

## PRODUCT DATA SHEET

# SikaScreed® HardTop-70 DE

High-strength, fast-loading levelling mortar for repairs on small floor sections

### DESCRIPTION

SikaScreed® HardTop-70 DE 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 as a base layer for resin based coatings.

### USES

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

- Rapid repair and levelling of small areas of 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.

### PRODUCT INFORMATION

|                              |   |
|------------------------------|---|
| <b>Composition</b>           | Special cement binder with hard aggregates  |
| <b>Packaging</b>             | 25 kg bags  |
| <b>Shelf life</b>            | 12 months from date of production   |
| <b>Storage conditions</b>    | Product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +5 °C and +35 °C. Always refer to packaging. |
| <b>Appearance and colour</b> | Smooth, grey finish   |
| <b>Maximum grain size</b>    | D <sub>max</sub> : 3.2 mm   |

### CHARACTERISTICS / ADVANTAGES

- Very fast curing for immediate use (> 45 N/mm<sup>2</sup> compressive strength after 24 hrs.)
- High layer thicknesses (≤ 200 mm) with almost shrinkage-free curing (≤ 0.2 mm/m)
- High freeze-thaw salt resistance
- High abrasion resistance (class A6 according to Böhme)
- Complete internal water binding due to innovative cement-bound binder system
- Quick coating with Sikafloor®-151 after only 2 hours from the end of smoothing
- Mineral, pollutant-free and ecologically harmless
- EMICODE EC1PLUS (very low emission)

### APPROVALS / CERTIFICATES

- CE Marking acc. to EN 13813: CT-C70-F8-A6
- CE Marking acc. to EN 1504-3: Class R4
- Reaction to fire: class A1

## TECHNICAL INFORMATION

|                                      |                             |                    |                        |                  |
|--------------------------------------|-----------------------------|--------------------|------------------------|------------------|
| Abrasion resistance                  | Class A6 according to Böhme |                    |                        | (DIN EN 13892-3) |
| Compressive strength                 | <b>Time</b>                 | <b>Temperature</b> | <b>Value</b>           | (DIN EN 13892-2) |
|                                      | 24 hours                    | +20 °C             | ~45 N/mm <sup>2</sup>  |                  |
|                                      | 28 days                     | +20 °C             | ≥ 70 N/mm <sup>2</sup> |                  |
| Modulus of elasticity in compression | ~34,000 N/mm <sup>2</sup>   |                    |                        |                  |
| Tensile strength in flexure          | <b>Time</b>                 | <b>Temperature</b> | <b>Value</b>           | (DIN EN 13892-2) |
|                                      | 24 hours                    | +20 °C             | ~6 N/mm <sup>2</sup>   |                  |
|                                      | 28 days                     | +20 °C             | ≥ 8 N/mm <sup>2</sup>  |                  |

## SYSTEM INFORMATION

### System structure

### System structure for example:

| Application     | Product                           | Consumption                   |
|-----------------|-----------------------------------|-------------------------------|
| Bonding primer  | SikaScreed®-10 BB /               | ~1.8 kg/m <sup>2</sup> /      |
|                 | SikaScreed®-20 EBB                | ~1 kg/m <sup>2</sup>          |
| Mortar          | SikaScreed® HardTop-70 DE         | ~2.1 kg/m <sup>2</sup> pro mm |
| Bonding agent   | Sikafloor®-140 W Troweling Primer | ~200 - 300 g/m <sup>2</sup>   |
| Primer / Curing | Sikafloor®-151 or PE-Folie        | ~0.8 - 1 kg/m <sup>2</sup>    |

Consumption is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

## APPLICATION INFORMATION

|                         |   |
|-------------------------|---|
| Mixing ratio            | ~2.8 - 3.0 litre of water for 25 kg of powder |
| Fresh mortar density    | ~2.3 kg/l                                     |
| Layer thickness         | 10 - 200 mm                                   |
| Material 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                | ~25 min. at +20 °C                            |

| Waiting time to overcoating | Layer             | Product                                 | Waiting time                    |
|-----------------------------|-------------------|---|---------------------------------|
|                             | 1. Bonding primer | SikaScreed®-10 BB<br>SikaScreed®-20 EBB | -                               |
|                             | 2. Mortar         | SikaScreed® HardTop-70 DE               | Wet-on-wet with bonding primer  |
|                             | 3. Bonding agent  | Sikafloor®-140 W Troweling Primer       | 45 - 60 minutes while troweling |
|                             | 4. Primer         | Sikafloor®-151                          | ~2 - 48 hours after troweling*  |

\* If Sikafloor®-151 is not applied within approx. 2 - 4 hours after the smoothing process, SikaScreed® HardTop-70 DE must be cured with PE foil for at least 18 hours. 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.

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## 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.

## IMPORTANT CONSIDERATIONS

- SikaScreed® HardTop-70 DE 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 DE 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-70 DE 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-70 DE 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.
- In draughty 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 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 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.
- 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.

## ECOLOGY, HEALTH AND SAFETY

GISCODE: ZP 1

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

### SUBSTRATE QUALITY / PRE-TREATMENT

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®. All dust, loose and friable material must be completely removed from all surfaces before application of SikaScreed® HardTop-70 DE, 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.

### 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 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.

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020815020010000090

## APPLICATION

### Bonding primer

SikaScreed®-10 BB: Before applying SikaScreed® HardTop-70 DE, the prepared substrate must be thoroughly pre-wetted to a saturated surface dry condition without any standing water remaining. Apply SikaScreed® HardTop-70 DE 'wet on wet' within 15 minutes of mixing (+20 °C).

SikaScreed®-20 BB: To the prepared dry or matt damp substrate without any standing water. Apply SikaScreed® HardTop-70 DE 'wet on wet' within 30 minutes of mixing (+20 °C).

Note: If the SikaScreed®-10 BB or SikaScreed®-20 EBB bonding bridge has dried, they must be removed mechanically and replaced before application of SikaScreed® HardTop-70 DE.

## APPLICATION

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

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

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 datasheet for waiting times and further information. 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.

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## 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.

## 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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