DRIZORO® Construction Products

MAXFLOOR® CEM

CE

SELF-LEVELLING EPOXY-CEMENT MORTAR FOR REPAIR AND PROTECTION OF CONCRETE PAVEMENTS

DESCRIPTION

MAXFLOOR® CEM is a self-levelling mortar composed of a cementitious base and water-based epoxy resins. It is designed for repair and protection of both indoor and outdoor concrete pavements, in thickness between 1,5 and 3,0 mm, exposed to high abrasion and chemical aggressive environment.

APPLICATION FIELDS

- Repair and protection of floors affected by wheel traffic in industrial areas, parking, decks, etc.
- Protection against chemical attack in manufacturing plants, industrial facilities, wastewater treatment plants, etc.
- Smoothing and levelling floors, prior to installation of finishes with parquet, linoleum, carpet, vinyl, etc.
- Repair and patch of floors by trowel with the addition of sand.
- Preparation over damp substrates prior to finishing with epoxy or polyurethane top coatings.

ADVANTAGES

- Self-levelling. Its fluidity provides a quick and easy placing.
- Very high abrasion and wearing resistance.
- Excellent adhesion on concrete, even on damp surfaces.
- It acts as a temporary water vapour barrier and base layer on wet substrates, prior to application of epoxy or polyurethane top coatings.
- Higher chemical resistance than concrete.
- Solvent-free and non-flammable. Suitable for use in pour ventilation areas.
- Waterproof.

APPLICATION INSTRUCTIONS

Surface preparation

The substrate to be repaired and levelled must be solid, firm, rough and sound, without poorly adhered parts, superficial grouts and as uniform as possible. The minimum tensile strength of the substrate must be 1,0 N/mm^2. For the substrate preparation, preferably in smooth and/or poorly absorbent cases, use mechanical scarification by milling or shot blasting, aggressive mechanical or chemical means not being advisable, until an open-pore surface texture is achieved.

Likewise, the substrate must be clean, free of paints, efflorescence, loose particles, greases, release oils, dust, plaster, etc., or other substances that could affect the adhesion of the product. To clean the substrate, proceed with a high-pressure water jet.

Cracks, defects and holes deeper than 8 mm must be cut with the edges perpendicularly and then, repaired with ***MAXROAD®*** (Technical Bulletin No. 27).

Mixing

MAXFLOOR® CEM is supplied in three-component pre-dosed sets. Component A previously is mixed and poured over Component B. Then, the resulting mixture is poured into a suitable container, and the Component C is gradually added, mixing it manually or preferably with an electric drill at low revolutions (400–600 rpm) equipped with a mixing disc for approximately 1 to 2 minutes until a homogeneous product is obtained without lumps or air bubbles and with a fluid consistency. After letting the mortar rest for 3 minutes, make a brief mixing for a few seconds and then start applying.

For mixer pump applications, observe the mixing ratio constant during the process.

Application
In case of porous surfaces, not affected by rising dampness, and to avoid the appearance of bubbles on the surface of the mortar, apply a thin, continuous primer composed of ***MAXPRIMER® FLOOR*** (Technical Bulletin No. 230) and water (mixing ratio 1:3), by brush, roller or mechanical means and with a load of 0,20-0,25 l/m^2, avoiding the formation of puddles due to excess load. For a better results on very porous surfaces, apply two or three coats, allowing 10-15 minutes between coats. Wait for the primer to dry to the touch before applying the self-levelling mortar (3-4 hours at 20°C), depending on environmental conditions and/or porosity of the substrate.

Pour ***MAXFLOOR® CEM*** and spread it with the help of a rubber rake to the desired thickness in a single step. The application thickness must be between 1,5 and 3,0 mm. Before starting to set, i.e. 5-10 minutes at 20°C, use a spike roller to settle the material and eliminate entrapped air bubbles on the surface.

Apply in delimited sections in advance, allowing a continuous mixing and pouring beside the previous fresh layer, that should be finished completely to avoid cold joints in non-desired places. Limits of each section should coincide with contraction or concrete joints of the pavement.
Twenty-four hours after application, sawcut contraction joints on each limit or every 36 m^2 maximum if there are not present on concrete base.

Expansion joints must not be covered with ***MAXFLOOR® CEM*** and should be sealed with a suitable elastomeric sealant of ***MAXFLEX®*** range.

Applications with thicknesses from 3 mm to 8 mm.
For patching and small repairs between 3 and 8 mm deep in a single layer, add 5-10 kg of silica sand ***DRIZORO® SILICA 0204*** (Technical Bulletin No. 308), with maximum size up to 0,5 mm, per each set of ***MAXFLOOR® CEM*** thus obtaining a more thixotropic mortar. Apply this mortar by trowel, without pressing excessively, against the edges and bottom of the area to be repaired in layers not exceeding 8 mm in thickness.

Application conditions
Avoid applications if contact with water, moisture, condensation, dew, etc., is expected within 24 hours of application.

The optimum working temperature range is from 10°C to 30°C. Do not apply with substrate and/or ambient temperatures below 8°C or if lower temperatures are expected within 24 hours of application. Likewise, do not apply on frozen or frosty surfaces.

The temperatures for substrate and environment must be at least 3°C higher than the dew point. Likewise, do not apply when the relative humidity is higher than 80 %.
Avoid direct exposure to the sun in extreme heat conditions.

