BUILDING TRUST

PRODUCT DATA SHEET

SikaScreed® HardTop-70

Cementitious, rapid hardening, high strength, floor levelling screed and repair mortar

PRODUCT DESCRIPTION

SikaScreed® HardTop-70 is a cementitious, one-part, rapid hardening, high strength, floor levelling screed and repair mortar for industrial floors. The Product provides a low maintenance, high mechanical and abrasion resistant smooth screed, suitable as a finished surface or a base layer for resin based coating. Layer thickness 10 to 200 mm. Suitable for both internal and external use.

USES

SikaScreed® HardTop-70 may only be used by experienced professionals.

- Rapid repair and levelling of small area industrial floors including wet areas.
- Bonded, unbonded and floating screed wearing layer system.
- Bonded, unbonded and floating screed base layer for resin top coats.
- Rapid repair and levelling of external areas such as terraces, walkways, etc.
- Where a deep section screed application is required.

CHARACTERISTICS / ADVANTAGES

- Pre-batched, one-part mortar that only needs the addition of water.
- Low maintenance.
- Easy to apply and lay as a monolithic flat floor finish, or on a slope.
- Rapid hardening screed and repair mortar (≥45 N/mm² at 24 hours).
- Usability after only ~24 hours.
- High mechanical and abrasion resistance.
- Final, trafficable, screed wearing layer.
- Screed suitable for underfloor heating (either water or electrical systems).
- May be covered or overlaid with epoxy, polyurethane or hybrid flooring systems after only 18 hours.
- Application of resin-based flooring primers / sealers within hours, not days.
- Deep sections can be installed in a single layer, saving time and money.

ENVIRONMENTAL INFORMATION

- VOC emission classification GEV-Emicode EC1^{PLUS}, license number 4444/20.10.00.

APPROVALS / STANDARDS

- CE Marking and Declaration of Performance to EN 13813 - Resin screed material for internal use in buildings.
- CE Marking and Declaration of Performance to EN 1504-3 - Concrete repair product for structural repair.

PRODUCT INFORMATION

Product Declaration	EN 13813: Class CT-C70-F8-A6. EN 1504-3: Class R4.
Chemical Base	Special cement based powder with hard aggregates.
Packaging	25 kg bags
Shelf Life	12 months from date of production
Storage Conditions	Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +35 °C. Always refer to packaging.
Appearance / Colour	Smooth, grey finish
Maximum Grain Size	D_{max}: 3.2 mm
Bulk Density	~1.50 kg/l

TECHNICAL INFORMATION

Abrasion Resistance

Class	Value	Method	
A6*	≤6 cm³ / 50 cm²	Böhme	(EN 13892-3)
AR 0.5*	≤50 µm	BCA	(EN 13892-4)

* Performed on a power floated surface.

Compressive Strength

Time	Temperature	Value	
24 hours	+20 °C	~45 N/mm²	(EN 196-1)
28 days	+20 °C	≥70 N/mm²	

Flexural Strength

Time	Temperature	Value	
24 hours	+20 °C	~6 N/mm²	(EN 196-1)
28 days	+20 °C	≥8 N/mm²	

Reaction to Fire	A1fl

SYSTEM INFORMATION

System Structure

Coated systems

Bonding Bridge	SikaScreed®-20 EBB
Screed	SikaScreed® HardTop-70
Finishing Aid	Sikafloor®-140 W Trowelling Primer
Surface Primer	Sikafloor®-151

Refer to Method Statement: Sikafloor® HardTop-60 / 70 Fast Screed Systems for further information.
SikaScreed® HardTop-70 is suitable for covering with Sikafloor® epoxy, polyurethane and hybrid systems.

APPLICATION INFORMATION

Fresh mortar density	~2.25 kg/l
Consumption	~2.1 kg/m² per mm. This figure is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level or wastage, etc.
Layer Thickness	10 to 200 mm Minimum thickness guidelines: Bonded Screed and Repairs — 10 mm Unbonded Screed and Repairs — 40 mm Floating Screed — 40 mm* *Loading / use of the floor and the presence of underfloor heating will determine the thickness of the screed. Minimum thickness indicated is for unheated and lightly loaded floors. Also refer to the Sika Method Statement: "SikaScreed® HardTop Range".
Product Temperature	+10 °C minimum / +25 °C maximum (fresh mortar)
Ambient Air Temperature	+10 °C minimum / +30 °C maximum
Mixing Ratio	~2.8 to 3.0 Litres of water for 25 kg of powder
Substrate Temperature	+10 °C minimum / +30 °C maximum
Pot Life	~25 minutes at +20 °C
Waiting Time / Overcoating	See table below
Applied Product Ready for Use	~18 hours (without coating or impregnation application). Time is approximate and measured at +20 °C and >50 % r.h. Time will be affected by changing substrate and ambient conditions, layer thickness and water content.

