

# Sika® MonoTop®-412 MY

## Structural Repair Mortar

### Product Description

Sika® MonoTop®-412 MY is a 1-component, fibre reinforced, low shrinkage structural repair mortar.

### Uses

- Suitable for restoration work. Repair of spalling and damaged concrete in buildings, bridges, infrastructure and superstructure works.
- Suitable for structural strengthening. Increasing the bearing capacity of the concrete structure by adding mortar
- Suitable for preserving or restoring passivity. Increasing cover with additional mortar and replacing contaminated or carbonated concrete.

### Characteristics / Advantages

- Superior workability
- Suitable for hand and machine application
- Can be applied up to 50 mm thick per application layer
- Structural repair
- Very low shrinkage behaviour
- Does not require a bonding primer even when manually applied
- Low permeability

### Tests

### Product Data

#### Form

Appearance / Colour Grey powder

Packaging 25 kg bag

#### Storage

Storage Conditions / Shelf-Life 12 months from date of production if stored properly in undamaged original sealed packaging, in dry cooled conditions.

### Technical Data

Density Fresh mortar density: ~ 2.10 kg/l

Grading  $D_{max}$ : 2.2 mm

Layer Thickness 6mm min / 50 mm max

#### Mechanical / Physical Properties

23°C in lab conditions

#### (Typical Result)



Construction

<b>Compressive Strength</b>	(EN 196-1)		
	1 day	7 days	28 days
	~ 20 N/mm <sup>2</sup> (MPa)	~ 48 N/mm <sup>2</sup> (MPa)	~ 53 N/mm <sup>2</sup> (MPa)
<b>Flexural Strength</b>	(EN 196-1)		
	1 day	7 days	28 days
	~ 4 N/mm <sup>2</sup> (MPa)	~ 6 N/mm <sup>2</sup> (MPa)	~ 7 N/mm <sup>2</sup> (MPa)
<b>System Information</b>			
<b>System Structures</b>	Sika <sup>®</sup> MonoTop <sup>®</sup> -412 MY is part of the range of Sika mortars comprising of: Bonding primer/Corrosion Protection		
	- Sika <sup>®</sup> MonoTop <sup>®</sup> -610 MY:	Normal use	
	- SikaTop <sup>®</sup> Armatec <sup>®</sup> 110 EpoCem <sup>®</sup> :	Demanding requirements	
	Repair mortar:		
	- Sika <sup>®</sup> MonoTop <sup>®</sup> -412 MY:	Structural hand & machine applied repair mortar	
	Fairing coat:		
	- Sika <sup>®</sup> MonoTop <sup>®</sup> -620 MY:	Pore sealer and smoothing mortar	
<b>Application Details</b>			
<b>Consumption</b>	This depends on the substrate roughness and thickness of layer applied. As a guide, ~ 19 kg of powder per cm thick per m <sup>2</sup> 1 bag yields approximately 13.7 litres of mortar		
<b>Substrate Quality</b>	<p><i>Concrete:</i> The concrete shall be free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials.</p> <p><i>Steel reinforcement</i> Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed.</p>		
<b>Substrate Preparation / Priming</b>	<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. The surface shall not be allowed to 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>When a bonding primer is necessary apply Sika<sup>®</sup> MonoTop<sup>®</sup>-610 MY (refer to the relevant Product Data Sheet) or the same product – Sika<sup>®</sup> MonoTop<sup>®</sup>-412 MY – mixed wetter than normally required, applied well on the substrate with a stiff brush. In both cases, subsequent application of the repair mortar shall be done wet on wet.</p> <p><i>Reinforcement coating:</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<sup>®</sup> MonoTop<sup>®</sup>-610 MY (Refer to the relevant Product Data Sheet).</p>		
<b>Application Conditions / Limits</b>			
<b>Temperature</b>	+6°C min.; +40°C max.		

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**Application Instructions**

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**Mixing Ratio** ~ 3.5 to 4 litres of water for 25 kg powder

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**Mixing** Sika® MonoTop®-412 MY 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®-412 MY can also be manually mixed.

Pour the 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 the required consistency

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**Application Method / Tools** Sika® MonoTop®-412 MY can be applied either manually using traditional techniques or mechanically using wet spray equipment.

When a bonding primer is required, ensure it is still tacky when the repair material is pressed on (wet on wet technique). When applied manually, pressed the repair mortar with a trowel, pressing it well on the substrate.

Finishing for both hand and machine application, can be done with the relevant roughcast as soon as the mortar has started to stiffen.

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

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**Pot life** at +23°C: ~30 minutes

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**Notes on Application / Limitations**

- Refer to the Method Statement for Concrete Repair using Sika® MonoTop® system for more information regarding substrate preparation
- 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 discoloration and cracking
- Protect freshly applied material from freezing

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**Curing Details**

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**Curing Treatment** Protect the fresh mortar from early dehydration using the relevant curing method.

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<b>Value Base</b>	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.
<b>Local Restrictions</b>	Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.
<b>Health and Safety Information</b>	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.
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