DRIZORO® Construction Products

MAXEPOX® FLOOR

CE

MULTI-PORPOUSE, HIGH PERFORMANCE, EPOXY-BASED BINDER FOR FLUID MORTARS, TROWELABLE MORTARS AND COATINGS ON CONCRETE FLOORS

DESCRIPTION

MAXEPOX® FLOOR is a two-component, solvent-free, pigmented epoxy binder designed to provide a wide flooring system with high mechanical and chemical properties, for protection and decorative finishing of concrete and mortars.

MAXEPOX® FLOOR can be applied directly as a sealer coating or mixed with controlled silica aggregate, component C, 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 epoxy 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.
- Protective coating on drainage boxes, retaining tanks or areas exposed to spillages and spattering of chemical compounds.

ADVANTAGES

- High abrasion and wearing resistance. Suitable for heavy traffic and industrial areas.
- Very good chemical resistance against a wide range of chemical 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 an anti-dust finishing. Easy to clean 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, epoxy-based, non-flammable and solvent-free product. Suitable for poor ventilated areas.

APPLICATION INSTRUCTIONS

Surface preparation

Surface to be coated must be structurally sound, firm, without cement laitance and as uniform as possible, and preferably with a slight roughness, i.e. open textured surface. It must be dry, 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 to adhesion. Surface moisture content should not exceed 4 %.

Consult our technical note "*Preparation of concrete surfaces for application of epoxy-based coatings*" for further information.

For cleaning and preparing the substrate, preferably in case of the smooth and/or poorly absorbent concrete and cement mortars, 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.

All small voids, holes, honeycombs, cavities, once opened must be patched with epoxy-cement mortar ***MAXEPOX® CEM*** (Technical Bulletin No. 197) or with the epoxy-based mortar ***MAXEPOX® JOINT*** (Technical Bulletin No. 237). Static cracks without movement, once opened and routed to a minimum depth of 2 cm, must be repaired with the ***MAXROAD®*** (Technical Bulletin No. 27) to provide an even surface.

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

Mixing

MAXEPOX® FLOOR is supplied as a pre-weighed two-component set. Premix the components separately, and then the hardener, component B, is poured into the resin, component A.

Mixing manually or preferably using a low speed drill (300-400 rpm. maximum), fitted with a mixer suitable for liquids for 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.

Check Technical Data Table for product pot life (30 minutes at 20° C). This pot-life is greatly reduced with higher temperatures.

If the preparation of a fluid epoxy mortar is required, it is advisable to pour the binder (A+B) into a clean container, and then add the dry silica aggregate ***DRIZORO® SILICA 0204*** (component C), while mixing well until achieving a homogeneous mortar in colour and appearance. The binder:aggregate mixing ratio is 1:1-0,7 by weight. In case of preparing a trowelable mortar, the binder:aggregate mixing ratio is 1:6 by weight.

Application

Priming:

On porous surfaces, apply solvent-free epoxy primer ***MAXEPOX® PRIMER*** (Technical Bulletin No. 174) with a consumption from 0,25-0,30 kg/m^2 by brush or roller, and allow it to dry from 14 to 16 hours but no later than 24 hours. If substrate may have residual humidity, apply one coat of the water-based epoxy primer ***MAXEPOX® PRIMER-W*** (Technical Bulletin No. 372) with an estimated consumption of 0,205- 0,30 kg/m^2 per coat, depending on substrate porosity. Allow this coating to dry completely before applying ***MAXEPOX® 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 ***MAXEPOX® FLOOR*** (components A+B) using a brush, short-piled roller or air-less spray equipment in two crossed coats, with a minimum time lapse of 6 hours and maximum of 24 hours.

Anti-slip broadcast multilayer system:

Once primer becomes tack-free, apply a first pure coat of ***MAXEPOX® FLOOR*** (components A+B) by brush, short-piled roller or air-less spray equipment with an estimated consumption of 0,50-0,60 kg/m^2, and while it is still fresh, broadcast ***DIZORO SICLICA 0308*** or ***DRIZORO SILICA 0204***, depending on roughness desired, with an estimated coverage of 1,0-1,5 kg/m^2. 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 ***MAXEPOX® FLOOR*** (components A+B) as topcoat with an estimated consumption of 0,50 to 0,6 kg/m^2.

Fluid mortar (1,0-2,0 mm thickness):

Once the primer becomes tack-free, apply mixture composed of ***MAXEPOX® FLOOR*** (components A+B) and ***DRIZORO® SILICA 0204*** (component C) in proportion 1:1-0,7 using a toothed trowel up to 2 mm maximum thickness. Before material begins to set, from 15-20 min, use a spiked roller to obtain an optimum finish and remove possible air bubbles on surface.

Trowelable mortar:

Once the primer becomes tack-free, apply evenly ***MAXEPOX® FLOOR*** (components A+B+C) using a metal trowel to the desired thickness in layers between 2 to 10 mm maximum. Finish with finishing trowel.

Application conditions

Do not apply if rain, contact with water, 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 8 °C, or when are expected to fall bellow 8 °C within 24 h after application. Do not apply to frozen or frost-covered surfaces.

Ambient and surface temperature must be at least 3 ºC higher than dew point. Do not apply with R.H. higher than 85 %. Check 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 ºC lead a quick-setting between components and heat production, so the pot life is greatly reduced.

Curing
Allow ***MAXEPOX® FLOOR*** to cure 1 day for pedestrian traffic and 4 days for full service, 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 ***MAXEPOX® SOLVENT*** after use. Once product cures, this can only be removed by mechanical means.