System	Start Finishing / Smoothing	Apply Sikafloor®-151 After Finishing
Rapid Coating Same Day	~45 to 60 minutes	~2 to 3 hours
Coating Within 48 Hours	~45 to 60 minutes	<48 hours

Refer to the Method Statement: Sikafloor® HardTop-60 / 70 Fast Screed Systems and to individual Product Data Sheets for further information. Times are approximate and measured at +20 °C and >50 % r.h. Application times will be affected by changing substrate and ambient conditions, layer thickness and water content.

VALUE BASE

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.

FURTHER DOCUMENTS

Application Instructions

Reference must be made to the Sika Method Statement:

- Sikafloor® HardTop-60 / 70 Fast Screed Systems.

LIMITATIONS

- SikaScreed® HardTop-70 is a special cement binder based mortar which is not compatible with standard Portland cements and therefore must never be mixed or blended with OPC cements or other binders. When hardened, SikaScreed® HardTop-70 can be overcoated with standard OPC cement based products after the required surface preparation.
- Do not use the mixing equipment for cement based SikaScreed® HardTop materials that has previously mixed other cement based mortars.
- Lower or higher material and substrate temperatures, layer thickness and water content significantly retard or accelerate the trowelling time.
- Do not spray water onto the surface while finishing as this will reduce surface strength and may induce surface cracking.
- Coverage of the reinforcement with SikaScreed® HardTop-70 must not be considered as carbonation protection.
- Absolute lowest temperature limit for application is +10 °C. Lower temperatures can affect the setting time and may lead to reduced performance.
- Do not apply SikaScreed® HardTop-70 in a hot climate in direct sunlight. When expected temperatures will be above +30 °C, the application must only start after falling to +30 °C or below. The substrate, dry mortar (bags) and water must be kept cool and within temperature limits stated.
- Power floating light machines with large diameter blades provide much better results than heavy small diameter machines.
- SikaScreed® HardTop systems are not designed to be watertight and completely crack-free.
- Existing static surface cracks in substrate require pretreating with a stripe coat by prefilling before full system application. Use Sikadur® or Sikafloor® resins.
- Existing joints in the substrate must always be brought through the screed and appropriately formed and sealed as required.
- Take precautions during application and curing to prevent crazing and cracking caused by external factors such as wind, sunlight, low humidity, fluctuating climatic environmental conditions, temperature stresses, variable thicknesses, etc.
- Opened bags must be used immediately.
- During storage, bags must be protected from moisture. Moisture has a negative impact on the products reactivity and performance.
- For protection against contamination, the application of a suitable surface protection treatment is recommended (e.g. polyethylene sheeting).

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

EQUIPMENT

SUBSTRATE PREPARATION

Abrasive blast cleaning or planing / scarifying equipment.

MIXING

Small to Medium Volumes

- Mixing containers
- Weighing scales
- Water containers
- Water measuring container
- Double spiral mix paddle and drill (<500 rpm)
- Forced action mixer or rotating pan, paddle or trough type. Freefall mixers must not be used

Large Volumes

- Weighing scales
- Water containers
- Water measuring container
- Forced action mixer or rotating pan, paddle or trough type. Freefall mixers must not be used

APPLICATION

- Mixed material carriers / carts (wheelbarrows)
- Spreading equipment
- Height levelling equipment
- Screed bar / straight edge
- Screed rails

SURFACE FINISHING

- Hand trowels
- Walk behind power trowels (disc and blade types)
- Finishing brooms

