



# 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

- High abrasion and wearing resistance. Suitable for

heavy traffic and industrial areas.

- Very good chemical resistance against a wide range of compounds: oils and greases, petrol, acid and alkali solutions, solvents, salts, etc.
- 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.
- Suitable for contact with food.
- 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 and preferably with a slight roughness, i.e. open textured surface. 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.

For surface cleaning and preparation, preferably in case of the smooth and/or poorly absorbent substrates, provide a mechanical texturing by abrasive disc, dry sand-blasting, scarification or other abrasive method to achieve at least a slightly textured surface, not being

desirable aggressive mechanical or chemicals means. Finally, vacuum the dust and loose particles.

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).

Expansion joints and fissures/cracks subject to movements, once opened must be sealed with any suitable sealant of **MAXFLEX®** range.

## 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 30 °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. The binder:aggregate mixing ratio is 1:1 to 1:0,5 by weight. In case of preparing a trowelable mortar, the binder:aggregate mixing ratio is 1:3 by weight.

## Application

### Priming:

On porous surfaces, apply by brush or roller the solvent-free epoxy primer **MAXEPOX® PRIMER** (Technical Bulletin No. 45) or solvent-free polyurethane primer **MAXURETHANE® PRIMER** (Technical Bulletin No. 380) with a recommended consumption of 0,25 - 0,3 kg/m<sup>2</sup>, and allow to dry from 14 to 16 hours but no later than 24 hours.

In case that substrate may have residual humidity, apply the water-based epoxy primer **MAXEPOX® PRIMER-W** (Technical Bulletin No. 372) with an estimated consumption of 0,20 - 0,3 kg/m<sup>2</sup>, depending on substrate porosity. Allow this primer to dry completely until tack-free before applying **MAXURETHANE® FLOOR**, i.e., about 12-24 hours, depending on temperature, relative humidity and ventilation conditions.

### 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) with an estimated consumption of 0,5 - 0,6 kg/m<sup>2</sup>, and while it is still fresh, broadcast silica sand **DRIZORO SILICA 0204** or **DRIZORO SILICA 0308** depending on roughness desired, with an estimated coverage of 1 - 1,5 kg/m<sup>2</sup>. 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 with an estimated consumption of 0,5 - 0,6 kg/m<sup>2</sup>.

*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

Do not apply if rain, water contact, condensation, dampness and dew is expected within the first 24 h after application.

Do not apply with substrate and/or ambient temperature is at or below 5 °C, or when are expected within 24 h after application. Do not apply on frozen or frost-covered surfaces.

Ambient and surface 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 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<sup>2</sup> per coat (with total consumption of 0,60 - 0,7 kg/m<sup>2</sup> in two coats).

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

*Fluid mortar:* Estimated consumption of mortar is 1,6 kg/m<sup>2</sup>·mm thickness (0,8 kg/m<sup>2</sup>·mm of **MAXURETHANE® FLOOR A+B** and 0,8 kg/m<sup>2</sup>·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<sup>2</sup>·mm thickness (0,4 kg/m<sup>2</sup>·mm of **MAXURETHANE® FLOOR A+B** and 1,5 kg/m<sup>2</sup>·mm of **DRIZORO SILICA 0308**). Maximum thickness recommended per layer is up to 10 mm.

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.

## IMPORTANT INDICATIONS

- For outdoor applications exposed to direct sunlight, use **MAXURETHANE® 2C** as UV-barrier topcoating.
- 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.
- Allow new concrete and mortar to cure a minimum of 28 days before coating.
- Do not add solvents, thinners, additives or other non-specified compounds.
- **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.

## PACKAGING

**MAXURETHANE® FLOOR** is supplied in 25 kg set. Component A in 20 kg drum and component B in 5 kg drum. It is available in grey, red, green and white colour. Other colours are available upon special request.

**DRIZORO® SILICA** is supply in 25 kg bags (Consult its Technical Bulletin No.308).

## TECHNICAL DATA

## STORAGE

Twelve months in its unopened original packaging. Store in a cool, dry and covered place, protected from moisture, frost and direct sunlight, with temperatures between 5 °C and 35 °C.

Temperatures below 5 °C may lead the crystallisation of product components. Should this happen, it must be heated slowly at moderate temperature while it is regularly stirred until achieving its homogeneous and original lump-free appearance.

## 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.

Product characteristics		
CE Marking, UNE-EN 13813		
Description: Synthetic resin screed. EN 13813 SR-B2,0-AR0,5-IR14,7		
Uses: Wearing surface for indoor applications in construction		
Color	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	
A+B density, (g/cm <sup>3</sup> )	1,25 ± 0,1	
Flash point	Non-flammable	
Application and curing conditions		
Application conditions, T (°C) / 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)	1/ 2/ 4	
- Pedestrian traffic/ light traffic / heavy traffic		
Cured product characteristics		
Tensile strength, ASTM D-412 (MPa)	16,1	
Elongation at break point, ASTM D-412 (%)	76	
Compressive strength at 28 days, EN 13892-2 (N/mm <sup>2</sup> )	32,5 – C30	
Flexural strength at 28 days, EN 13892-2 (N/mm <sup>2</sup> )	15,0 – F15	
Wear resistance BCA, EN 13892-4 (µm)	10 – AR 0,5	
Elastic modulus, EN ISO 178 (kN/mm <sup>2</sup> )	0,06 – E1	
Impact resistance, EN ISO 6272 (N·m)	IR 14,7	
Adhesion on concrete at 28 days, EN 13892-8 (N/mm <sup>2</sup> )	3,5 – B2,0	
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	Bf1 - s1	
Suitability for contact with food . EU No. 10/20112	Simulants (A, B, D1 & D): Suitable	
Temperature range of use for dry conditions, (°C)	-40 to 90	
Thickness / Consumption*		
Pure coating		
- Consumption per coat / per total consumption, (kg/m <sup>2</sup> )	0,25 – 0,3 / 0,5 - 0,6	

- Thickness per coat / per total application (µm)	200 – 240 / 400 – 480
Anti-slip broadcast multilayer	
- Total thickness, (mm)	1 - 2
- Consumption of resin per coat / per total application, (kg/m <sup>2</sup> )	0,5 - 0,6 / 1,0 - 1,2
- Consumption of <b>DRIZORO SILICA</b> per application, (kg/m <sup>2</sup> )	1,0 - 1,5
Fluid polyurethane mortar	
- Mixing ratio binder resin: <b>DRIZORO SILICA 0204</b> (by weight)	1:1
- Thickness per application, (mm)	1 - 2
- Consumption of mortar, (kg/m <sup>2</sup> .mm thickness)	1,6
Trowelable polyurethane mortar	
- Mixing ratio binder resin: <b>DRIZORO SILICA 0308</b> (by weight)	1:3
- Thickness per application, (mm)	3 - 10
- Consumption of mortar, (kg/m <sup>2</sup> .mm thickness)	1,9

\* 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 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	+

## CHEMICAL RESISTANCE

Test results after 500 hours at 20 °C:

- + Resistat
- (+) Resistat Occasionally
- Non-resistant

Chemical Substance / Compound	Concentration (% by weight)	Result
Acetone	Pure	(+)
Dichloroethane	Pure	-
Ethylene glycol	Pure	(+)
Phenol	Pure	-
Formaldehyde	Pure	(+)
Glycerine	Pure	+
Methanol	Pure	(+)

Chemical Substance / Compound	Concentration (% by weight)	Result
Animal oil	Pure	+
Motor oil	Pure	+
Diesel oil	Pure	+
Petroleum	Pure	+
White-spirit	Pure	+

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.



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