Omnitek RM Fiber

Polymer modified, fibre reinforced, high strength waterproof repair mortar for application in medium to low thickness.

• field of application

- Structural and non-structural concrete repairs according to methods 3.1 and 4.4 of EN 1504-9:1997.
- Filling joints between concrete segments, prefab elements, kicker joints and wall and floor junctions.
- Levelling rough surfaces.

• advantages

Durable
- High quality structural repair mortar classified as R4 according to EN1504-3.
- Excellent adhesion.
- Water vapour permeable with very low capillary absorption coefficient.
- Freeze-thaw resistant.
- Carbonatation resistant.
- Shrink compensated.

Easy application
- No need for formwork. Can be applied up to 20 mm vertically per layer without sagging, up to 50 mm horizontally and up to 10 mm overhead.
- Thixotropic.
- Equipment can be cleaned with water.

Environmentally friendly
- Cement based.
- Chlorine free.

• description

Omnitek RM Fiber is a cement based powder containing selected silica's, fibres and modifiers. When mixed with clean water Omnitek RM Fiber becomes a fast setting, polymer modified, waterproof repair mortar. Omnitek RM Fiber is classified as an R4 class structural repair mortar according to EN1504-3 and is suitable for structural and non-structural concrete repairs. Omnitek RM Fiber is not to be considered as a waterproofing coating or render, but because of the low capillary absorption it is ideally suited for preparing surfaces before the application of a waterproofing treatment. For ease of application, Omnitek RM Fiber is a thixotropic, shrink compensated product.

• application

1. Substrate preparation (See EN1504-10 part7)

- Application surfaces should be dampened in order to control absorption and prevent fast loss of water from the mortar.

For concrete repair

- Remove all damaged concrete back to sound base. Provide a minimum depth of 10 mm for all concrete repairs.
- In case of corroded rebar repairs, cut all concrete back to a minimum of 20 mm behind the exposed and corroded reinforcement steel. The application area needs to be 50 mm wider than the edges of the corrosion on the steel reinforcement.
- Remove all loose rust and scale from the reinforcement bars by using a needle gun or by abrasive blasting.
- Remove dust and particles resulting from surface preparation with clean high pressure water.
- In case of exposed reinforcement steel, this needs to be treated with Omnitek CPC according to the application instructions in the respective Technical Data Sheet.

Joint cove fillet

- Cracks and holes should be chased out to a minimum width and depth of 10 mm, cutting the sides as square as practicable. Undercut if possible. Avoid leaving a V-section. Do not featheredge. Flush out the hole or crack with water at high pressure to remove all loose particles and dust.
- All surfaces must be dampened with clean water immediately prior to the application of a cove fillet with Omnitek RM Fiber.

2. Mixing instructions

- Mix 25 kg Omnitek RM Fiber powder with 3,4-3,6 litres clean water with a forced-action spiral mixer (400-600 rpm).
- Pour 2/3 of the water in an appropriate mixing vessel.
- Slowly add the powder to the water and mix for 3 minutes until a lump free mixture is obtained. Regularly scrape the sides of the mixing trough to avoid lumps.
- Add the remaining water and mix for 3 more minutes.
- Do not prepare more material than can be applied in 30 minutes (at 20°C). When the mortar starts to set during application, remix but never add extra water.

3. Application

- Application surface must be pre-damped in order to control absorption of mixing water and to prevent a fast loss of water. The effect to be obtained is a dark mat appearance without free standing water.
- Apply Omnitek RM Fiber by trowel. Compact the mortar after application the repair area.
- In overhead applications a bonding slurry made by mixing 4 l of water per 25 kg Omnitek RM Fiber needs to be applied. Apply the bonding slurry with a brush to cover the entire surface. Apply Omnitek RM Fiber wet-in-wet into the bonding slurry.
- Do not apply Omnitek RM Fiber if the ambient temperature is below 5°C or expected to fall below 5°C within 24 hours.

Concrete repairs

- Press firmly into the application area to ensure proper adhesion and to compact the material. Take particular care in the areas around and behind the reinforcement bars.
- Omnitek RM Fiber can be applied in several layers with a minimum application thickness of 5 mm. In vertical surfaces up to 20 mm can be applied without formwork. In horizontal surfaces, the maximum application thickness is 50 mm, without losing mechanical properties. For overhead applications, the maximum layer thickness is 10 mm.

Wall-Floor joint reglets

- Fill the prepared joint completely and add extra material to make a fillet. Work the extra material with a trowel into a triangular section in the wall-floor junction.

4. Curing

- In warm or windy conditions, it is recommended to protect the applied material from dehydration. This can be achieved by mist-spraying with clean water or protective tarpaulins until the initial set has taken place.
- In cold conditions cover with insulated tarpaulin, polystyrene or other insulating material. Protect the repaired surfaces against frost and rain until final set has taken place.
- Omnitek RM Fiber can be coated after 3 to 7 days with protective or waterproofing coatings like Aquatek Elastic 2C, depending on the ambient conditions.

5. Cleaning and Maintenance

- Mixing and application equipment should be cleaned immediately with clean water. Remove hardened material mechanically.

• technical data/properties

Property	Value
Density	2,1 kg/dm^3
Adhesion to concrete	2,8 N/mm^2
Compressive strength (1d)	> 10 N/mm^2
Compressive strength (7d)	40 N/mm^2
Compressive strength (28d)	69,4 N/mm^2
Flexural strength (1d)	> 5 N/mm^2
Flexural strength (7d)	10 N/mm^2
Flexural strength (28d)	13,1 N/mm^2
E-Modulus (28d)	31,7 GPa
Capillary absorption coefficient	0,07 kg·m^{-2}·h$^{-0,5}$
Application thickness • Minimum layer thickness • Layer thickness in overhead applications without formwork • Layer thickness in vertical applications without formwork • Layer thickness in horizontal applications	 > 5 mm < 10 mm < 20 mm < 50 mm
Minimum application temperature	5°C
Maximum application temperature	30°C
Pot life	30 min
Setting time – initial set	4 h
Setting time – final set	9 h
Maximum grain size	2 mm
Fibres	polypropylene

(*)Typical values - all tests were executed under a conditioned temperature of 21°C and 60% RH.

• appearance

Cementitious grey powder.

• consumption

Approx. 2,1 kg/m^2 per millimetre thickness. (1 bag of 25 kg Omnitek RM Fiber = approx. 11,5 l prepared mortar).

• packaging

25 kg bags with plastic liner.
42 bags per pallet (1050 kg).

• storage

Omnitek RM Fiber should be stored under cover, clear of the ground in a dry location. Protect the materials from moisture and frost. Shelf life: 1 year.

• health & safety

Omnitek RM Fiber is a cement based product and can therefore cause burns to skin and eyes, which should be protected during application. Always wear gloves and safety goggles. Wearing a dust mask is recommended. Treat splashes to eyes and skin immediately and abundantly with clean water. Consult a doctor when irritation continues. For full information, consult the relevant Material Safety Data Sheet.

• certification

CE

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0370-CPD-1045
EN 1504-3
Products for the structural repair of concrete with a PCC mortar
(Based on hydraulic cement)

Compressive strength	Class R4
Chlorine content	≤ 0,05%
Adhesion	≥ 2,0 Mpa
Carbonatation resistance	Pass
Modulus of elasticity	31,7 GPa
Thermal compatibility Part 1	≥ 2,0 N/mm^2
Capillary absorption	≤ 0,5 $kg.m^{-2}.h^{-0,5}$
Reaction to fire	A1 $A1_{FL}$
Dangerous substances	Complies with 5.4.

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