BUILDING TRUST

PRODUCT DATA SHEET

SikaScreed® HardTop-65

Cementitious rapid and high strength flowable floor levelling screed

DESCRIPTION

SikaScreed® HardTop-65 is a cementitious, 1-part, rapid and high strength, flowable, floor levelling screed and repair mortar for industrial floors. It is suitable as a smooth finished wearing layer or a base layer for Sikafloor® resin-based screeds and coatings.

USES

SikaScreed® HardTop-65 may only be used by experienced professionals.

Cementitious industrial screed for:
- Medium - heavy wear
- Rapid repair and levelling of large areas
- As a bonded, unbonded or floating screed wearing layer
- Bonded, unbonded and floating screed base layer for resin top coats
- Interior and exterior use

CHARACTERISTICS / ADVANTAGES

- Thickness 8–80 mm
- Rapid hardening screed and repair mortar (~40N/mm² 24 hours)
- Can be pumped and easily applied
- Long surface finishing window (> 60 minutes)
- High mechanical and abrasion resistance
- Contains fibres to control shrinkage and cracking
- Final trafficable screed wearing layer
- Low maintenance
- Possible to use specific resin-based trowelling 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

SUSTAINABILITY

- VOC emission classification GEV-Emicode EC1PLUS, licence number 11162/24.02.97

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 fibres and hard aggregates
Packaging	25 kg and 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 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-C65-F7-A6 Complies with the general requirements of EN 1504-3: Class R4: Method 3.1, 4.4 7.1* and 7.2* * Principle 7: provided that the repair system includes a surface protection system with proven protection against carbonation or is a PC mortar.

TECHNICAL INFORMATION

Abrasion resistance (EN 13892-3)

Class	Value
A6 Böhme	≤ 6 cm³ / 50 cm²

12 % water addition performed on a power floated surface

Compressive strength (EN 13892-2) (EN 12190)

Time	Temperature	Water Content	Value
24 hours	+20 °C	12 %	~45 N/mm²
24 hours	+20 °C	15 %	~40 N/mm²

(EN 13892-2) (EN 12190)

Time	Temperature	Water Content	Value
28 days	+20 °C	12 %	≥ 70 N/mm²
28 days	+20 °C	15 %	≥ 60 N/mm²

Tensile strength in flexure (EN 13892-2)

Time	Temperature	Water content	Value
24 hours	+20 °C	12 % 15 %	~5 N/mm²
28 days	+20 °C	12 % 15 %	≥ 7 N/mm²

Tensile adhesion strength (EN 1542)

Time	Temperature	Water content	Value
28 days	+20 °C	12 % 15 %	≥ 2,0 N/mm²

Value in combination with bonding bridge: SikaScreed®-20 EBB

Coefficient of thermal expansion $\alpha_{23/60} \approx 5 \times 10^{-6}$ 1/K (EN 1770)

Reaction to fire $A1_{fl}$

SYSTEMS

System structure	Bonding bridge ▪ SikaScreed®-20 EBB (on dry or matt damp substrates) Screed ▪ SikaScreed® HardTop-65 Refer to the following system data sheet: ▪ Sikafloor® HardTop CM-65 Rapid

APPLICATION INFORMATION

Mixing ratio	~3,0–3,75 L of water for 25 kg of powder
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	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. (± 5 min) at +20 °C
Waiting time to 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. Also refer to System Data Sheet Sikafloor® HardTop CM-65 Rapid. If a resin build-up 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.

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.

