

Sika MonoTop®-436 N

R4 Pourable Repair Mortar

Product Description

Sika MonoTop®-436 N is a 1-component pre-bagged, pourable, self-compacting, repair mortar meeting the requirements of class R4 of EN 1504-3.

Uses

- Suitable for restoration work by recasting (Principle 3, method 3.2 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

Repair of concrete on buildings and, civil engineering structures for areas including:

- Beams
- Balconies
- Columns
- Stairs
- Decks
- Walls etc.

Characteristics / Advantages

- Class R4 of EN 1504-3
- Very good flow properties
- Self compacting micro-concrete
- Placed up to 300mm in one pour
- Chloride Free
- Carbonation Resistant
- Excellent adhesion to host Concrete
- Low water and chloride permeability
- Low shrinkage
- Finished surface can be painted after formwork is removed
- Complies with test requirements of AS/NZS 4020:2005 for "Use in Contact with Drinking Water".

Product Data

Form

Appearance /Colour Grey powder

Packaging 20 kg bag

Storage

Storage Conditions/ Shelf-Life 6 months from date of production if stored in undamaged and unopened, original sealed containers, in dry conditions at temperatures between +5°C and +30°C.

Construction



Technical Data

Chemical Base Cement blend, selected aggregate and additives.

Density Fresh mortar density: ~ 2.1 kg/l (wet)

Layer Thickness 300 mm maximum thickness.

Final Set ~ 7 hours

Mechanical / Physical Properties

Compressive Strength (AS/NZS 2350)

1 day 12MPa

7 day 50MPa

28 day 70MPa

Flexural Strength (ASTM C348)

1 day 2.5MPa

7 day 7.5MPa

28 day 9.0MPa

Workability (AS1478.2) 500-600mm

Resistivity

(Werner Probe method) 28 day 13,000 (ohm/cm)

System Information

System Structures Sika MonoTop[®]-436 N is part of the range of Sika mortars complying with the relevant part of European Standard EN 1504 and comprising of:

Reinforcement Corrosion Protection

- Sika MonoTop[®]-910 N:
- SikaTop[®] 110 EpoCem[®]:

Form and pour repair mortar:

- Sika MonoTop[®]-436 N: pourable structural repair (R4 type)

Fairing coat:

Sika MonoTop[®]-723N: Pore sealer and smoothing mortar

Application Details

Consumption 1 bag yields approximately 10.5 litres of mortar

Substrate Quality

Concrete:

The concrete shall be free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials.

Steel reinforcement:

Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed.

Reference shall be made to EN1504-10 for specific requirements.

Substrate Preparation	<p><i>Concrete:</i> Delaminated, weak, damaged and deteriorated concrete and where necessary sound concrete shall be removed by suitable means.</p> <p><i>Steel reinforcement:</i> Surfaces shall be prepared using abrasive blast cleaning techniques or high pressure water-blasting to SA 2 (ISO 8501-1)</p> <p><i>Bonding Primer:</i> On a well prepared and roughened substrate a bonding primer is generally not required. When a bonding primer is not required pre-wet the surface continuously for 2 - 6 hours with clean water. Immediately before casting remove all water from formwork. The surface shall not be allowed to totally dry before application of the concrete repair mortar. The surface shall achieve a dark matt appearance without glistening and surface pores and pits shall not contain water.</p> <p><i>Reinforcement Corrosion Protection:</i> Where a reinforcement coating is required as a barrier (e.g. in case of insufficient concrete cover), apply to the whole exposed circumference two coats of Sika MonoTop®-910 N or SikaTop® 110 EpoCem® (Refer to the relevant Product Data Sheet).</p> <p><i>Formwork:</i> Formwork necessary for casting shall be of adequate strength, non absorbent, treated with release agent and sealed to prevent mortar leakage. Use SikaSwell®-S2 hydrophilic sealant between any joints. Ensure the formwork design includes outlets for extraction of the pre-wetting water and air.</p>
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Application Conditions / Limitations

Substrate Temperature	+5°C min. / +30°C max.
Ambient Temperature	+5°C min. / +35°C max.

Application Instructions

Mixing Ratio	2.5-2.7 litres of water for 20 kg powder		
Mixing	Mix with a low speed (< 500 rpm) hand drill mixer with helical paddle or using a forced pan action mixer. Pour potable water in the correct proportion into a suitable mixing container. While stirring slowly, add the powder to the water. Mixed thoroughly at least for 3 minutes to achieve a uniform lump free consistency		
Application Method / Tools	Immediately after mixing pour ensuring continuous flow during the complete casting operation to avoid trapping air or creating 'cold joints'		
Cleaning of Tools	Clean all tools and application equipment with water immediately after use. Hardened / cured material can only be removed mechanically.		
Pot Life	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">+20°C</td> </tr> <tr> <td style="text-align: center;">40 minutes</td> </tr> </table> <p style="text-align: center;">Only prepare quantity of material which can be handled within pot life time</p>	+20°C	40 minutes
+20°C			
40 minutes			

Notes on Application / Limitations

- For carbonation resistance use a coating complying with EN 1504-2
- Apply only to prepared sound surfaces
- Avoid application in direct sun and/or strong wind
- Do not add water over recommended dosage
- Only prepare quantity of material which can be handled within pot life time
- Do not use vibrators for compaction
- Protect freshly applied material from freezing
- Do not add additional water during the surface finishing as this will cause discoloration and cracking
- Refer to Qualified Engineer for any movement, expansion or cold joint positions
- Do not use a curing agent if coatings are to be applied
- Refer to the Method Statement for Concrete Repair using Sika MonoTop® system for more information regarding substrate preparation or refer to the recommendations in EN 1504-10

Curing Details

Curing Treatment

Protect the fresh mortar from early dehydration using the relevant curing method. Cure for a minimum of 7 days to minimise cracking. Use a 90% efficient curing membrane or polythene sheeting taped down at the edges.

Health and Safety Information

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