

Product Data Sheet
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SikaSet 45

SikaSet® 45

Low Temperature, Rapid Hardening Repair/Bedding Mortar

Product Description SikaSet 45 is a one component magnesia phosphate based, rapid hardening and high early strength concrete repair and ironwork bedding mortar for use in temperatures as low as 0°C.

Uses

- Rapid repair mortar for horizontal concrete surfaces
- Industrial floors, roads, runways, bridge decks and car park decks
- Filling mortar for voids and honeycombed areas in concrete
- Bedding mortar for inspection chambers, manhole covers, gully grates, stanchion posts, street furniture

Characteristics / Advantages

- Easy to use just add water
- Can be placed at low temperatures
- Good un-primed adhesion
- High early age and ultimate strengths
- Shrinkage compensated mortar
- Trafficable within 1 hour
- Increased resistance to de-icing salts
- Non corrosive to steel
- Durable freeze thaw resistance
- Can be over coated

Product Data

Form	Powder
Appearance / Colours	Natural (concrete grey).
Packaging	25 kg bags

Storage

Storage Conditions / Shelf-Life 6 months from date of production if stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5°C and +25°C.

Construction



Technical Data

Chemical Base	Blend of natural aggregates mixed with magnesium phosphate cement system
Density	~ 2.2 kg/l (mixed wet density)
Application Thickness per layer	10.0 mm minimum 50.0 mm maximum

Mechanical/Physical Properties

Compressive strength	@ 21°C (BS 1881)	30 mins	60 mins	120 mins	1 day	7days	28 days
		15N/mm ²	25N/mm ²	30N/mm ²	40N/mm ²	45N/mm ²	52N/mm ²
	@5°C (BS 1881)		60 mins		1 day	7days	28 days
			15N/mm ²		40N/mm ²	50N/mm ²	60N/mm ²

Flexural Strength 28 days @ 20°C - 9N/ mm²

Shrinkage 28 days - <0.02%

System Information

Application Details

Consumption	2.2 kg/m ² /mm (2.2 kg/litre) Excluding allowances for loss wastage, surface profile and porosity.
Concrete Substrate Preparation	Breakout and remove all concrete designated as being defective, loose and unsound, using suitable mechanical equipment. Ensure sufficient concrete is removed from around reinforcement to allow priming of the steelwork and compaction of the repair material. At the repair locations, feather edging should be avoided. The edges should be square cut to at least the recommended minimum application thickness of the repair material. Where a saw cut is employed, the substrate should be roughened mechanically to provide a 'key' between the repair mortar and substrate.
Reinforcement And Ironwork Preparation	All exposed reinforcement should be thoroughly prepared to clean, bright metal, using abrasive blast cleaning or other approved methods.
Steel Reinforcement Priming	Where required, prior to applying SikaSet 45 into the repair area, apply two coats of SikaTop® Armatec 110 EpoCem onto the reinforcement in accordance with the product technical data sheet.

Application Conditions / Limitations

Substrate Temperature	+0°C min. / +35°C max.
Ambient Temperature	+0°C min. / +35°C max.

Application Instructions

Mixing

SikaSet 45 repair mortar should be mechanically mixed using a forced action mixer or in a clean drum using a drill and paddle.

A normal concrete mixer is NOT suitable.

Mix SikaSet 45 with water for at least 3 minutes to achieve a uniform consistency. Immediately apply the mortar.

Application

The prepared substrate should be thoroughly soaked with clean water until uniformly saturated leaving no standing water.

The mixed mortar must be worked well into the prepared and pre-wetted substrate by gloved hand or trowel, filling all voids ensuring full encapsulation around exposed reinforcement.

For maximum bond between existing concrete and the mortar when used for horizontal trafficable repairs. It is recommended that a bonding bridge consisting of a slurry produced by adding a small amount of water to the mix and brushed into the substrate is used (trial recommended). Apply mortar wet on wet and compact well. Apply in layers not less than the minimum thickness and no greater than the maximum thickness.

Where multiple layers are required the previous layers should be keyed and allowed to initially set prior to proceeding. For depths greater than 50mm a 10mm single sized coarse aggregate, complying with BS882 grading limits, may be added up to a rate of 10kg per 25kg of SikaSet 45 and remixed. Additional aggregates must be clean, saturated but surface dry, preferably low absorption and round in shape. Under no circumstances should admixtures or cement be added.

The final layer may be levelled using a steel/wooden tamp or straight edge where required. SikaSet 45 is best finished with minimal working using a wood/plastic float or a damp sponge, after initial set has taken place to obtain the required surface texture.

Cleaning of Tools

Remove SikaSet 45 from tools and equipment with water.

Hardened material can only be removed mechanically.

Notes on Application / Limitations

Curing Details

Curing Treatment

Finished areas will not normally require curing owing to the rapid setting nature of SikaSet 45.

However, where rain, or excessively hot, dry or windy conditions prevail, cover after application using hessian or polythene sheeting taped down at the edges or other approved method.

For cold weather working also use insulation to maintain temperatures.

Never wet cure SikaSet 45

Applied Product ready for use

Notes on Application / Limitations

- Large/deep repairs may be subject to shrinkage and cracking. This may be minimised by limiting repair volumes and reducing repair thickness
 - Do not add water in excess of the recommended dosage
 - For cold weather working below 5°C preheat mixing equipment and gauging water to a temperature of 25-30°C
 - Apply only to prepared sound surfaces
 - Allow mortar to take initial set between applications
 - For hot weather working above 30°C keep mixing equipment cool by working in the shade and chill gauging water to 5°C
 - Do not attempt to rework material which has started to harden
 - Protect freshly applied material from freezing
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Value Base	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.
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.
Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.
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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