BUILDING TRUST

PRODUCT DATA SHEET

Sika MonoTop®-352 NFG

R3 LIGHT WEIGHT, HIGH BUILD CONCRETE REPAIR MORTAR WITH CORROSION INHIBITOR

DESCRIPTION

Sika MonoTop®-352 NFG is a 1-component, polymer modified, fibre reinforced, low shrinkage light weight repair mortar with corrosion inhibitor meeting the requirement of class R3 of EN 1504-3.

USES

- Suitable for restoration work (Principle 3, method 3.1 & 3.3 of EN 1504-9). Repair of spalling and damaged concrete in buildings, bridges, infrastructure and superstructure works.
- Suitable for structural strengthening (principle 4, method 4.4 of EN 1504-9). Increasing the bearing capacity of the concrete structure by adding mortar.
- Suitable for preserving or restoring passivity (principle 7, method 7.1 and 7.2 of EN 1504-9). Increasing cover with additional mortar and replacing contaminated or carbonated concrete.
- Suitable for use as a repair mortar prior to application of Sikagard 62 and 63N

CHARACTERISTICS / ADVANTAGES

- Polymer modified for increased durability
- Easy to apply and superior finishing
- Suitable for hand and machine application
- High Build can be applied up to 75 mm thick per application layer
- Class R3 of EN 1504-3
- Low density but still suitable for structural repair
- Sulphate resistant
- Very low shrinkage
- Does not require a bonding primer even when manually applied
- Contains corrosion inhibitor
- Low permeability
- Compatible with Sika® FerroGard® Sacrificial Anode System

APPROVALS / CERTIFICATES

- Rapid Chloride Permeability and Electrical Resistivity of SMT-352 NFG to ASTM 1202 dated 25.05.2010
- Potable water approved to AS/NZS 4020:2018
- Qld Roads (TMR) Section 5. Registered and Conforming Products. Part 5.34 Repair Mortars
- RTA Rapid Mortar Bar Test RTA T363 - Alkali Reactive Particles - Non-Reactive.

PRODUCT INFORMATION

Composition	Portland cement, corrosion inhibitor, selected light weight aggregates and polymer modified
Packaging	20 kg bags
Shelf life	12 months
Storage conditions	Store properly in undamaged original sealed packaging, in dry cool conditions.
Appearance and colour	Grey powder
Maximum grain size	D_{max}: 2 mm

Density	Fresh mortar density ~1.8 kg/l	
Soluble chloride ion content	≤ 0.05%	(EN 1015-17)

TECHNICAL INFORMATION

Compressive strength	1 day	~ 8 MPa	(AS 1478.2:2005)
	7 days	~ 22 MPa	
	28 days	~ 30 MPa	
	Material and curing conditions at 23°C / 50% r.h. *Above results based on 50mm x 50mm cube @ 3.0lts water per 20kg bag*		
Modulus of elasticity in compression	≥ 20 GPa at 56 days		(AS 1012.17)
Tensile strength in flexure	1 day	~ 3 MPa	(ASTM C348)
	7 days	~ 4 MPa	
	28 days	~ 6 MPa	
Splitting tensile strength	~ 3.2 MPa at 28 days		(AS 1012.10)
Tensile adhesion strength	≥ 1.5 MPa		(EN 1542)
Shrinkage	~ 550 µm/m at 23°C / 50% relative humidity at 28 days		(AS 2350.13)
Restrained shrinkage / expansion	≥ 1.5 MPa		(EN 12617-4)
Electrical resistivity	7 days	~ 12,000 Ω.cm	(FM 5-578) *50mm Probe Spacing*
	28 days	~ 28,000 Ω.cm	
	56 days	~ 45,000 Ω.cm	
	90 days	~ 59,000 Ω.cm	
Capillary absorption	~ 2.4 x 10^{-4} (mm/Vs)		(ASTM C 1585)
Chloride ion diffusion resistance	4.11E-12 (m2/s)		(NT443)
Carbonation resistance	d_k ≤ control concrete (MC(0.45))		(EN 13295)

SYSTEM INFORMATION

System structure

Sika MonoTop®-352 NFG is part of the range of Sika mortars complying with the relevant part of European Standard EN 1504 and comprising of:

