

# Nafufill GTS-HS

**One-component, highly sulphate-resistant SPCC-concrete replacement for repair in areas relevant and irrelevant for structural integrity**

## Product Properties

- Polymer-modified, application by dry spraying technique
- Low shrinkage, low E-modulus, chloride-proof
- Tricalcium-aluminate-free binder, low active alkali content
- Resistant to elevated temperatures, frost and de-icing salt
- Statically countable
- Non-flammable, building material class A1 according to EN 13501-1
- Class R4 according to EN 1504 part 3

## Areas of Application

- Concrete replacement according to ZTV-ING, part 3 Solid Construction, paragraph 4, field of application SPCC-areas relevant and irrelevant for structural integrity, vertical and overhead
- SPCC-concrete replacement according to ZTV-W LB 219, suitable for exposure classes XC 1-4, XD 1-3, XF 1-4, XS 1-3, XW 1-2, XA 1-3 and XM 1
- SPCC-concrete replacement according to DAfStb-repair guideline for structural reinforcement of concrete structures, stress class M3
- Repair and anode embedding mortar according to EN 12696 for repair principle “Cathodic corrosion protection of steel in concrete“
- Certified and classified according to EN 1504 part 3 for principle 3, 4 and 7, procedure 3.3, 4.4, 7.1 and 7.2

## Application

### 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 is to be used as corrosion protection.

### Pre-wetting

Before Nafufill GTS-HS is applied the substrate must be pre-wetted thoroughly. If the concrete parts are completely dried out, the pre-wetting should start one day before application. There should be no standing water on the surface. When beginning to apply the surface should be slightly damp, but not saturated with water.

### Application / Spraying

The water intake of the nozzle mixing machine should be adjusted to create a homogenous and dust-free spray-mortar. The spray angle between spray-nozzle and ground should be exactly 90°

and the distance between ground and nozzle at least 0.5 meters. When spraying behind reinforcements, the angle and distance may be adjusted as necessary. Nafufill GTS-HS can be applied in one or more layers. The interval between individual work steps should be at least 1 hour. The freshly sprayed surface can be left rough as sprayed or levelled with a trowel. It is not allowed to finish Nafufill GTS-HS after it has begun to set. If it is used in the areas of BMV, the application advice in the General Building Supervision Test Certificate are to be observed.

### General Information

For information on equipment technology, compressor, rebound, supportive casing and application conditions, see leaflet “General Application Advice Dry Spray Mortar”.

### Curing

Nafufill GTS-HS must be prevented from drying out too rapidly and protected from direct sunlight and wind exposure. Curing usually takes 3 days.



## Technical Data for Nafufill GTS-HS

Characteristic	Unit	Value*	Comments
Largest grain size	mm	4	-
Fresh mortar density	kg/dm <sup>3</sup>	2.18	-
Dry mortar density	kg/dm <sup>3</sup>	2.07	-
Bending tensile/ compressive strength	MPa	7.1/37.0 8.8/50.0	after 7 days after 28 days
Dynamic E-modulus	MPa	24,500	after 28 days
Static E-modulus	MPa	20,000	after 28 days
Shrinkage	mm/m	0.60	after 90 days
Chloride migration coefficient	m <sup>2</sup> /s	1.39x10 <sup>-12</sup>	
Coverage (dry mortar)	kg/m <sup>2</sup> /mm	2.00	+ rebound
Finishing time	minutes	20 - 30	at + 20 °C
Layer thickness	mm	10 25 50 100	min. layer thickness per work step max. layer thickness per work step max. total layer thickness reprofiling of disruptions
Application conditions	°C	≥ 5 - ≤ 30	air, material and substrate temperature

## Product Characteristics for Nafufill GTS-HS

Colour	cement-grey
Delivery	25 kg bags, silo material up to 18 t
Storage	Can be stored in cool and dry conditions for at least one year in original unopened packs.
Disposal	Packs must be emptied completely.

### Safety Advice

Please take notice of the safety information and advice given on the packaging labels and safety information sheets.

\*All values have been determined in the lab at + 23 °C and 50 % relative humidity

**Note:** The information on this data sheet is based on our experiences and correct to the best of our knowledge. It is, however, not binding. It has to be adjusted to the individual structure, application purpose and especially to local conditions. Our data refers to the accepted engineering rules, which have to be observed during application. This provided we are liable for the correctness of this data within the scope of our terms and conditions of sale-delivery-and-service. Recommendations of our employees which differ from the data contained in our information sheets are only binding if given in written form. The accepted engineering rules must be observed at all times.

Edition 12/19. Some technical changes have been made to this print medium. Older editions are invalid and may not be used anymore. If a technically revised new edition is issued, this edition becomes invalid.