BUILDING TRUST

SikaScreed® HardTop-65

CEMENTITIOUS, EASY TO LEVEL, HIGH STRENGTH, RAPID HARDENING, FLOOR LEVELLING SCREED

DESCRIPTION

SikaScreed® HardTop-65 is a cementitious, 1-part, rapid hardening, high strength, floor levelling screed and repair mortar for industrial floors. Provides a low maintanance, high mechanical and abrasion resistant smooth screed, suitable as a finished surface or a base layer for resin based coatings. Thickness 8-80 mm.

USES

SikaScreed® HardTop-65 may only be used by experienced professionals.
SikaScreed® HardTop-65 is particularly suitable for the following uses due to its rapid drying, almost shrinkage-free hardening, high abrasion resistance and compressive strength:
minor and major repairs to heavily stressed, industrial concrete flooring with full usability after ~24 hours hardening.
Can be used as a bonded and non-bonded screed.
Rapidly coatable levelling mortar for Sikafloor® resin-based flooring systems.

CHARACTERISTICS / ADVANTAGES

SikaScreed® HardTop-65 is characterised by unique combinations of properties:
- Rapid hardening screed and repair mortar (≥ 40 N/mm² compressive strength after 24 hours at +20°C).
- Easy pumpable and application.
- Long trowelling window (≥ 60 min) for smooth surfaces.
- Almost shrinkage-free hardening for levelling at variable thicknesses.
- Final trafficable screed wearing layer.
- possible to use specific resin-based troweling primer during application.
- May be covered or overlaid with Epoxy, PU or Hybrid flooring systems after 18 hours.
- Exterior use, when overcoated with a dense topcoat.
- high mechanical and abrasion strength.

SUSTAINABILITY

VOC emission classification GEV-Emicode EC1^{PLUS}, licence number xx/xx

APPROVALS / CERTIFICATES

- 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

Composition	special cement binder with fibers and hard aggregates
Packaging	25 kg paper bags / 1 ton big bags
Appearance / Colour	depends the final finishing / grey
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 ºC and +30 ºC. Always refer to packaging.

Maximum Grain Size

Dmax: 3.2 mm

Bulk Density

~ 1.50 kg/litre

Product Declaration

EN 13813: Class CT-C65-F7-A6
EN 1504-3: Class R4 : Method 3.1, 4.4 7.1[1] and 7.2[1]
note:
[1] Principle 7: provided that the repair system includes a surface protection system with proven protection against carbonation or is a PC mortar.

Abrasion Resistance

Class	Value	According to	
A6*	≤ 6 cm³ / 50 cm²	Böhme	EN 13892-3

* SikaScreed® HardTop-65 with 12% water and test performed on a full power floated surface.

Compressive Strength

Time	Temperature	Water Content	Value	Standard
24 hours	+ 20 °C	12%	~ 45 N/mm²	EN 13892-2 & EN 12190
24 hours	+ 20 °C	15%	~ 40 N/mm²	EN 13892-2 & EN 12190
Time	**Temperature**	**Water Content**	**Value**	**Standard**
28 days	+ 20 °C	12%	≥ 70 N/mm²	EN 13892-2 & EN 12190
28 days	+ 20 °C	15%	≥ 60 N/mm²	EN 13892-2 & EN 12190

Tensile Strength in Flexure

Time	Temperature	Water content	Value	(EN 13892-2)
24 hours	+ 20 °C	12% & 15%	~ 5 N/mm²	
28 days	+ 20 °C	12% & 15%	≥ 7 N/mm²	

Tensile Adhesion Strength

Time	Temperature	Water content	Value [3]	Standard
28 days	+ 20 °C	12% / 15%	≥ 2,0 N/mm²	EN 1542

[3] all values system build up in combination with bonding bridge SikaScreed® - 20 EBB

Coefficient of Thermal Expansion

	value	standard
$\alpha_{23/60}$	≥ 5x10-6 [1/K]	EN 1770

Reaction to Fire

$A1_{fl}$

SYSTEMS

System Structure

As bonding bridge use SikaScreed®-20 EBB (wet on wet method) on dry or matt damp substrates.
After final trowelling (hardened, light grey, optical dry surface) SikaScreed® HardTop-65 can be primed/coated with systems as given in the following system datasheets:

APPLICATION INFORMATION

Mixing Ratio	For 25 kg SikaScreed® HardTop-65 3,0 - 3,75 l water is required
Consumption	~2,0 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	bonded layer : 8 - 80 mm non -bonded layer : 40 - 80 mm
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	~ 30min. (± 5 min) at +20 °C
Waiting Time / Overcoating	Start finishing/smoothing of SikaScreed® HardTop-65 ~90 min. after application. It is possible to finish/smooth SikaScreed® HardTop-65 for ~ 60 to 90 min. After finishing/smoothing a specific approved resin based flooring primer may be applied. Please refer to the System Datasheet If no resin based flooring primer will be applied a polyethlene sheet must be used as protective covering. Times are approximate and at +20 °C and > 50% r.h. thus will be affected by changing substrate and ambient conditions, as well 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 prepara tion 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 DE 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-65 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-65, 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.
NON-BONDED SCREED
Plastic sheet on a flat and even surface.

