

# Nafufill KM 250

Fire-resistant, fibre-reinforced PCC/SPCC-concrete replacement for repair in statically relevant and non-statically relevant areas



## PRODUCT PROPERTIES

- One-component, hand and wet spray application
- Statically allowable
- High carbonation resistance
- Resistant to de-icing salts, chloride-proof
- Registered with DGNB (Code: 5P2HPT)
- Non-flammable according to EN 13501-1 - building material class A1
- Fire-resistant according to temperature time curves of ZTV-ING, part 5 and EBA-guideline
- Fire-resistant according to temperature time curve hydrocarbon
- Fire-resistant according to standard temperature curve (ETK) of ISO 834, fire resistance class F90/F120
- Class R4 according to EN 1504 part 3

## AREAS OF APPLICATION

- Concrete replacement according to ZTV-ING, chapter 3 solid construction, section 4 for areas of application SPCC and PCC II - dynamically and non-dynamically loaded areas
- SPCC/PCC-concrete replacement (SRM, RM) according to ZTV-W LB 219 for repair of water structures, suitable for exposure classes XC 1-4, XF 1-4, XW 1-2, XD 1-3, XS 1-3, XM 1, XA 1-2, X0, XALL, XDYN, XSTAT, XBW1+2, WO, WF and WA
- SPCC/PCC-concrete replacement according to DAfStb-repair standard, approved for stress classes M2 and M3
- Repair- and anode embedding mortar according to EN 12696 for repair principle "Cathodic corrosion protection of steel in concrete" (also horizontal areas)
- In combination with MC-Additiv W certified LAU-repair mortar
- Certified and classified according to EN 1504 part 3 for principles 3, 4 and 7, procedures 3.1, 3.3, 4.4, 7.1, 7.2 and 7.4

## APPLICATION ADVICE

**Substrate Preparation:** See leaflet "General Application Advice Coarse Mortars / Concrete Replacement Systems".

**Bond coat:** For hand application Nafufill KM 250 has to be used as bonding coat. See leaflet "General Application Advice Coarse Mortars / Concrete Replacement Systems".

**Mixing:** Nafufill KM 250 is added to the water under constant stirring and mixed until a homogenous, lump-free and workable mortar is achieved. Forced action mixers or slowly rotating double mixers must be used for mixing. Mixing by hand and preparation of partial quantities is not allowed. Mixing takes at least 5 minutes.

**Mixing Ratio:** Please see "Technical Data" table. For a 25 kg pack of Nafufill KM 250 approx. 3.75 to 4.00 litres of water are required. As with other cement-bound products the quantity of added water may vary.

**Application:** Nafufill KM 250 can be applied by hand or wet spraying. The material may be applied in one or more layers. A worm pump with adjustable discharge flow is advised for spray application. Please request our assistance or our spraying technique equipment planner leaflet.

**Finishing:** After application Nafufill KM 250 may be smoothed and finished with a wooden or plastic float or with a porous sponge rubber squeegee.

**Curing:** Nafufill KM 250 must be prevented from drying out too rapidly and protected from direct sunlight and wind exposure. Curing usually takes 3 days.

## TECHNICAL VALUES & PRODUCT CHARACTERISTICS

Characteristic	Unit	Value	Comments
Maximum grain size	mm	2	
Mixing ratio	p.b.w.	100 : 15 - 16	powder component : water
Working time	minutes	60	at 5° C
		45	at 20 °C
		30	at 30 °C
Application conditions	°C	≥ 5 ≤ 30	Temperatura del aire, soporte y material
Consumption (applied by hand)	kg/m <sup>2</sup> /mm	1.8	factory-dried mortar
Consumption (spray application)	kg/m <sup>2</sup> /mm	1.85	factory-dried mortar
Flexural strength	N/mm <sup>2</sup>		applied by hand
48 h		4.7	
7 d		5.8	
28 d		8.5	
Flexural strength	N/mm <sup>2</sup>		spray application
7 d		5.3	
28 d		9.3	
Compressive strength	N/mm <sup>2</sup>		applied by hand
48 h		34.4	
7 d		50.4	
28 d		55	
Compressive strength	N/mm <sup>2</sup>		spray application
7 d		57.5	
28 d		68.1	
E-modulus (applied by hand)	N/mm <sup>2</sup>	22,600	after 28 days (static)
		32,500	after 28 days (dynamic)
E-modulus (spray application)	N/mm <sup>2</sup>	26,000	after 28 days (static)
		34,000	after 28 days (dynamic)
Layer thickness <sup>1)</sup>	mm	6	minimum layer thickness per pass/operation
		30	maximum layer thickness per pass/operation
		60	maximum total layer thickness
		100	as a reprofiling mortar
Fresh mortar bulk density (PCC)	kg/dm <sup>3</sup>	2.06	
Fresh mortar bulk density (SPCC)	kg/dm <sup>3</sup>	2.15	
Chloride migration coefficient	m <sup>2</sup> /s	1.28 · 10 <sup>-12</sup>	spray method
Shrinkage (applied by hand)	mm/m	0.78	after 28 days
Shrinkage (spray application)	mm/m	0.77	after 28 days

All technical values are laboratory results determined at 21°C ±2°C and 50% relative humidity.

1) Within the scope of certification according to ZTV-ING the minimum layer thickness per work step is 10 mm. Permitted total layer thickness in line with ZTV-ING: 50 mm.

Form	pulverous
Colour	Cement grey
Delivery form	25 kg bag
Storage	Can be stored in cool and dry conditions for at least 12 months in original unopened packs.
Packaging disposal	Make sure single-use containers are completely empty.

**Note:** The information contained in this data sheet is based on our experience and is correct to the best of our knowledge. It is, however, not binding. It will need to be adapted to the requirements of the individual structure, to the specific application and to non-standard local conditions. Application-specific conditions must be checked in advance by the planning engineer/specifier and, where different from the standard conditions indicated, will require individual approval. Technical advice provided by MC's specialist consultants does not replace the need for a planning review by the client or its agents in respect of the history of the building or structure. Subject to this prerequisite, we are liable for the correctness of this information within the framework of our terms and conditions of sale and delivery. Recommendations of our employees deviating from the information given in our data sheets are only binding for us if they are confirmed in writing. In all cases, the generally accepted rules and practices reflecting the current state of the art must be observed. The information given in this technical data sheet is valid for the product supplied by the country company listed in the footer. It should be noted that data in other countries may differ. The product data sheets valid for the relevant foreign country must be observed. The latest technical data sheet shall apply to the exclusion of previous, duly superseded versions; the date of issue in the footer must be observed. The latest version is available from us on request or may be downloaded from our website. [2400020502]