BUILDING TRUST

PRODUCT DATA SHEET

SikaScreed® HardTop-60

CEMENTITIOUS, RAPID HARDENING, HIGH STRENGTH, FLOOR LEVELLING SCREED

PRODUCT DESCRIPTION

SikaScreed® HardTop-60 is a cementitious, 1-part,rapid hardening, high strength, floor levelling screed and repair mortar for industrial floors. Provides a low maintenance, high mechanical and abrasion resistant smooth screed, suitable as a finished surface or a base layer for resin based coatings. Thickness 8–80 mm. Internal use. External use when overcoated.

USES

- SikaScreed® HardTop-60 may only be used by experienced professionals.
- Repair and levelling of large area industrial floors
- Bonded, unbonded and floating screed wearing layer system
- Bonded, unbonded and floating screed base layer for resin top coats

CHARACTERISTICS / ADVANTAGES

- Rapid hardening screed and repair mortar (≥ 35 N/mm² 24 hours)
- Long surface finishing window (> 60 minutes)
- Usability after ~24 hours hardening
- Pre-batched,1-part mortar. Only needs the addition of water
- Low maintenance
- Easy to apply and laid as monolithic flat floor finish or on a slope.
- High mechanical and abrasion resistance
- Final trafficable screed wearing layer
- Screed suitable for underfloor heating (Water and electrical systems)
- May be covered or overlaid with epoxy, PU or hybrid flooring systems after 18 hours
- Application of specific resin-based flooring primer within hours after placing SikaScreed® HardTop-60
- Exterior use with surface impregnation / coating protection

ENVIRONMENTAL INFORMATION

- VOC emission classification GEV-Emicode EC1^{PLUS}

APPROVALS / STANDARDS

- CE Marking and Declaration of Performance to EN 13813 - Cementitious screed material for use internally in buildings.

PRODUCT INFORMATION

Chemical Base	Special cement based powder with hard aggregates
Packaging	25 kg bags, 1000 kg bags
Appearance / Colour	Smooth, grey finish
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 +30 °C. Always refer to packaging.
Maximum Grain Size	D_{max}: 3.2 mm
Bulk Density	~1.50 kg/l
Product Declaration	EN 13813: Class CT-C60-F7-A6

TECHNICAL INFORMATION

Abrasion Resistance (EN 13892-3)

Class	Value	Method
A6*	≤ 6 cm³ / 50 cm²	Böhme

* performed on a power floated surface

Compressive Strength (EN 196-1)

Time	Temperature	Value
24 hours	+20 °C	~35 N/mm²
28 days	+20 °C	≥ 60 N/mm²

Flexural Strength (EN 196-1)

Time	Temperature	Value
24 hours	+20 °C	~ 4 N/mm²
28 days	+20 °C	≥ 7 N/mm²

Reaction to Fire	A1fl

SYSTEM INFORMATION

System Structure

Bonding bridge:
- SikaScreed®-20 EBB

Screed:
- SikaScreed® HardTop-60

APPLICATION INFORMATION

Mixing Ratio	~2.8–3.0 L of water for 25 kg of powder
Fresh Mortar Density	~2.25 kg/l
Consumption	~2.05 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

8–80 mm

Minimum thickness guidelines:

Bonded screed and repairs	8 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 min. / +25 °C max. (fresh mortar)
Ambient Air Temperature	+10 °C min. / +30 °C max.
Substrate Temperature	+10 °C min. / +30 °C max.
Pot Life	~30 min at +20 °C
Waiting Time / Overcoating	Start surface finishing/smoothing 90 minutes after application. Finishing time is comparable to concrete finishing. After surface finishing/smoothing, the specific system resin based flooring primer may be applied. If a resin based flooring primer is not required, a polythene sheet must be used as protective covering. 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.
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.

APPLICATION INSTRUCTIONS

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 EBB: Minimum substrate roughness of 0.5 mm according to EN 1766 or ≥ CSP 3 (International Concrete Repair Institute) or equivalent.
As a guide, substrate / SikaScreed® HardTop-60 tensile adhesion strength ≥ 1.5 N/mm² or a tensile failure in the substrate concrete or as specified in contract documentation.
For critical adhesion applications it is recommended that preliminary site trials incorporating adhesion pull-off tests to confirm substrate / SikaScreed® HardTop-60 tensile adhesion strengths are 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-60, 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 in all situations with SikaScreed®-20 EBB.

UNBONDED SCREED
No requirements

FLOATING SCREED
No requirements

EQUIPMENT

SUBSTRATE PREPARATION
Abrasive blast cleaning or planing / scarifying equipment

MIXING
Small - medium volumes
Mixing containers
Weighing scales
Water containers
Water measuring container
Double spiral mix paddle & drill (< 500 rpm)
Forced action mixer or rotating pan, paddle or trough type. Free fall mixers must not be used.
Large volumes
Weighing scales
Water containers
Water measuring container

Forced action mixer or rotating pan, paddle or trough type. Free fall mixers must not be used. Continuous mortar mixer and integral delivery pump with associated hoses i.e. inoCOMB Cabrio 0.2 .

APPLICATION

Mixed material carriers/carts (wheel barrows)
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

MIXING

Small - 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 / rotating pan or continuous mortar mixer and integral delivery pump. 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 EBB: To the prepared dry or matt damp substrate without any standing water. Apply SikaScreed® HardTop-60 ‘wet on wet’ within 30 minutes of mixing (+20°C). Also refer to SikaScreed®-20 EBB Product Data Sheet.
Note: If the SikaScreed®-20 EBB bonding bridge has dried, it must be removed mechanically and replaced before application of SikaScreed® HardTop-60.

APPLICATION

Bonded, unbonded and floating Screeds

Pour mixed SikaScreed® HardTop-60 onto 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-60 with suitable equipment such as trowels or walk-behind power floats. Do not use heavy ride-on trowelling machines.

Start finishing / smoothing	1.5–3 hours after laying	(at +20 °C)
Finishing time	comparable to concrete	

It is possible to float the surface several times up to a very smooth surface to achieve high abrasion resistance values. For this requirement, initial finishing process should be carried out using a disc power float. Extended surface smoothing should then be completed using a walk behind helicopter / blade type power float.
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 polyethylene sheeting or the application of a suitable system primer. Refer to appropriate system datasheet.
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 material can only be removed mechanically.

FURTHER DOCUMENTS

Application instructions
- Sika Method Statement 'Sikafloor® HardTop Systems'

LIMITATIONS

- SikaScreed® HardTop-60 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-60 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 and 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-60 must not be considered as carbonation protection.
- Absolute lowest temperature limit for application is +10 °C. Lower temperatures can affect the setting and may lead to reduced performance.
- Do not apply SikaScreed® HardTop-60 in a hot climate in direct sunlight. When expected temperatures will be above +25 °C, the application must only start after falling to +25°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.
- For the Sikafloor® HardTop CS-56 Rapid system, do not power float more than once. Use a disc type power float.
- SikaScreed® HardTop systems are not designed to be watertight and completely crack-free.
- Existing static surface cracks in substrate require pre-treating 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 have to be used immediately.
- During storage, bags must be protected from moisture. Moisture can have a negative effect on the products reactivity and performance.
- For protection against contamination the application of a suitable surface protection treatment is recommended i.e. polyethylene sheeting.
- Free fall mixers must not be used for mixing.

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.

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.

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.

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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