

Nafufill SM 04

Microsilica-modified spray mortar
for the repair and improvement of concrete structures



PRODUCT PROPERTIES

- One-component
- Application by dry spraying
- Application by hand in combination with a bond coat
- Resistant to temperature, frost-thaw and de-icing salts
- Impervious to water in accordance with DIN 1045
- Increased bonding capacity on wall and overhead areas
- Classified as type 1 in accordance with DVGW-leaflet W 300 for potable water tanks
- Tested and approved according to DVGW-leaflet W 347
- Type 1 does not require any approval in accordance with DVGW-leaflet W 270
- Class R3 according to EN 1504 part 3

AREAS OF APPLICATION

- Base mix according to DAfStb dry concrete guideline for the production of dry spray mortar according to DIN EN 14487 / DIN 18551
- Dry sprayed mortar for partial and large-scale repair of concrete components on walls and overhead areas
- Repair of local damages also possible by hand application in combination with a bond coat
- Suitable for creation of levelling layers in horizontal areas, both interior and exterior
- According to EN 206/DIN 1045 applicable for exposure classes XC1-4, XF1-4, XA1-2, W0, WF, WA and XTWB according to DVGW W 300-5
- Certified according to EN 1504 part 3 for principles 3 and 7, procedures 3.1, 3.3, 7.1 and 7.2

APPLICATION ADVICE

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

Reinforced steel: See leaflet "General Application Advice Coarse Mortars/Concrete Replacement Systems". Nafufill MK should be used as corrosion protection coat.

Pre-wetting: Prior to application of Nafufill SM 04 the substrate must be pre-wetted thoroughly. If the concrete elements are dried out completely, pre-wetting should start one day prior to application. A closed water film must be avoided. When beginning to apply, the substrate should be slightly damp but not saturated with water.

Application / dry spraying technique: The water intake of the nozzle's mixing unit is to be adjusted to achieve a homogeneous and dust-free spray mortar. The spray angle between spray nozzle and substrate must be 90°. The distance of the nozzle to the substrate must be at least 0.5 m. Angle and distance may be adjusted when spraying behind reinforcement. Nafufill SM 04 may be applied in one or several layers. The fresh surface can be left rough as sprayed or finished. Finishing of Nafufill SM 04 is not permitted after it has begun to set.

Hand application: For repair of local damages and for creation of levelling layers on horizontal areas Nafufill SM 04 may also be applied by hand. Circular pan mixers or slowly rotating double-mixers must be used for mixing. Mixing takes 3 minutes. Mixing by hand or preparation of partial quantities is not permitted. For a 25 kg bag of Nafufill SM 04 approx. 2.75 to 3.0 litres of water are required.

Hand application / bond coat: Nafufill BC is to be used as bond coat for hand application. See leaflet "General Application Advice Coarse Mortars/Concrete Replacement Systems".

Curing: Nafufill SM 04 must be cured for 5 days using moist jute and plastic foil. The jute must not dry out during this time and must be kept moist. Alternatively Nafufill SM 04 may also be cured with the curing agent Emcoril Protect M-lite.

TECHNICAL VALUES & PRODUCT CHARACTERISTICS

Characteristic	Unit	Value	Comments
Maximum grain size	mm	4	
Mixing ratio	p.b.w.	100 : 11 - 12	powder component: water
Working time	minutes	60	at 5°C
		45	at 20° C
		30	at 30°C
Application conditions	°C	≥ 5 ≤ 30	air, substrate and material temperatures
Consumption	kg/m ² /mm	1.91	factory dry mortar (without rebound)
Flexural strength	N/mm ²		spray application
28 d		≥ 5	
Compressive strength ¹⁾	N/mm ²		applied by hand
7 d		28.6	
28 d		39.2	
Compressive strength			spray application
28 d		> 40	
E-modulus (spray application)	N/mm ²	32.700	after 28 days (static)
E-modulus (applied by hand)	N/mm ²	25.700	after 28 days (static)
Layer thickness	mm	12	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	kg/dm ³	2.14	
Shrinkage	mm/m	0.76	after 28 days
Water penetration depth ²⁾	mm	< 15	EN 12390-8
		< 1	EN 12390-8

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

1) Strength class C30/37 by hand application according to DIN EN 206

2) sample preparation by hand

3) sample preparation in spray application

Colour shade	Cement grey
Delivery form	25 kg bag, loose
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. [2300011749]