BE SURE. BUILD SURE.

Nafufill KM 250

Fire-resistant, fibre-reinforced PCC/SPCC (Polymer Cement Concrete) - concrete replacementfor repair areas.

PRODUCT PROPERTIES:

- One-component, hand and wet spray application.
- Bearing capacity like concrete.
- High carbonation resistance.
- Resistant to de-icing salts, chloride-proof.
- 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 NOTES:

- **Substrate Preparation:** See leaflet “General Application Advice Coarse Mortars / Concrete Replacement Systems”.
- **Bond coat:** For hand application Nafufill KMH has to be used as bonding coat. See leaflet “General Application Advice Coarse Mortars / Concrete Replacement Systems”.
- **Mixing:**
  - 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. 3.0 to 3.5 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.

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- **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 DATA:

Characteristic	Unit	Value of PCC**	Value of SPCC**	Comments
Fresh mortar bulk density	kg/dm³	2.06	2.15	
Flexural strength / compressive strength	MPa	4.7/34.4 5.8/50.4 8.5/55.0	 5.3/57.5 9.3/68.1	After 2 days After 7 days After 28 days
Dynamic Module	MPa	32,500	34,000	After 28 days
Shrinkage	mm/m	0.78	1.0	After 28 days
Consumption (dry mortar)	kg/m²/mm	1.80	1.85	
Maximum grain size	mm	2		
Static Module	MPa	22,600		After 28 days
Resistance to carbonation	mm	0		After 90 days
Chloride migration coefficient	m²/s	$2.53x10^{-12}$		
Working time	minutes	60 45 30		At 5°C At 20°C At 30°C
Layer thickness*	mm	6 30 60*** 100		Minimum layer thickness per pass/operation Maximum layer thickness per pass/operation Maximum total layer thickness As a reprofiling mortar
Application conditions	°C	≥ 5 - ≤ 30		Air, material and surface temperature
Mixing ratio	p.b.w.	25 : 3.0 – 3.5		powder component : water

** Within the scope of certification according to ZTV-ING, the minimum thickness of each layer in each working step is 10 mm.*
*** All technical values are determined at + 23°C and 50% relative humidity.*
**** Total permissible layer thickness based on ZTV-ING: 50 mm*

PRODUCT CHARACTERISTICS:

Color	Cement grey
Packaging	25kg/ bag
Shelf-life & Storage	Can be stored for 8 months for unused sets in a cool, dry place. Avoid frost!
Disposal	Packages should be completely emptied.

Note: The information provided here is based on our experience and correct to the best of our knowledge. It is, however, not binding. It will need to be adapted to the requirements of the individual building projects, to the specific application and to non-standard local conditions. Our data refers to the accepted engineering rules, which have to be observed during application. Given these preconditions we shall be liable for the accuracy of the information given as outlined in our sales and delivery terms and conditions. Recommendations by our employees that deviate from this information are only binding for us if they have been confirmed in writing. In all cases, the generally accepted rules and practices reflecting the current state of the art must be adhered.

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