CONSUMPTION

Pure sealer coating: Estimated consumption for ***MAXEPOX® FLOOR*** varies from 0,25-0,30 kg/m^2 per coat (a total consumption 0,60-0,7 kg/m^2, applied in two coats), to achieve a total dry film thickness from about 340 to 400 µm (170 – 200 µm per coat).

Anti-slip broadcast multilayer system: Estimated consumption for ***MAXEPOX® FLOOR*** varies from 0,5-0,6 kg/m^2 per coat (a total consumption from 1,0-1,2 kg/m^2) and about 1,0-1,5 kg/m^2 for ***DRIZORO® SILICA***.

Fluid mortar: Estimated consumption is 2,0 kg/m^2·mm (1,0 kg/m^2·mm of ***MAXEPOX® FLOOR*** and 1,0 kg/m^2·mm of ***DRIZORO SILICA 0204***). Maximum thickness recommended per application is up to 2,0 mm.

Trowelable dry mortar: Estimated consumption is 2,1 kg/m^2·mm of mortar (0,3 kg/m^2·mm of ***MAXEPOX® FLOOR*** and 1,8 kg/m^2·mm of ***DRIZORO SILICA 0308***). Maximum thickness recommended per layer is up 10,0 mm.

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.

IMPORTANT INDICATIONS

- For interior use only.
- Surface moisture content of substrate must not exceed 4%. Do not apply on substrates subject to rising humidity or negative water pressure.
- Avoid contact with water, damp, dew, condensation, etc for at least 24 hours after application. Relative humidity must not exceed 85%.
- Allow new concrete and mortar to cure a minimum of 28 days before application.
- Do not add solvents, thinners, additives, or other compounds.
- ***DRIZORO® SILICA*** aggregate must be thoroughly dry before mixing with resin components A+B.
- Observe the recommended thickness and consumptions per application.
- For other uses not specified on this Technical Bulletin or further information, consult the Technical Department.

PACKAGING

MAXEPOX® FLOOR is supplied in pre-weighed two-component set of 25 kg: Component A in 20 kg drum and Component B in 5 kg can. It is available in green, red, grey, white, blue and transparent. Other colours are available upon special request.
DRIZORO® SILICA is supply in 25 kg bags (Consult Technical Bulletin No.308)

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 ºC and 35 ºC.

Storage at 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

MAXEPOX® 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 ***MAXEPOX® 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-B2,0-AR0,5-IR14,7 Uses: Wearing surface for indoor applications in construction	
General appearance and colour for component A	Coloured homogeneous paste
General appearance and colour for component B	Translucent-yellowish liquid
A:B mixing ratio, (by weight)	4:1
A+B:C mixing ratio for fluid mortar, (by weight)	1:0,7
A+B:C mixing ratio for dry mortar, (by weight)	1:3
A+B+C solid content, (%, by weight)	100
A+B density, (g/cm^3)	1,45 ± 0,1
Density for fluid mortar / dry mortar, (g/cm^3)	1,90 / 2,0 ± 0,1
Flash point	Non-flammable
Application and curing conditions	
Application conditions, T (ºC) / R.H. (%)	8 – 30 / < 85
Pot life at 10 ºC/ 20 ºC/ 30 ºC, (min)	45 / 30 / 10
Drying-time to touch at 20 ºC, (hours)	6-8
Waiting time between coats at 20 °C, (hours)	6-24
Curing time at 20 ºC, (days) - Pedestrian traffic - Light traffic - Heavy road traffic	 1 3 4
Cured fluid mortar characteristics	
Flexural strength at 28 days, EN 13892-2 (MPa)	32,6
Compressive strength at 28 days, EN 13892-2 (MPa)	61,0
Adhesion on concrete at 28 days, EN 13892-8 (MPa)	> 3 (breaks concrete)
Slip/skid resistance value, UNE-ENV 12633 (Rd)	Class 3
Resistance to severe chemical attack, EN 13529 (Reduction in Shore hardness)	Class I: G-1 (4%), G-9 (6%), G-11 (4%) Class II: G-1 (6%), G-9 (10%), G-11 (5%)
Reaction to fire, UNE EN 13501-1	B_{FL} – s1
Thickness / Consumption*	
Pure coating - Thickness per coat / total application, (µm) - Consumption per coat / total application, (kg/m^2)	 170 – 200 / 340 – 400 0,25 – 0,3 / 0,5-0,6
Anti-slip broadcast multilayer system - Total thickness, (mm) - Consumption of resin per coat / total application, (kg/m^2) - Consumption of *DRIZORO SILICA* per application, (kg/m^2)	 1,0-2,0 0,5-0,6 / 1,0-1,2 1,0-1,5
Fluid epoxy mortar - Binder to *DRIZORO SILICA 0204* mixing ratio, (by weight) - Thickness per application, (mm) - Consumption per application, (kg/m^2·mm)	 1:1 1,0-2,0 2,0
Trowelable epoxy mortar - Binder to *DRIZORO SILICA 0308* mixing ratio, (by weight) - Thickness per application, (mm) - Consumption per application, (kg/m^2·mm)	 1:6 2,0 – 10,0 0,3

* 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.

CHEMICAL RESISTANCE FOR *MAXEPOX® FLOOR*

TABLE I.- RESISTANCE TO ACIDS		
Chemical Substance / 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	+

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	+

Test results after 500 hours at 20 ºC:

+ Resistant

(+) Resistant Occasionally

- Non-resistant

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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