FURTHER INFORMATION

- Sika Method Statement: Sikafloor®-Cleaning Regime
- Sika Method Statement: Mixing & Applications of Flooring Systems
- Sika Method Statement: Evaluation and Preparation of Surfaces for Flooring Systems
- Reference must be made to the Sika Method Statement: SikaScreed® HardTop-65
- System Data Sheet: Sikafloor® HardTop CM-65 Rapid

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 the required surface preparation.
- Do not use the mixing equipment for cement based SikaScreed® HardTop materials and previously mixed other cement-based mortars.
- Coverage of the reinforcement with SikaScreed® HardTop-65 must not be considered as carbonation protection.
- The material consumption depends on the substrate roughness and the method of application.
- Do not apply SikaScreed® HardTop-65 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.
- Absolute lowest temperature limit for application is +10 °C. Lower temperatures can affect the setting and may lead to reduced performance.
- In draughty areas, open spaces, at temperatures between +10 °C and +15 °C and in very dry climates. Early plastic shrinkage cracks may occur.
- Light power floating equipment with large diameter blades, provide much better results than heavy equipment with small diameter blades.
- SikaScreed® HardTop systems are not designed to be watertight and completely crack-free.
- Existing static surface cracks in the 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.
- During storage, bags must be protected from moisture. Moisture can have a negative effect on the products reactivity and performance.
- Opened bags must be used immediately.
- For exterior use, SikaScreed® HardTop-65 must be protected using a coating.
- For protection against contamination the application of a suitable surface protection treatment is recommended i.e. polyethylene sheeting

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 QUALITY / PRE-TREATMENT

BONDED SCREED

Concrete substrate must be structurally stable 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-65 tensile adhesion strength ≥ 1,5 N/mm² , 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 tensile adhesion strength 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.

UNBONDED SCREED

Refer to the Sika Method Statement: SikaScreed® HardTop-65

FLOATING SCREED

Refer to the Sika Method Statement: SikaScreed® HardTop-65

EQUIPMENT

Select the most appropriate equipment required for the project:

SUBSTRATE PREPARATION

- Abrasive blast cleaning or planing / scarifying equipment

MIXING

Small - medium volumes

- Mixing containers
- Weighing scales
- Water containers
- Water measuring container
- Electric single or double paddle mixer (<500 rpm) with spiral paddle
- 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.
- Continuous mortar mixer and integral delivery pump with associated hoses i.e. inoCOMB Cabrio 0,2

Free fall mixers must not be used

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
- Specific rapid coating

MIXING

Small - medium volumes
Pour the minimum recommended clean water quantity into a suitable mixing container. While stirring slowly with electric paddle mixer, 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. Add the powder to the water and mix thoroughly for at least for 3 minutes to achieve a smooth consistent mix. The consistency must be checked regularly and included in a jobsite quality control plan. Compare mixing consistency with drill and mixing paddle technique.

Pumping
When using a mortar pump with appropriate equipment (Inotec - InoCOMB). Set up the equipment to achieve a smooth consistent mix. Control the water dosage to achieve the required consistency. Compare mixing consistency with drill and mixing paddle technique.

APPLICATION

Strictly follow installation procedures as defined in method statements, application manuals and working instructions which must always be adjusted to the actual site conditions.
Prior to application, confirm substrate moisture content, relative air humidity, dew point, substrate, air and product temperatures.

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, unbonded and floating Screeds
Pour mixed SikaScreed® HardTop-65 onto prepared substrate and apply evenly to the required thickness using appropriate spreading equipment.
Level surface with screed bar /straight edge

Surface finishing
The finishing must be carried out using finishing tools to the required surface texture.
To obtain optimum surface strength, finish SikaScreed® HardTop-65 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	+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 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.
Small areas which are difficult to access and where optimum surface strength is not required, use hand trowels.
Apply Sikafloor®- 140 W Trowelling Primer between screed layers if additional layers are required. Refer to the System Data Sheet: Sikafloor® HardTop CM-65 Rapid.

Curing
Curing must start after the last finishing operation using polyethylene sheeting or the application of a suitable system primer. Refer to appropriate System Data Sheet.
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 must be cured with polyethylene sheeting for at least 24 hours.

CLEANING OF EQUIPMENT

Removal of fresh remnants from tools and application equipment can be carried out using water immediately after use. Hardened material can only be mechanically removed.

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.

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