilayer system.

APPLICATION FIELDS

- Continuous fluid system with high mechanical and chemical properties on concrete floors at garages, warehouses, sport centres, etc.
- Chemical protection and abrasion resistant coating suitable for pharmaceutical and chemical industry, manufacturing facilities, parking, laboratories, kitchens, etc.
- High performance polyurethane coating with excellent decorative finishing in malls, shopping centres, leisure centres, conference rooms, office buildings, exhibition halls, etc.
- Anti-slip broadcast multilayer system with silica aggregates: wet processing areas, steps, access ramps, truck docks, loading areas, mechanical room, cold-storage chambers, maintenance areas, etc.
- Flexible polyurethane system for indoor and outdoor car parking decks.

ADVANTAGES

- Very good chemical resistance against a wide range of compounds: oils and greases, petrol, acid and alkali solutions, solvents, salts, etc.
- Excellent flexibility and resistance to low temperatures, accommodates expansion of the substrate without tension. Protects against freeze-thaw cycles.
- High abrasion and wearing resistance. Suitable for heavy traffic and industrial areas.
- Suitable for contact with food.
- Excellent adhesion on concrete and cement mortar substrates.
- Provides a continuous, seamless, uniform and compact surface, with anti-dust finish. Easy cleaning and maintenance.
- Wide range of possible applications: multilayered systems, fluid mortars, trowelable mortars and top-coatings with different colours and textures.
- Fast curing and putting-into service.
- Environmentally friendly: non-toxic, non-flammable and solvent-free product. Suitable for poor ventilated areas.

APPLICATION INSTRUCTIONS

Surface preparation

Surface must be structurally sound, firm, without cement laitance, as uniform as possible. The minimum tensile strength of the substrate must be 1 N/mm². To prepare the substrate, preferably on smooth and/or low-absorbent surfaces, use mechanical SCARIFICATION by milling or shot blasting. Aggressive mechanical or chemical means are not recommended until an open-pore surface texture is achieved. It must be clean and free of paints, coatings, efflorescence, loose particles, grease, oils, curing agents, form release agents, dust, gypsum plasters, organic growth or any other contaminants that may affect the adhesion.
Surface moisture content should not exceed 5 %. Do not apply on substrates subject to rising damp or negative water pressure.

Voids, holes, cold joints, and static cracks or any others defects deeper than 10 mm, once opened and routed must be repaired with patching mortar ***MAXROAD***® (Technical Bulletin No. 27).

Apply a coat of ***MAXEPOX***® ***PRIMER*** (Technical Bulletin No. 174) with an average consumption of 0,25-0,30 kg/m², depending on the porosity of the substrate. If the substrate has some residual moisture, apply a coat of ***MAXEPOX***® ***PRIMER -W*** water-based epoxy primer (Technical Bulletin No. 372) with an average consumption of 0,20-0,30 kg/m². In this case, before applying ***MAXURETHANE***® ***FLOOR***, it is essential that the ***MAXEPOX***® ***PRIMER -W*** film is completely dry, which will take place 12-24 hours after application, depending on the ambient temperature and humidity.

Mixing

MAXURETHANE® ***FLOOR*** is supplied as a pre-weighed two-component set. Premix the components separately, and then pour fully the hardener component B, on the resin component A. Mix mechanically by low-speed drill (300-400 rpm. maximum) fitted with a mixer suitable for liquids, about 2-3 minutes until achieving a homogeneous product in colour and appearance. Do not mix for prolonged period nor use high-speed mixer, which may heat the mixture or introduce air bubbles.

Pot life before application at 20°C is 15 minutes. This time is greatly reduced with higher temperatures.

To prepare a fluid mortar, pour the mixed binder (A+B) into a clean container, and then add the dry and clean silica sand ***DRIZORO***® ***SILICA 0204***, while mixing well until achieving a homogeneous mortar in colour and appearance.

Application

Pure sealer coating:
On very low or non-porosity substrates will not be necessary the use of primer. Apply directly ***MAXURETHANE***® ***FLOOR*** (components A+B) using a brush, short-piled roller or air-less spray equipment in two successive coats, with a minimum time lapse of 8 hours and maximum of 16 hours.

Anti-slip broadcast multilayer system:
Once the primer is dry, apply a first pure coat by brush, short-piled roller or air-less spray equipment of ***MAXURETHANE***® ***FLOOR*** (components A+B), and while it is still fresh, broadcast silica sand ***DRIZORO***® ***SILICA 0204*** or ***DRIZORO***® ***SICLICA 0308*** depending on roughness desired, with an estimated coverage of 1,0-1,5 kg/m². Once it is dry, i.e., after 24 hours, sweep and vacuum surface to remove excess of sand, and apply a second pure coat of ***MAXURETHANE***® ***FLOOR*** (components A+B) as topcoat.

