BUILDING TRUST

PRODUCT DATA SHEET

SikaTop®-590 Seal

(formerly MSeal 590)

Ultra rapid setting cementitious mortar to plug active water leaks in concrete and masonry

DESCRIPTION

When mixed with clean water, SikaTop®-590 Seal provides a ready to use ultra rapid setting durable plugging mortar for active water leaks in concrete and masonry. The material expands as it cures to form a watertight seal with similar characteristics to concrete.

USES

SikaTop®-590 Seal is used to stop active water or seepage under pressure through joints, cracks and holes in concrete or masonry, where a normal mortar would be washed away, and resin mortars would not bond.
Areas of use include:

- As a seal for construction joints or floor joints prior to basement tanking
- For instant sewer connections
- For sealing cracks and construction joints in reservoirs and other water retaining structures
- For rapid anchoring of bolts, conduits, pipes, railings, sanitary equipment, etc.
- Joint filling, pointing between concrete segments in concrete and brick tunnels, sewage systems, pipes and mines.

Please note:

- Do not apply to dynamic (moving) cracks.
- Do not use to fill expansion joints or control joints.
- Do not use as a surface-applied coating.

CHARACTERISTICS / ADVANTAGES

- Ultra-rapid set, instant plugging of leaks
- Requires the addition of water only
- Expands as it sets, ensuring a permanent watertight seal
- Similar characteristics and compatible with concrete
- Chloride-free
- Does not promote corrosion of the reinforcement

PRODUCT INFORMATION

Composition	Special cement, fillers and additives
Packaging	SikaTop®-590 Seal is available in 5 kg and 25 kg metal pails. Refer to the current price list for available packaging variations.
Appearance / Colour	Grey powder
Shelf life	12 months after date of production if stored at below mentioned storage conditions.
Storage conditions	SikaTop®-590 Seal should be stored under cover, clear of the ground and stacked not more than 4 (25kg) resp. 5 (5kg) pails high. Protect the materials from all sources of moisture and long-term temperatures over 30° C.
Maximum grain size	~0.8 mm

TECHNICAL INFORMATION

Compressive strength	30 minutes	≥12 MPa	(EN 1015-11)
	24 hours	≥20 MPa	
	28 days	≥50 MPa	
Tensile strength in flexure	30 minutes	≥2.5 MPa	(EN 1015-11)
	24 hours	≥4.5 MPa	
	28 days	≥7.0 MPa	
Tensile adhesion strength	24 hours	2.1 MPa	(EN 1015-12)
Reaction to fire	Class A1		(EN 13501-1)
Thermal conductivity	for P = 50%	λ10,dry ≤ 1.11 W/(m·K)	(EN 13501-1)
	for P = 90%	λ10,dry ≤ 1.21 W/(m·K)	

APPLICATION INFORMATION

Mixing ratio	0.22 – 0.26 l water per kg powder
Yield	1 kg of powder will yield approximately 0.6 L of mortar. This amount will cover ~1.4 m of a 20mm x 20mm kicker joint.
Product temperature	+5 °C to +30 °C
Ambient air temperature	+5 °C to +35 °C
Substrate temperature	+5 °C to +35 °C
Pot Life	1-2 Minutes (at 21±2 °C and 60±10 % relative humidity)
Setting time	2-4 minutes (at 21±2 °C and 60±10 % relative humidity)
Fresh mortar density	~2.1 kg/l

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

- Do not apply to frozen or frost-covered surfaces.
- Do not remix (re-temper) hardened material.
- Do not expose cured patches to soft water with a total calcium hardness below 140 ppm, or with a pH below 5 or above 12, or water-soluble sulphates greater than 0.20% without an additional protective topcoat.
- Do not use if hard lumps have developed in the powder.

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 PREPARATION

For plugging active water leaks and sealing wall/floor joints:
Preferably, cracks or holes should be cut to a minimum width and depth of 20 mm x 20 mm, cutting the sides as square as practicable. Undercut if possible. Avoid leaving a V-section. Do not feather-edge. Flush out holes, joints or cracks with water to remove all loose particles and dust.
For holes, patches, honeycomb and other construction faults in concrete walls:
Remove all tie wires, wood or foreign objects by cutting back the concrete from the surface to a depth of 25 mm.
For anchoring bolts or metal posts in concrete or masonry:
Drill a hole deep enough to secure the bolt or post properly and large enough so there is at least 10 mm on all sides of it.
All surfaces must be dampened with clean water immediately prior to the application of SikaTop®-590 Seal.

MIXING

SikaTop®-590 Seal powder should be mixed with clean water by hand only. Mix quickly and well to a stiff consistency using approximately 0.24 litres water for 1 kg of powder (0.22 – 0.26 l/kg).
Do not overmix. Do not mix more material than can be placed within one application (1-2 minutes at 20°C).
Do not re-temper.

APPLICATION

For plugging active leaks:
Hold the material in a gloved hand until slight warmth is felt or slight setting occurs. Then press SikaTop®-590 Seal mortar firmly into the opening; exert full pressure, without moving the hand or trowel. Hold in place for at least 1 minute. If the opening is too big to be closed with one mix of SikaTop®-590 Seal, work progressively from the sides to the middle, following the above procedure.
After stopping the active water, trim off the patch so that it is uniformly level with the surrounding wall surfaces.
For sealing cracks at the junction of floor and wall in an existing construction:
Force SikaTop®-590 Seal mortar into the prepared opening and smooth it out. Form a 45° cove or fillet at the junction of floor and wall of approximately 35-45 mm.
For sealing the junction between a concrete floor and a masonry wall in new construction:
Form a rebate throughout the basement and sub-basement rooms and pits by inserting a strip of wood 20mm x 20mm at the junction of vertical masonry walls and the concrete floor slabs. The top edge of the strip should be laid true and level with finished concrete floors and left in place until fresh concrete has cured. Remove the wood strip previously inserted.
Wash the groove with clean water from a hose pipe to remove debris. Fill the groove with SikaTop®-590 Seal mortar mixed to a stiff consistency; force or tamp it into place with a round-nosed tool to form a cove between the floor and wall.
Keep the mortar damp for 15 minutes if no active water is present.
To repair leaking mortar joints and cracks in masonry walls, or cracks in concrete walls:
Press SikaTop®-590 Seal by hand or by trowel into the crack.

For holes, blisters, patches, honeycomb and other construction faults in concrete walls:
Fill all holes, blisters, patches, honeycombing and other construction faults with the mixed SikaTop®-590 Seal. Scratch the finish for later applications.
For anchoring bolts or metal posts in concrete or masonry:
Fill the hole with SikaTop®-590 Seal mortar and tamp it down so that the entire hole is full. Immediately centre the bolt or post over the hole and force it into the mortar. Tamp the SikaTop®-590 Seal mortar firmly around the bolt or post.

CURING TREATMENT

Final setting time: 2 - 4 minutes.
Once the placed SikaTop®-590 Sealmortar has stiffened sufficiently, dampen with clean water and maintain in a damp condition for a minimum of 15 minutes.

CLEANING OF EQUIPMENT

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

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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