Bonding Primer / Reinforcement Corrosion Protection	
Sika MonoTop®-910 N	Normal Use
SikaTop® Armatec® 110 EpoCem®	Demanding requirements
Repair Mortar	
Sika MonoTop®-352 NFG	Class R3 concrete repair hand and machine applied
Levelling Mortar	
Sika MonoTop®-723 N	Normal use
Sikagard®-720 EpoCem®	Demanding requirements

APPLICATION INFORMATION

Mixing ratio	2.8 to 3.3 litres of water for 20 kg powder
Consumption	This depends on the substrate roughness and thickness of layer applied. As a guide, ~ 15.6 kg of powder per cm thick per m^2
Yield	20 kg of powder yields approximately 12.8 litres of mortar

Layer thickness	min. 4 mm / max. 75 mm
Ambient air temperature	+5 °C minimum; +30 °C maximum
Substrate temperature	+5 °C minimum; +30 °C maximum
Initial set time	~ 3 hours
Final set time	~ 6 hours

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Refer to the Method Statement for Concrete Repair using Sika MonoTop® system for more information regarding substrate preparation or refer to the recommendations provided in EN 1504-10
- Avoid application in direct sun and/or strong wind.
- Do not add water over recommended dosage
- Apply only to sound, prepared substrate
- Do not add additional water during the surface finishing as this will cause discolouration and cracking
- Protect freshly applied material from freezing

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Concrete:
The concrete shall be thoroughly clean, free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials. Delaminated, weak, damaged and deteriorated concrete and where necessary sound concrete shall be removed by suitable means.
Steel Reinforcement:
Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed. Surfaces shall be prepared using abrasive blast cleaning techniques or high pressure water-blasting to Sa 2 (ISO 8501-1) Reference shall be made to EN1504-10 for specific requirements.

MIXING

Sika MonoTop®-352 NFG can be mixed with a low speed (< 500 rpm) hand drill mixer or for machine application, using a force action mixer 2 to 3 bags or more at once depending the type and size of mixer. In small quantity, Sika MonoTop®-352 NFG can also be manually mixed.

Pour the recommended water in a suitable mixing container. While stirring slowly, add the powder to the water and mix thoroughly at least for 3 minutes during the mixing time adding additional water if necessary to the maximum specified amount and adjust to the required consistency.

APPLICATION

Bonding Primer:
On a well prepared and roughened substrate a bonding primer is generally not required for this product. When a bonding primer is required, refer to the **System Information** above for compatible Sika products and refer to the relevant Product Data Sheet for instructions. All small amount of Sika MonoTop®-352 NFG can also be mixed slightly wetter than normal and used as a scratch coat to promote adhesion of the repair mortar to the substrate. Any bonding primer shall be applied on a pre-wet substrate in saturated surface dry (SSD) condition and subsequent application of the repair mortar shall be applied wet on wet with the bonding primer.
Reinforcement Corrosion Protection:
Where a reinforcement coating is required the application of a repair mortar shall be applied wet on dry with the reinforcement corrosion protection. Refer to the **System Information** above for compatible Sika products and refer to the relevant Product Data Sheet for more detailed information about the reinforcement corrosion product.
Sika MonoTop®-352 NFG can be applied either manually using traditional techniques or mechanically using wet spray equipment. Thoroughly pre-wet the prepared substrate a recommended 2 hours before application. Keep the surface wet and maintain in SSD condition. The surface shall appear a dark matt appearance without glistening and surface pores and pits shall not contain water.
When manually applying first make a scratch coat by firmly scrapping the repair mortar over the substrate surface to form a thin layer and fill any pores or pits in the surface. Ensure the whole surface to be repaired is covered by the scratch coat. Build up layers from bottom to top by pressing mortar well into the repair area. The surface can be finished according to the requirements using a float while wet or with a relevant rough-cast tool as soon as the mortar has started to stiffen.

CURING TREATMENT

Protect the fresh mortar immediately from premature drying using an appropriate curing method e.g. curing compound, moist geotextile membrane, polythene sheet etc.

CLEANING OF EQUIPMENT

Clean all tools and application equipment with water immediately after use. Hardened material can only be mechanically removed.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product’s suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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