Fluid mortar (1-2 mm thickness):
Once the primer is dry, apply by toothed trowel ***MAXURETHANE***® ***FLOOR*** mixed with ***DRIZORO***® ***SILICA 0204*** with proportion 1:1-0,5 in a layer up to 2 mm maximum thickness. Before material begins to set, from 15 min, use a spiked roller to obtain an optimum finish and remove possible air bubbles on surface.

Trowelable mortar:
Once the primer is dry, apply evenly by metal trowel ***MAXURETHANE***® ***FLOOR*** mixed with ***DRIZORO***® ***SILICA*** to the desired thickness in layers between 3 to 10 mm maximum. Finish with finishing trowel.

Application conditions

The optimum working temperature is between 5°C and 30°C. Do not apply with substrate and/or ambient temperature is at or below 5°C, or when are expected within 24 h after application. Ambient and surface temperature must be at least 3°C higher than dew point.
Do not apply if rain, water contact, condensation, dampness and dew is expected within the first 24 hours after application.
Do not apply with R.H. higher than 85 %. Measure the relative humidity and dew point before application.
With low temperatures, high humidity levels or both, use dry and warm air in order to get the suitable conditions, such as with an electric powered air blower system.
Temperatures above 30°C lead a quick-setting between components and heat production, so the pot life is greatly reduced.

Curing
Allow ***MAXURETHANE® FLOOR*** to cure at least 1 day for pedestrian traffic and 4 days for heavy traffic, at 20°C and 50 % R.H. Applications at lower temperatures, high humidity and/or poor ventilation conditions require longer curing time.

Cleaning
All mixing and application tools must be cleaned immediately with ***MAXURETHANE® SOLVENT*** after use. Once product cures, this can only be removed by mechanical means.

CONSUMPTION

Pure sealer coating:
Estimated consumption of ***MAXURETHANE® FLOOR*** is 0,25-0,30 kg/m^2 per coat (with total consumption of 0,5-0,6 kg/m^2 in two coats).

Anti-slip broadcast multilayer system:
Estimated consumption of ***MAXURETHANE® FLOOR*** is 0,5-0,6 kg/m^2 per coat (with a total consumption of 1,0-1,2 kg/m^2 in two coats) and about 1,0-1,5 kg/m^2 of ***DRIZORO® SILICA***.

Fluid mortar:
Estimated consumption of mortar is 1,6 kg/m^2·mm thickness (0,8 kg/m^2·mm of ***MAXURETHANE® FLOOR A+B*** and 0,8 kg/m^2·mm of ***DRIZORO SILICA 0204*** if proportion is 1:1). Maximum thickness recommended per layer is up to 2 mm.

Trowelable dry mortar: Estimated consumption of mortar is 1,9 kg/m^2·mm thickness (0,4 kg/m^2·mm of ***MAXURETHANE® FLOOR A+B*** and 1,5 kg/m^2·mm of ***DRIZORO SILICA 0308***).

These estimated 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.

PACKAGING

MAXURETHANE® FLOOR is supplied in 25 kg set. Component A and B. It is available in grey, red, green and white colour.

IMPORTANT INDICATIONS

- For outdoor applications exposed to direct sunlight, use ***MAXURETHANE® 2C*** as UV-barrier topcoating.
- Allow new concrete and mortar to cure a minimum of 28 days before coating.
- Surface moisture content must not exceed 5 %. Do not apply on substrates subject to rising damp or negative water pressure. Avoid contact with water, damp, dew, condensation, etc. for the first 24 hours.
- ***DRIZORO® SILICA*** must be thoroughly dry before mixing with resin components A+B.
- For other uses not specified on this Technical Bulletin or further information, consult our Technical Department.

STORAGE

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

SAFETY AND HEALTH

MAXURETHANE® FLOOR is not a toxic product but direct contact with skin and eyes must be avoided. Use 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 rub. If the irritation persists, seek medical assistance.