CURING

- Polyethylene sheeting

SUBSTRATE QUALITY / PRE-TREATMENT

BONDED SCREED

- Concrete substrate must be structurally sound and of sufficient compressive strength (>25 N/mm²) with a minimum tensile adhesion strength of 1.5 N/mm².
- Substrates must be clean, free of all contaminants such as dirt, oil, grease and loose friable material. Cement laitance, coatings or other surface treatments must be completely removed.
- Cementitious substrates must be prepared mechanically using suitable abrasive blast cleaning or planing / scarifying equipment to remove cement laitance, coatings or other surface treatments, and achieve an open textured, gripping surface profile suitable for the overlying SikaScreed®.
- Concrete and cementitious substrates surface preparation for SikaScreed®-20 BB: Minimum substrate roughness of 0.05 mm according to EN 1766 or >CSP 3 (International Concrete Repair Institute) or equivalent.
- For critical adhesion applications site trials incorporating adhesion pull-off tests to confirm substrate / SikaScreed® HardTop-70 tensile adhesion strengths must be carried out to verify values are acceptable for the application.
- All dust, loose and friable material must be completely removed from all surfaces before application of SikaScreed® HardTop-70, preferably by vacuum extraction equipment.

- Construction joints, vertical connections, cutting edges or connections to third-party components such as shafts, rails, profiles, etc., must be primed with SikaScreed®-20 EBB.

UNBONDED SCREED

- No requirements.

FLOATING SCREED

- No requirements.

MIXING

Small to Medium Volumes

- Pour the minimum recommended clean water quantity in a suitable mixing container.
- While stirring slowly with drill and mixing paddle, add the powder to the water and mix thoroughly for at least for 3 minutes, adding additional water if necessary to the maximum specified amount, and adjust to the required consistency to achieve a smooth consistent mix.
- The consistency must be checked after every mix.

Large Volumes

- Pour the minimum recommended clean water quantity into the forced action mixer or rotating pan.
- Slowly, add the powder to the water and mix thoroughly for at least for 3 minutes, adding additional water if necessary to the maximum specified amount, and adjust to the required consistency to achieve a smooth consistent mix.
- The consistency must be checked after every mix and compared to mixing by drill and mixing paddle technique.

APPLICATION

BONDED SCREEDS

Bonding Bridge

- SikaScreed®-20 BB: To the prepared dry or matt damp substrate without any standing water, apply SikaScreed® HardTop-70 ‘wet-on-wet’ onto the SikaScreed®-20 BB within 30 minutes of mixing (+20 °C). Also refer to SikaScreed®-20 BB Product Data Sheet.

Note: If SikaScreed®-20 EBB bonding bridge has dried, they must be removed mechanically and replaced before application of SikaScreed® HardTop-70.

APPLICATION

Bonded, Unbonded and Floating Screeds

- Pour mixed SikaScreed® HardTop-70 onto a sufficiently prepared substrate and apply evenly to the required thickness using appropriate spreading equipment.
- Level surface with screed bar / straight edge.

Surface Finishing

- Finishing should be carried out to the required surface texture using suitable finishing tools.
- To obtain optimum surface strength, finish SikaScreed® HardTop-70 with suitable equipment such as trowels or walk-behind power floats. Do not use heavy ride-on trowelling machines.

Start Finishing / Smoothing	45 to 60 minutes after laying	(at +20 °C)
Finishing Time	Comparable to concrete	

- For high abrasion resistance values float the surface several times to achieve a very smooth finish using a disc power float.
- Apply Sikafloor®-140 W Trowelling Primer during powerfloating if additional resin layers are required. Refer to the Method Statement: Sikafloor® HardTop-60 / 70 Fast Screed Systems.
- Small areas which are difficult to access and where optimum surface strength is not required, use suitable hand trowels.

Curing

- Curing must start after the last finishing operation using either coating within 48 hours, polyethylene sheeting, or for rapid same day coating, the use of a suitable system primer or impregnation. Refer to appropriate system data sheet for waiting times and further information.
- For an uncoated system, use Sikagard®-914 W Stainprotect or Sikagard®-915 Stainprotect cure SikaScreed® HardTop-70 with polyethylene sheeting.
- Curing with polyethylene sheeting must be maintained for at least 18 hours. At temperatures between +10 °C and +15 °C (substrate and air), the screed has to be cured with polyethylene sheeting for at least 24 hours.

CLEANING OF TOOLS

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

LOCAL RESTRICTIONS

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.

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.

SIKA LIMITED
Watchmead
Welwyn Garden City
Hertfordshire, AL7 1BQ
Tel: 01707 394444
Web: www.sika.co.uk
Twitter: @SikaLimited