



TEKAMAL SILIKA MSM ST

Polymer modified cementitious mortar

PRODUCT DESCRIPTION AND USES

Tekamal Silika MSM ST is a high quality thixotropic polymer modified cementitious mortar which beside polymer and special admixtures also contains synthetic PP fibres and silica fume.

It is especially recommended for the repair of damaged concretes in aggressive environments.

Because of its special formulation it can be applied in thicker layers than other repair mortars and it is especially recommended for the machine application onto the vertical and overhead surfaces.

Maximum application thickness depends on the position of the area to be repaired (horizontal, vertical, overhead) and on its smoothness.

ADVANTAGES

Tekamal Silika MSM ST contains silica fume, an amorphous SiO₂ powder of great specific surface, which can fill up even the smallest concrete pores. During hydration process, it reacts with calcium hydroxide, diminishing its capability of reaction and thus reducing corrosion caused by salts which usually react with calcium hydroxide. In consequence hardened mortar has highly reduced permeability and highly increased resistance against abrasion and chemical aggression.

Fresh mortar:

- Simple: the material is pre-packed, requires only mixing with clean water on site.
- Easy to use: applied with brush and trowel and sprayed, too.
- Compliant: cements used are quality assured, complying with European Standards (EN).
- Thixotropic: allows easy trowel application whilst enabling high application thickness: up to 4 cm, almost without rebound.
- Bleeding: does not bleed.
- Better water retention (the fibres retain moisture).

Hardened mortar:

- Compatibility: physical properties of cured material similar to base concrete.
- Reduced settlement, shrinkage and cracking during the critical plastic stage.
- Great strength: adhesive, compressive, bending.
- Low capillary absorption.
- High watertightness.
- High resistance to impact and abrasion.
- High resistance to chemical aggression and frost action.
- Cost effective: economical.



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APPLICATION DATA

• PREPARATION

The areas to be repaired must be free from all unsound material, i.e. dust, oil, grease, corrosion by-products, organic growth. All loose materials must be removed. For large areas, grit, grit/water jetting or mechanical scabbing is recommended. For smaller areas, needle gunning or brush hammering is effective. **The prepared substrate should be thoroughly soaked (preferably 24 hours earlier) with clean water until uniformly saturated, without any standing water** which would prevent the contact and adhesion of **Tekamal Silika MSM ST**.

• PRIMING

Where substrate concrete exhibits high porosity, pre-damped concrete surface should be primed with **Tekamal Antikor** TTK. Steel reinforcement and concrete protective coatings, mixed with water to create a thin emulsion consistency.

Steel reinforcement should also be protected with **Tekamal Antikor**.

For further information, please refer to **Tekamal Antikor** technical data sheet.

• MIXING

- Mixing water: approx. 15 l / 100 kg of dry mortar – depending on the desired consistency.
- **Tekamal Silika MSM ST** should be mechanically mixed in a clean drum with a slow-speed drill and a paddle. A normal concrete mixer is NOT suitable.
- The average mixing time for obtaining a homogenous mixture is at least 3 minutes. Mix so as to entrain as little air as possible.
- Leave to rest for 5-10 minutes, then remix and apply.
- Workability time is 30-60 minutes, depending on fresh mortar consistency and temperature. Remix when necessary.

• PLACING

- **Tekamal Silika MSM ST** should be compacted in one or more layers using a placement technique to remove entrapped air. If necessary, support with shuttering to ensure compaction on extremely smooth surfaces. When it is machine applied a dry or wet process can be used.
- For repairs which require multilayer application it is important to ensure that previous layers are well keyed and stable but not fully set prior to the application of subsequent layers.
- When repairing smaller surfaces – patching, the edges where concrete is removed should be cut at a minimum angle of 90° C and a maximum angle of 135° C with the top surface of the removed concrete to avoid uneven mortar drying and cracking of mortar on the contact between old surface and repair mortar.
- At pavement placing, dilatation joints should be taken into account. For sealing dilatation joints, TTK sealants **Tioelast KVZ**, **Tioelast KOS**, **Tekasil Neutal Profi**, **Tekaflex MS 15** or **Tekaflex PU 15** are recommended.
- The optimal temperature for **Tekamal Silika MSM ST** placing is 10 – 25° C.
- Surfaces repaired with **Tekamal Silika MSM ST** can easily be coated with dispersion- or polymer-based protective coatings (acrylic, epoxy etc.). The surfaces have to be dry enough. Consultation with coating producer is recommended!
- Final works / trowelling of **Tekamal Silika MSM ST** can be done after 0,5 – 1 h, depending on work conditions.
- The levelling of **Tekamal Silika MSM ST** with **Tekamal Silika MSM 0-0,3 / 0-1** can be done after the hardening of **Tekamal Silika MSM ST**, i.e. after 1- 2 days depending on work conditions.

• CURING

To prevent shrinking, a min. 3-4-day wet curing is required! In more critical conditions (strong sunlight, drying wind, etc.), wet curing should be prolonged to up to 7-10 days. Normal concreting procedures should be strictly adhered to. When wet curing is impossible, protection with TTK curing agent **Kontrasol 22 V** is recommended.

• CLEANING THE TOOLS

Clean with water immediately after use!

COVERAGE

- 20 kg/m²/cm

PACKING

- 25 kg sacks

STORAGE

- The product should be stored in dry and ventilated places, well protected from damage and moist.
- In tightly closed and undamaged packaging, stored in dry places, the shelf life of the product is min. 1 year from the production date.
- The product may still be used after the date of expiry, but the characteristics important for the intended use have to be examined.

SAFETY PRECAUTIONS

- Because it contains cement, **Tekamal Silika MSM ST** irritates the skin and eyes and may cause allergic reactions if it comes into contact with skin.
- When handling the product, protective gloves and goggles should be used.
 - Do not breathe in dry powder.
 - Use a protection mask when handling dry powder.
 - Eating, drinking or smoking during work is prohibited.
 - After finishing work, hands should be thoroughly washed with water.

NOTE

Instructions are given on the basis of examinations and technical experience of the firm. Due to specific conditions and work methods, preliminary tests are advised for every type of use. Since we cannot influence the course of work, we cannot be held responsible for its quality.