Curing
Protect from rain, dew and water the first 24 hours after application. With hot temperature conditions (> 30°C), protect from an excessive quick drying covering with a plastic sheet. Do not wet surface nor use curing compounds.

Epoxy or polyurethane-based topcoats can be applied after a curing time of at least 24 h (20°C and 50 % R.H.). Low temperatures with high relative humidity and/or sites with poor ventilation will require longer curing time. Lower temperatures, higher R.H. values, and/or applications in poorly ventilated locations will lengthen the cure time. Check that the mortar surface humidity is less than 4 % before coating it with epoxy resins or polyurethanes.

Cleaning tools
Tools and equipment can be clean with water immediately after use. Once it hardens, can only be removed by mechanical methods.

CONSUMPTION

Estimated consumption of pure ***MAXFLOOR® CEM*** is about 2,25 kg/m^2·mm thickness, and from 0,55 to 1,7 kg/m^2·mm mixed with 5 kg and 10 kg of aggregate, respectively.

Consumption may vary depending on the texture, porosity and conditions of the substrate, as well as the application method. Perform an on-site test to know its exact value.

IMPORTANT INDICATIONS

- Do not add water, cement or additives that may affect the properties of the product.
- Observe the indicated mixing ratios of all components.
- Observe the minimum and maximum recommended consumption and thicknesses: 1,5 a 3,0 mm.
- Do not apply on water-repellent, vitrified or enamelled substrates, or on bituminous materials, metal, wood, plasters or paints.
- Do not use leftovers from previous mixing to make a new batch.

- ***MAXFLOOR® CEM*** acts as a temporary barrier against the rise of water vapour for concrete slabs with a residual moisture. It is not suitable for permanent vapor barriers against humidity due to raising dampness or negative hydrostatic pressure conditions.
- ***MAXFLOOR® CEM*** can suffer from long-term surface discoloration outdoors due to the action of UV rays. Surface discoloration does not affect its mechanical properties. If a permanent aesthetic finish under these conditions is required, apply ***MAXURETHANE® 2C*** (Technical Bulletin No. 87) as a top coating.
- For any other application not specified in this Technical Bulletin consult our Technical Department.

PACKAGING

MAXFLOOR® CEM is supplied available in 30,8 kg pre-dosed sets. Component A in 1,40 kg plastic can, Component B in 4,4 kg jerrican, and Component C in 25 kg paper bags. It is available in grey and white colour.

STORAGE

Twelve months in its original closed and undamaged packaging. Store in a cool, dry place and protected from humidity, frost and direct exposure to the sun's rays, with temperatures above 5°C.

Prolonged storage and below the indicated temperatures can cause crystallization of the product (Components A and B) and/or increase in its viscosity. In this case, proceed to heat it slowly to a moderate temperature while gently mixing it to restore the product to its original appearance, colour and texture.

SAFETY AND HEALTH

MAXFLOOR® CEM is not a toxic product, but it is abrasive in its composition. Avoid contact with skin and eyes, as well as inhalation of dust. Wear rubber gloves and safety glasses during handling, mixing and application of the product. In case of contact with the skin, wash the affected area with soap and water. In case of splashes or contact with eyes, rinse immediately with plenty of clean water and without scrubbing. If irritation persists, seek medical assistance. If swallowed, immediately seek medical attention, do not induce vomiting.

Consult the ***MAXFLOOR® CEM*** Safety Data Sheet.

The disposal of the product and its packaging must be carried out in accordance with current legislation and is the responsibility of the final consumer of the product.

TECHNICAL DATA

Product characteristics	
CE Marking. EN 13813 *Description: Polymer-modified self-levelling cement paste. EN 13813 CT-C30-F7-A6* *Intended Uses: Indoor wear surface*	
Colour and appearance: Component A Component B Component C	 Milky liquid Yellowish liquid Grey or white powder
Mixing ratio, A:B:C (by weight)	1,4:4,4:25
Application and curing conditions	
Application minimum temperature, (°C)	> 8
Open time at 20°C, (min)	20
Curing time at 20°C and 50 % R.H. Pedestrian traffic and re-coat, (h) Light wheel traffic, (d) Full service, (d)	 24 3 7
Cured product characteristics	
Density for cured mortar, (g/cm^3)	2,00 ± 0,10
Compressive strength, EN 13892-2 (MPa)	C30
Flexural strength, EN 13892-2 (MPa)	F7
Böhme abrasion resistance, EN 13892-3 (cm^3/50 cm^2)	4,5 - A6
Hardness superficial, EN 13892-6 (N/mm^2)	88,4 - SH70
Elasticity modulus, EN ISO 178 (kN/mm^2)	4,67
Impact resistance and height, EN ISO 6272 (N·m/mm)	IR 7,85 - 800
Taber abrasion resistance, ASTM D-4060 Wear Index after 500/1000 cycles (wheel: H-22, load: 1,0 kg)	 4,4 / 2,2
Adhesion on concrete at 28 days, EN 13892-8 (MPa)	2,81
Reaction to fire, EN 13501-1	A1
Chemical resistance against sewage, sea water, salts, industrial oil and greases.	Very good
Thickness/Consumption*	
Minimum and maximum thickness, (mm) - Applied as pure screed - Applied extended with aggregate	 1,5-3,0 3,0-8,0
Estimated consumption, (kg/m^2 per mm thickness) - Applied as pure screed - Applied extended with aggregate	 2,25 1,7 (5 kg) – 0,55 (10 kg)

* 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.

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. 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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