

KEIM Concretal®-Mörtel-R (Fiber-reinforced repair mortar for concrete)



1. Product description

Fiber-reinforced repair mortar for the KEIM Concretal® concrete repair system to ZTV-ING TL/TP BE PCC III and to Building Rules List A, part 2.

2. Field of application

Concrete repair in civil engineering and bridge building to ZTV-ING and in building construction according to DAfStb guidelines for restoring concrete components in zones exposed to dynamic loads and of static relevance. KEIM Concretal®-Mörtel-R can be applied in layer thicknesses of 5 mm to 50 mm (1/4 in. to 2 in.) in multiple layers as required. (To ZTV-ING, minimum layer thickness 10 mm). Concretal®-Mörtel-R may be applied by spraying.

3. Product properties

Single-component, polymer-modified, cement-bound mortar, mixed with water. Low-shrinkage and crack-free hardening even when exposed to dynamic loads during application and setting period, frost-resistant, resistant to de-icing salt, water-impermeable, water vapor permeable, elevated carbonation resistance. Non-flammable to DIN 4101, part 1, building material class A1.

4. Application instructions

Substrate preparation

The substrate must be clean, solid and free of any substances could have a release action or prevent proper bonding, such as dust, oil etc.

For full coverage application (by spraying), the substrates must be roughened before application by blasting. Dirt, laitance and unsound layers must be completely removed.

The necessary minimum tensile bond strength on mineral substrates should comply with relevant technical regulations (DAfStb guidelines for the protection and renovation of concrete components; ZTV-ING).

Mixing

Add KEIM Concretal-Mörtel-R to an initial amount of water and mix until homogeneous with a compulsory mixer or slow-running stirrer for approx. 5 minutes. Mixing by hand is not permissible.

Mixing ratio:

100 parts by weight Concretal-Mörtel-R
15 - 16 parts by weight water

3.75 - 4.00 l (0.99 - 1.06 gal) of water* are required for 25 kg of KEIM Concretal-Mörtel.

* Water is added depending on the desired consistency and temperature conditions (low temperature = low water requirement; high temperature = higher water requirement).

Manual application

Depending on absorbency, pre-wet substrate before applying KEIM Concretal MKH, avoiding standing water. Work KEIM Concretal-MKH into the only matt moist substrate by vigorous brushing. Apply the mixed KEIM Concretal-Mörtel-R with a float fresh-on-fresh onto the substrate pretreated with KEIM Concretal-MKH. Layer thickness 5 mm to 50 mm. Thickness per application max. 25 mm. The possible thickness per application depends on



the size and nature of the defective area and its location (floor, wall, ceiling, etc.). If several layers are required, subsequent layers may be applied onto the stably set, but still moist first layer. Mortar which has already dried must be pre-wetted again and pretreated with KEIM Concretal-MKH. Fresh KEIM Concretal-MKH must always be used to prepare the edges of existing concrete.

Spray application

The preparation and application conditions stated for normal mortar apply to spray application. KEIM Concretal-MKH need not be applied.

When corrosion protection is used, three coats of KEIM Concretal-MKH must be applied. Conventional wet-flow spraying systems for mortar with a max. grain size of 4 mm, specifically variable-delivery screw pumps, are suitable for spray application of KEIM Concretal-Mörtel-R. A necessary nozzle clearance of 60 - 80 cm (2 - 2.6 ft), with a corresponding working space, must be allowed when planning scaffolding depth. Once it has initially set, KEIM Concretal-Mörtel-R can be leveled and smoothed; after the onset of hardening, there is a risk of structural changes.

Post-treatment

KEIM Concretal-Mörtel-R should be protected from sun or wind to prevent it from drying out too rapidly, for example by direct covering (masking with film) or keeping moist by laying mats and spraying with water. An after-treatment time of at least 5 days must be observed.

Application data/Technical data

Grain size: 0 to 2 mm
 Fresh mortar bulk density: 2.06 kg/dm³
 (128.6 lb/cu.ft.)

Compressive strength 28d: 55 N/mm²
 (7,977 psi)
 Bending tensile strength 28d: 8.5 N/mm²
 (1232.8 psi)
 Dynamic modulus of elasticity: 32 500 N/mm²
 (2356.8 tons/sq.in.)
 Shrinkage 28d: 0.78 mm/m
 (0.2378 mm/ft)
 Carbonation depth: 0 mm/90 days

Working time: at + 5°C/41°F approx. 60 min.
 at + 20°C/68°F approx. 45 min.
 at + 30°C/86°F approx. 30 min.

Application temperature
 (air and substrate): from +5°C to 30°C
 (+41 - +86°F)

Consumption rate: (dry bagged mortar)
 approx. 1.80 kg/m² per 1 mm thick
 (approx. 1.50 kg/yd² per 1 mm thick)

Layer thicknesses:

- 5 mm min. layer thickness,
- 25 mm max. layer thickness per application,
- 50 mm max. overall layer thickness,
- 100 mm localized application

5. Packaging

25 kg sack

6. Storage

Storage life 12 months in unopened original packaging under dry, frost-free conditions.



7. Hazardous substances ordinance class

Xi	Irritant
R 38:	Irritating to the skin.
R 41:	Risk of serious damage to the eyes.
S 2:	Keep out of reach of children.
S 22:	Do not inhale dust.
S 24/25:	Avoid contact with skin and eyes.
S 26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39:	Wear suitable gloves and eye/face protection.
S 46:	If swallowed, seek medical advice immediately and show this container or label.

8. Transport hazard class

n/a

9. Disposal

EC Waste Code no. 17 01 01

Any residues must be emptied out of containers before recycling.

10. Safety instructions

Provide appropriate protection for surfaces which are not to be coated (e.g. glass, natural stone, ceramics etc.). Any splashes on surrounding surfaces or traffic areas must be rinsed off immediately with plenty of water. Protect the eyes and skin from splashes. Keep out of reach of children.

Low chromate content to TRGS 613.

Giscode: ZP 1

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