

## PRODUCT DATA SHEET

# SikaScreed® HardTop-60

Cementitious, rapid hardening, high strength, floor levelling screed

### 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 ( $\geq 35$  N/mm<sup>2</sup> 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 coating protection

### SUSTAINABILITY

- VOC emission classification GEV-Ecode EC1<sup>PLUS</sup>

### APPROVALS / CERTIFICATES

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

## PRODUCT INFORMATION

Product declaration	EN 13813: Class CT-C60-F7-A6
Composition	Special cement based powder with hard aggregates
Packaging	25 kg bags, 1000 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 +30 °C. Always refer to packaging.
Appearance and colour	Smooth, grey finish
Maximum grain size	D <sub>max</sub> : 3,2 mm
Bulk density	~1,50 kg/l

## TECHNICAL INFORMATION

Abrasion resistance	<b>Class</b>	<b>Value</b>	<b>Method</b>	(EN 13892-3)
	A6*	≤ 6 cm <sup>3</sup> / 50 cm <sup>2</sup>	Böhme	
* performed on a power floated surface				
Compressive strength	<b>Time</b>	<b>Temperature</b>	<b>Value</b>	(EN 196-1)
	24 hours	+20 °C	~35 N/mm <sup>2</sup>	
	28 days	+20 °C	≥ 60 N/mm <sup>2</sup>	
Tensile strength in flexure	<b>Time</b>	<b>Temperature</b>	<b>Value</b>	(EN 196-1)
	24 hours	+20 °C	~ 4 N/mm <sup>2</sup>	
	28 days	+20 °C	≥ 7 N/mm <sup>2</sup>	
Reaction to fire	A1fl			

## SYSTEM INFORMATION

System structure	Bonding bridge: <ul style="list-style-type: none"><li>▪ SikaScreed®-20 EBB</li></ul> Screed: <ul style="list-style-type: none"><li>▪ SikaScreed® HardTop-60</li></ul> For the rapid coating option in combination with the Sikafloor®-140 W Trowelling Primer refer to the following system data sheet: Sikafloor® HardTop CM-60 Rapid
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## 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/m <sup>2</sup> 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".		

<b>Material temperature</b>	+10 °C min. / +25 °C max. (fresh mortar)
<b>Ambient air temperature</b>	+10 °C min. / +30 °C max.
<b>Substrate temperature</b>	+10 °C min. / +30 °C max.
<b>Pot Life</b>	~30 min at +20 °C
<b>Waiting time to overcoating</b>	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-60 Rapid system. If a resin based flooring primer is not used, 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.
<b>Applied product ready for use</b>	~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

Application instructions

Reference must be made to the Sika Method Statement:

- Sikafloor® HardTop- 60 /70 Fast Screed systems
- System Data Sheet: Sikafloor® HardTop CM-60 Rapid

## IMPORTANT CONSIDERATIONS

- 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 cli-

mate 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.
- 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.
- For exterior use, SikaScreed® HardTop-60 must be protected using a coating.
- 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.

## 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

### PRODUCT DATA SHEET

SikaScreed® HardTop-60

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## 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

## SUBSTRATE QUALITY / PRE-TREATMENT

### BONDED SCREED

Concrete substrate must be structurally sound and of sufficient compressive strength (>25 N/mm<sup>2</sup>) with a minimum tensile adhesion strength of 1,5 N/mm<sup>2</sup>.

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/mm<sup>2</sup> 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

## 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	

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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.

Apply Sikafloor®- 140 W Trowelling Primer during powerfloating if additional resin layers are required. Refer to the System Data Sheet: Sikafloor® HardTop CM-60 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 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 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**

Any information or suggestions for use concerning Sika's products, which we either in writing or orally have given buyers or end-users of the product, have been given in good faith based on our own experiences and based on approved praxis and the technological and scientific knowledge on the time of giving such suggestions and information, which are given without any type of guarantees, and which do not lead to any further responsibility from Sika Danmark A/S, besides what is stated in the sales agreement in question. The buyer or end-user should themselves investigate or otherwise make sure, that our products are suitable for the use in question and further make sure that the products are kept and used correct and in agreement with the published rules and considering the actual conditions in order to avoid damages or less satisfactory results. Any order is accepted and any deliverance is affected according to the general terms of sales and delivery from Sika Danmark A/S, which are considered known and accepted, and which could be handed out when asked for. Our catalogues are not up-dated automatically. The present product data sheet is only for use in Denmark. Values stated in the present product data sheet should be seen as recommended, unless stated otherwise.

**Sika Danmark A/S**  
Hirsemarken 5  
3520 Farum  
Tlf. +45 48 18 85 85  
www.sika.dk



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