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
- Dabble bar

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

CURING
- Polyethylene sheeting or
- specific rapid coating

MIXING

by hand
When mixing manually add the dry powder (25 kg) into a suitable container with the clean water. Thoroughly mix the SikaScreed® HardTop-65 and water in the specified ratio with an electric mixer (maximum 500 rpm.) until smooth and homogeneous mixture. It is important to mix for minimal 3 minutes. It is recommended that a double spiral mix paddle is used.

by forced action mixer
When mixing by forced action mixer add the dry powder upto the mixer capacity (n x 25 kg) with the right amount of clean water. Thoroughly mix the SikaScreed® HardTop-65 until smooth and homogeneous mixture. It is important to mix for minimal 3 minutes.

Pumping
When using a mortar pump with appropriate equipment (Inotec - InoCOMB). Set the machine in a way so that a uniform mixture is achieved. Control the water dosage to achieve the right consistency. Control the consistency by comparing with a mix by hand.

APPLICATION

BONDED SCREEDS
Bonding bridge SikaScreed®-20 EBB: To the prepared dry or matt damp substrate without any standing water. Apply SikaScreed® HardTop-65 '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-65.

BONDED & non-BONDED SCREEDS
Pour mixed SikaScreed® HardTop-65 onto prepared substrate and apply evenly to the required thickness using appropriate spreading equipment.
Level surface using a dabble bar.

Surface finishing
Finishing must be carried out to the required surface texture using suitable finishing tools.
To obtain optimum surface strength, finishSikaScreed® HardTop-65 with suitable equipment such as trowels or walk-behind power floats. Do not use heavy ride-on trowelling machines.

Start of troweling	1.5 - 3h	at + 20 °C
Troweling 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 must be carried out using a disc power float. Extended surface smoothing must then be completed using a walk behind helicopter / blade type power float. A special trowelingprimer may be used if a further coating build-up is required, please refer to the system datasheet.
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 EQUIPMENT

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

only be removed mechanically.

FURTHER INFORMATION

Application instructions: Please refer to Sika Method Statement

IMPORTANT CONSIDERATIONS

- SikaScreed® HardTop-65 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-65 can be overcoated with standard OPC cement based products after corresponding surface preparation.
- Do not use the mixing equipment for cement based SikaScreed® HardTop materials and other cement based mortars previously.
- Coverage of the reinforcement with SikaScreed® HardTop-65 must not be considered as carbonation protection.
- The actual material consumption SikaScreed® HardTop-65 depends on the substrate roughness and the method of application.
- Don´t apply SikaScreed® HardTop-65 in a summery climate in direct sunlight. When expected temperatures are above +25 °C, the application start must be after reaching the daily maximum temperature. The substrate, the dry mortar (bags) and the water must be kept cool.
- Absolute lowest limit of the temperatures for the application of SikaScreed® HardTop-65 is +10°C. Lower temperatures can interrupt the setting and may lead to disfunction.
- In drafty areas, open spaces, at temperatures between +10 °C and +15 °C and at a very dry climate, the application is more risky and can lead to early plastic shrinkage cracks.
- Power floating process with light machines with big diameters are able to provide much better results than heavy small-diameter floating machines.
- When a rapid applied coating technique is prefered, use the special trowelling primer please refer to system datasheet.
- Marks from trowelling or floating or cloudy areas at untreated or transparent sealed surfaces are state of the art and are no reason for a claim.
- 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.
- Crazing and cracking due to external factors like draft, sunlight, low humidity, fluctuating climatic environmental conditions, temperature stresses, variable thicknesses, etc, cannot be excluded. These are no causes for a claim.
- Opened bags have to be used immediately. Storage must be protected from moisture. Moisture can have a negative effect on the reactivity before end of the shelflife.
- Not suitable without protection for exterior areas. May be covered with a specific approved resin based flooring primer within few hours from the end of troweling (at +20 °C) without additional surface preparation, please refer to the system datasheet for which is applicable.
- For protection against contamination the application of a suitable surface protection treatment is recommended.

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and uses.

ECOLOGY, HEALTH AND SAFETY

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 Services AG
Tüffenwies 16
8048 Zürich
Tel: +41 58 436 4040
www.sika.com