Consult the Material Safety Data Sheet for ***MAXURETHANE® FLOOR.***

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, UNE-EN 13813 Description: Synthetic resin screed. EN 13813 SR-C30-F15-B2,0-AR0,5-IR14,7. Uses: Wearing surface for indoor applications in construction		
Appearance and colour component A		Homogeneous pigmented paste
Appearance and colour component B		Brownish liquid
Colour		Grey, white, red and green
A:B mixing ratio, (by weight)		4:1
A+B:C mixing ratio as fluid mortar, (by weight)		1:1 to 1:0,5
A+B:C mixing ratio as dry mortar, (by weight)		1:3 to 1:7
A+B+C solids content, (%, by weight)		100
VOC content (g/l)		0
A+B density, (g/cm^3)		1,25 ± 0,1
Flash point		Non-flammable
Application and curing conditions		
Application conditions, T (ºC) / R.H. (%)		5-35 / < 85
Pot life at 20°C, (min)		15
Drying- time between coats at 20°C, (hours)		8-16
Curing time at 20°C, (days) - Pedestrian traffic / light traffic / heavy traffic		1 / 2 / 4
Cured product characteristics		
Flexural strength at 28 days, EN 13892-2 (N/mm^2)		15,0 – F15
Compressive strength at 28 days, EN 13892-2 (N/mm^2)		32,5 – C30
Adhesion on concrete at 28 days, EN 13892-8 (N/mm^2)		3,5 – B2,0
Tensile strength, ASTM D-412 (MPa)		16,1
Elongation at break point, ASTM D-412 (%)		76
Elastic modulus, EN ISO 178 (MPa) Class		60 – E1
Wear resistance BCA, EN 13892-4 (µm)		10 – Class AR 0,5
Impact resistance, EN ISO 6272 (N·m)		IR 14,7
Resistance to severe chemical attack, EN 13529 (Reduction in Shore hardness)	Class I (3 days) Class II (28 days)	G-1 (3 %), G-9 (3 %), G-10 (5 %), G-11 (3 %) G-1 (5 %), G-9 (6 %), G-10 (8 %), G-11 (5 %)
Slip / skid resistance value, UNE ENV 12633		37 Units – Class 2
Fire classification, UNE-EN 13501-1:2007		Bf1 - s1
Suitability for contact with food EU No. 10/2011		Simulants (A, B, D1 & D2): Suitable
Temperature range of use for dry conditions, (°C)		-40 to 90
Thickness / Consumption*		
Pure coating - Consumption per coat / per total consumption, (kg/m^2) - Thickness per coat / per total application (µm)		 0,25-0,3 / 0,5-0,6 200-240/ 400-480
Anti-slip broadcast multilayer - Consumption of resin / ***DRIZORO SILICA*** (kg/m^2) - Recommended thickness per layer (mm)		 1,0-1,2 / 1,0-1,5 1-2
Fluid polyurethane mortar - Consumption of mortar, (kg/m^2·mm thickness) - Thickness per application, (mm)		 1,6 1-2
Trowelable polyurethane mortar - Consumption of mortar, (kg/m^2·mm thickness) - Thickness per application, (mm)		 1,9 3-10

* These estimated 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.

CHEMICAL RESISTANCE

TABLE I.- RESISTANCE TO ACIDS		
Chemical compound	**Concentration (%, by weight)**	**Result**
Acetic, acid	2	+
	10	(+)
Acrylic, acid	2	+
	10	+
Hydrochloric, acid	10	+
	20	(+)
Citric, acid	5	+
Hydrofluoric, acid	2	+
Formic, acid	2	+
	10	(+)
Phosphoric, acid	15	+
	50	(+)
Lactic, acid	2	+
	10	+
Nitric, acid	15	+
	50	-
Sulphuric, acid	5	+
	50	-
Tannic, acid	5	+
Tartaric, acid	5	+

Test results after 500 hours at 20°C:
+ Resistat
(+) Resistat Ocasionally
- Non-resistant

TABLE II.- RESISTANCE TO SOLVENTS		
Chemical Substance / Compound	**Concentration (%, by weight)**	**Result**
Acetone	Pure	(+)
Dichloroethane	Pure	-
Ethylene glycol	Pure	(+)
Phenol	Pure	-
Formaldehyde	Pure	(+)
Glycerine	Pure	+
Methanol	Pure	(+)

TABLE III.- RESISTANCE TO OILS, GREASES & FUELS		
Chemical Substance / Compound	**Concentration (%, by weight)**	**Result**
Animal oil	Pure	+
Motor oil	Pure	+
Diesel oil	Pure	+
Petroleum	Pure	+
White-spirit	Pure	+

TABLE IV.- RESISTANCE TO ALKALIS & SALT SOLUTION		
Chemical Substance / Compound	**Concentration (%, by weight)**	**Result**
Ammonia, solution	10	+
Sodium hypochlorite	2	+
	20	+
Potassium hydroxide	20	+
Potassium permanganate	5	+
	10	+
Hydrogen peroxide	1	+
	10	+
Calcium sulphate	10	+
Potassium sulphate	10	+
Ammonium sulphate	10	+
Sodium hydroxide	10	+

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