

PRODUCT DATA SHEET

SikaScreed®-40 Binder

Low-shrinkage ternary binder for screeds with temperature-independent setting time

DESCRIPTION

SikaScreed®-40 Binder is a ternary binder for the preparation of low-shrinkage screeds with high strength. The formulation enables a temperature-independent setting time of the screed. Strengths of class CT-C40-F7 according to DIN EN 13813 can already be achieved with a binder to sand mixing ratio of 1:5.

USES

- Large-scale refurbishment of industrial screeds exposed to high mechanical loads
- High-quality screeds on an isolating layer or insulating layer (also heated screeds) in commercial and industrial construction for all common floor coverings
- Indoors and outdoors, can also be used directly
- Permanently wet areas
- Can also be used in residential construction

FEATURES

- Screed quality CT-C40-F7 already possible with a mixing ratio of 1:5 (DIN EN 13813)
- Setting time independent of temperature
- Long troweling time window
- High early strength
- Can be used in many applications
- Frost resistant
- Insensitive to moisture (permanently wet area)
- Long pump feed possible
- Temperature resistant from -30 °C to +80 °C

CERTIFICATES AND TEST REPORTS

EMICODE EC1^{PLUS} (very low emission)

PRODUCT INFORMATION

Composition	Grey powder
Packaging	20 kg bag and 1,000 kg BigBag
Shelf life	8 months from production date
Storage conditions	Store in closed and undamaged original packaging at temperatures between +5 °C and +30 °C in a dry condition.
Bulk density	~1.1 kg/litre

TECHNICAL INFORMATION

Compressive strength	Mixing ratio (Binder : Sand)	Compressive stiff- ness after 3 days	Compressive stiff- ness after 28 days	(DIN EN 13892-2)
	Ratio 1:4 4 bags (80 kg)	≥ 35 N/mm ²	≥ 60 N/mm ²	
	Ratio 1:5 3 bags (60 kg)	≥ 25 N/mm ²	≥ 40 N/mm ²	
	Ratio 1:6 2,5 bags (50 kg)	≥ 15 N/mm ²	≥ 35 N/mm ²	
	Screed sand of grain size 0 to 8 mm (grading curve A/B) according to DIN 1045. Ambient temperature and material temperature of +23 °C and relative humidity 50 %. The above specifications correspond to a full mixing drum with a usable volume of 200 liters (filling capacity 100 %).			
Flexural-strength	Mixing ratio (Binder : Sand)	Bending tensile strength after 3 days	Bending tensile strength after 28 days	(DIN EN 13892-2)
	Ratio 1:4 4 bags (80 kg)	≥ 5 N/mm ²	≥ 7 N/mm ²	
	Ratio 1:5 3 bags (60 kg)	≥ 4 N/mm ²	≥ 7 N/mm ²	
	Ratio 1:6 2,5 bags (50 kg)	≥ 3 N/mm ²	≥ 5 N/mm ²	
	Screed sand of grain size 0 to 8 mm (grading curve A/B) according to DIN 1045. Ambient temperature and material temperature of +23 °C and relative humidity 50 %. The above specifications correspond to a full mixing drum with a usable volume of 200 liters (filling capacity 100 %).			
Shrinkage	Shrinkage class SW1			(DIN 18560-1)

APPLICATION INFORMATION

Consumption	Mixing ratio	Consumption of binder
	Ratio 1:4 4 bags (80 kg)	~ 4 kg/m ² per cm thickness
	Ratio 1:5 3 bags (60 kg)	~ 3,4 kg/m ² per cm thickness
	Ratio 1:6 2,5 bags (50 kg)	~ 2,9 kg/m ² per cm thickness
	The above specifications correspond to a full mixing drum with a usable volume of 200 liters (filling capacity 100 %).	
Layer thickness	min. 10 mm / max. 160 mm Depending on the maximum grain size of the screed sand.	
Material temperature	min. +5 °C / max. +25 °C	
Ambient air temperature	min. +5 °C / max. +25 °C	
Substrate temperature	min. +5 °C / max. +25 °C	
Pot Life	~ 60 minutes Screed sand of grain size 0 to 8 mm (grading curve A/B) according to DIN 1045. Ambient temperature and material temperature of +23 °C and relative humidity 50 %.	

Waiting time	Walkable	~4 hours
	Ready for covering with vapor-tight and moisture-sensitive coverings/coatings	3 days
Screed sand of grain size 0 to 8 mm (grading curve A/B) according to DIN 1045.		
Ambient temperature and material temperature of +23 °C and relative humidity 50 %.		

