

EM 4610

Cement-bonded
industrial floor topping

Product description

One component, pumpable, cement-bonded, polymer-modified coating for layers between 4-15 mm, CT-C35-F10-ARO 5, for use in industrial environments subjected to high mechanical load.

Field of application

EM 4610 is designed for coating interior floors made of concrete or bonded screeds that must be absolutely smooth. For instance, it can be used in a wide range of industrial environments subjected to high mechanical loads such as warehouses and shop floors with heavy forklift traffic.

EM 4610 is ideal where medium to heavy rolling loads are expected.

Also suitable for use in multi-storey and underground car parks. Subsequent treatment of the coated surface with floor reaction resins possible.

Properties

- Excellent flow properties
- Extremely hard-wearing
- High resistance to wear and tear
- Pumpable
- Allows early foot traffic
- Highly resistant against chloride penetration
- R10 tested slip resistance

Application instructions

Assess the necessary degree of levelling before commencing work. Mark the required heights of the finished floor. Observe existing expansion joints.

Substrate

Concrete, bonded cement screed:
The substrate must be sound, stable, dry and free of dust and any other contamination (remove dust and any other material e.g. with vacuum cleaner). Ensure the substrate is free of substances that would impair adhesion.

The substrate is usually prepared by shot blasting or grinding and vacuum cleaning.

The substrate should have a surface tensile strength of at least 1.5 N/mm².

Pre-treatment

For concrete floors in good condition prime the surface carefully by applying two coats of EM 4716 Primer (dilute bonding primer 1:3 with water), using a roller or broom.

Allow 24 hours for primer to dry before applying EM 4610.

For concrete floors which are average condition and may be subjected to potential rising damp apply two coats of EM 4710N epoxy primer and sprinkle the second coat with a specified sand.

Allow 24 hours for primer to dry before applying EM 4610.

For more information, please refer to the primer technical data sheets.

For highly uneven or rough substrates, prepare the area first using a prep coat of EM 4610 to level the floor. Primer prepared areas again. Once dry, the final continuous system of EM 4610 can be applied.

Mixing time / Mixing procedure

Hand mixing:

First, fill a bucket with the necessary amount of water (4.5-4.75 litres for a 25 kg bag), then add the powder component gradually. Mix thoroughly for 2-3 minutes (use paddle in an electric drill) to prevent any lumps from forming and leave the material to stand in the container for 1 minute before mixing it again. Use buckets that take at least the mixture of 2-3 bags for larger areas.

Machine mixing:

When mixing EM 4610 DuroTop by machine, the water dosage and complete mixing must be controlled by measuring the final average flow diameter. The diameter should ideally range between 23-24 cm.

Higher water contents (and flow diameters) will reduce the strength and increase the risk of crack formation and shrinkage.

Hoses of at least 40 meters should be used for pumping to aid the homogenous mixing of the EM 4610.

Mixingtools

- Electric drill with paddle
- m-tec Duomix 2000.

Tool cleaning

Clean all tools with water immediately after use.

Application

Before applying the material, use the self-adhesive barrier strips to sub-divide the work area into several widths.

EM 4610 should ideally be pumped in the required thickness into areas of 10-12m² over the primed substrate.

Each new width should be laid by the previous strip as quickly as possible to ensure the compound flows together. Finish by smoothing off the surface slightly with a notched trowel.

When applying EM 4610 by hand, pour the material in the required thickness onto the primed substrate.

Use a float, notched trowel etc. to evenly spread the material. Lightly comb the surface slightly with a notched trowel similar to the machine application. Re-work the surface with a spiked roller (20-30 mm spike length) if necessary.

Check the compound flow rate after every 5 t of pumped material to ensure consistency.

Applicationexamples

Final coating with EM 4610, 6-8 mm application thickness

- Appropriate substrate preparation
- 2 coats of primer using EM 4716, diluted 1:3 with water

Cement-bonded coating with epoxy resin vapour barrier, approx. 6-8 mm application thickness:

- Appropriate substrate preparation
- 2 coats of primer: EM 4710 N Epoxy Primer.
- Second coat sprinkled with specified sand:
- Thin intermediate coat of primer: EM 4716, diluted 1:3 with water
- Cement-bonded coating with EM4610 DuroTop

Roughly levelled uneven substrate with EM 4610 final coating:

- Appropriate substrate preparation:
- 2 coats of EM 4716 primer, diluted 1:3 with water
- Levelling with EM 4610
- Priming with EM 4716, diluted 1:3 with water
- Cement-bonded coating with EM 4610

Subsequenttreatment

It is important to protect freshly applied surfaces from draughts, direct sunlight and heat.