SYSTEM INFORMATION

System structure	Bonding agent	Screed
	SikaScreed®-40 BB	SikaScreed®-40 Binder

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

- The specified values always depend on the mixing ratio, aggregate used and amount of water
- Aggregates rich in fine particles (sands) have a larger surface area than aggregates low in fine particles. They therefore require more cement and more water for proper screed production. If they are neglected and also processed with a too soft consistency, the screed will only achieve low strength, shrinkage cracks and warping will occur and the equilibrium moisture content will only be reached later.
- The strength and the low residual moisture, which is important for readiness for covering, depends on the grading curve of the aggregate sand, the compaction of the screed, the mixing ratio, the ambient and substrate temperature, the aggregate temperature, the air humidity and the layer thickness.
- SikaScreed®-40 Binder screed must not be mixed with other cements, rapid binders, fibers, additives or admixtures.
- In outdoor areas, cover with foil until ready to walk on in the event of expected early rain, extremely dry weather or strong winds.
- Do not dilute SikaScreed®-40 Binder screed that has already set with water or mix with fresh SikaScreed®-40 Binder mortar.
- Screeds with SikaScreed®-40 Binder can only be mixed as intended in a compulsory mixer or screed mixing pumps.
- Do not add water to SikaScreed®-40 Binder for surface treatment.
- The covering of the reinforcement with SikaScreed®-40 Binder must not be counted as carbonation protection.
- Existing joints in the substrate must also be taken over in the screed.
- Machine troweling/compaction is required to achieve high surface strengths (e.g. for direct use or as a substrate for coatings)

- When producing decorative screeds or substrates for Ucrete® and Sikafloor® PurCem® coatings, a mixing ratio of binder to sand of 1:4 and a sufficient mixing time of at least 1 minute is recommended.
- If the mixing drum is only 80% full, it is recommended to add 3.5 bags of SikaScreed®-40 Binder to achieve a binder to sand mixing ratio of 1:4.

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 PREPARATION

Bonded screed

The substrate must be clean, free of grease and oil and free of loose fine particles. Cement skin, paints or other surface treatment agents must be completely removed. The substrate must be load-bearing and have a sufficient compressive strength of $\geq 25 \text{ N/mm}^2$ and a minimum adhesive tensile strength of 1.5 N/mm^2 . A prerequisite for a good bond is suitable substrate preparation using grinding, blasting or milling techniques and the use of the appropriate system bonding bridge SikaScreed®-40 BB. Absorbent mineral substrates must be pre-wetted with sufficient water. Standing water (puddles) should be avoided.

MIXING

Prepare the aggregate mixture in a compulsory mixer according to the mixing instructions below. Add SikaScreed®-40 Binder and mix for 1 minute. With the mixer running, add water depending on the moisture content of the aggregate mixture used and mix for approx. 2 minutes. Avoid adding too much water!

Mixing ratio of binder to sand ratio 1:4

Mixing instructions for a conventional screed mixing pump (usable volume approx. 200 liters of fresh mortar):

Half fill the mixing drum with aggregate (approx. 160 kg of a low-fine particle grading curve in the A/B range; maximum grain size matched to the layer thickness). Then add 4 bags (= 80 kg) of SikaScreed®-40 Binder (corresponds to 400 kg SikaScreed®-40 Binder per m³ of fresh mortar). Fill the mixing drum with a further 160 kg of aggregate and adjust the consistency by adding water.

Mixing ratio of binder to sand ratio 1:5

Mixing instructions for a conventional screed mixing pump (usable volume approx. 200 liters of fresh mortar):

Half fill the mixing drum with aggregate (approx. 150 kg of a low-fine particle grading curve in the A/B range; maximum grain size matched to the layer thickness). Then add 3 bags (= 60 kg) of SikaScreed®-40 Binder (340 kg SikaScreed®-40 Binder per m³ of fresh mortar). Fill the mixing drum with a further 150 kg of aggregate and adjust the consistency by adding water.

Mixing ratio of binder to sand ratio 1:6

Mixing instructions for a conventional screed mixing pump (usable volume approx. 200 liters of fresh mortar):

Half fill the mixing drum with aggregate (approx. 150 kg of a low-fine particle grading curve in the A/B range; maximum grain size matched to the layer thickness). Then add 2.5 bags (= 50 kg) of SikaScreed®-40 Binder (290 kg SikaScreed®-40 Binder per m³ of fresh mortar). Fill the mixing drum with a further 150 kg of aggregate and adjust the consistency by adding water.

APPLICATION

When producing a bonded screed, the pre-treated surface must be pre-wetted and pre-slurried with SikaScreed®-40 BB system bonding bridge and immediately applied fresh on fresh with SikaScreed®-40 Binder screed mortar.

Spread the screed with a shovel, smoothing trowel or squeegee, compact, level with a level and rub down with a wooden board. Machine smoothing is required to achieve high surface strengths (e.g. for direct use or as a substrate for coatings).

Protect freshly applied screed against premature drying out. Keep windows closed indoors. Avoid direct sunlight.

If SikaScreed®-40 Binder is installed as a heated screed, the heating protocol must be observed. DIN 18560 and DIN 18353 must be observed during application.

CLEANING OF EQUIPMENT

All tools and equipment must be cleaned with water immediately after use. Cured material can only be removed mechanically.

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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