Ventilate the installation area once foot traffic is allowed.

Maintain > 8°C interior and floor temperature for one week during and after application.

Information

EM 4610 DuroTop is a cement-based coating. Since it consists of raw materials, the colouring of the surface may vary after curing. For surfaces requiring optimum appearance, the minimum coating thickness is 6 mm. Since every craftsman has his own signature, the final appearance depends on the individual coating and on site-conditions. Please also see our information on decorative floor finishes. The chemical resistance of EM 4610 is similar to that of dense concrete. Floorings that are permanently exposed to chemicals such as lubricants, abrasives and cleaning agents must be coated with a suitable Sealer.

Pleasenote

Outlets, drainage systems, etc. must be carefully sealed before commencing work. On sloped substrates (max. 1.5%), adjust the flow behaviour of EM 4610 to the smaller flow diameter by reducing the water content. In the event of subsequent application of reaction resin, pre-treat EM 4610 by shot blasting.

Contact us for technical support if you have any questions regarding the application, substrate or special design features. Do not mix with different materials.

Cleaning and maintenance

Dry-clean the untreated surface with a broom or vacuum cleaner.

Coat with a suitable surface Sealer.

Clean the area using a damp mop.

Up-to-date cleaning and maintenance instructions are available on request.

Storage

12 months from date of production under dry conditions.

Packaging

Available in 25 kg bags; 42 bags/pallet; 1050 kg/pallet

Available in bulk silos or silo mixing pump

Environmental notices

GISCODE ZP 1; WGK: 1; Ordinance on Industrial Safety and Health: not applicable since product hardens after 5 to 6 hours when water is added and can then be disposed of as normal construction debris.

Technical data

Coverage rates	1.7 kg/mm and m ²
Drying time	1 to 3 hours
Foot traffic	1 day, 3 days when coated with reaction resin
Light traffic	7 days
Heavy traffic	Surface treatment of floor levelling compound with wax, floor care products or stone oil:
Time between coats	- wait for at least 12 hours. Sealing with reaction resin: - wait for at least 72 hours and < 4 CM %, 10 minutes measuring time.
Minimum coat thickness	4 mm
Maximum coat thickness	15 mm
Recommended coat thickness	6-8 mm
Outdoor application	No
Interior application	Yes

Water ratio	19 – 20%; approx. 4.5 – 4.75 litres/25 kg bag approx. 21000 N/mm ²
Elasticity modulus	approx. 21000 N/mm ²
Poured density	1.3 kg/dm ³
Density	approx. 2.0 kg/dm ³
Fresh mortar bulk density	approx. 2.0 kg/dm ³
Compressive strength after 28 days	> 35 N/mm ² EN 13892-2
Flexural strength after 28 days	> 10 N/mm ² EN 13892-2
Shrinkage after 28 days	< 0.5 mm/m
Flow range according to EM	220-240 mm standard Ring: 68/H 35 mm
Fire rating	A2fl-s1, EN 13501-1
Aggregate	1 mm max. particle size
Application temperature	Substrate and material temperature 8°C to 25°C ambient temperature 5°C to approx. 15 – 20 minutes at 20°C and 65% relative humidity. Higher temperatures reduce this time, lower temperatures prolong it.
Working time	
Relative humidity	> 70%
Colour	Dark grey
Acoustic insulation	NPD

Safety information

The product produces a strong alkaline reaction with water. Avoid contact with skin and eyes. Wear safety glasses/face protection/protective gloves. Upon contact with the eyes, wash thoroughly with water and consult a doctor immediately.

Low in chromate content. Observe current material safety datasheet. After hardening, the product presents no risk to health or the environment.

Legal notices

The information provided in this document is based on our technical knowledge and experience at the present time. It must be regarded as a general guideline only. Owing to the large number of potential influences, it does not relieve anyone using or processing our products from the responsibility of carrying out their own tests and experiments nor does it imply any legally binding assurance of certain properties or that our products are fit for a specific purpose. Responsibility for complying with any property rights, applicable laws or other requirements lies solely with the user.

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