

Sikafloor®-1 MetalTop

Metallic dry shake floor hardener

Product Description

Sikafloor®-1 MetalTop is a one part, preblended, coloured metallic dry shake hardener for concrete comprising of cement, hard metallic ferro silicon aggregates, special admixtures and pigments.

Uses

- Sikafloor®-1 MetalTop provides a non-staining, ultra hard wearing, metallic dry shake topping for monolithic floors. When sprinkled and trowelled into fresh wet concrete floors, it forms a coloured, extremely wear resistant smooth and dense surface
- Typical uses are in warehouses, heavy duty, prestige and high durability requirement distribution centres, factories, manufacturing facilities, transport terminals, power stations, etc.

Characteristics / Advantages

- Highest wear resistance rating
- Excellent impact resistance
- Non staining, non corroding
- Cost effective, long life floor
- Maintenance free
- Slip resistant surface possible
- Dust proof
- Anti-static performance possible
- Available in a wide range of colours

Tests

Approval / Standards

Conforms to the requirements of BS 8204, EN 206/1, ACI 304.1R 96 and TR 34.
Awarded BBA (British Board of Agrément) Certificate No: 97/3334.
Warrington Fire Research Report N° 12560, dated 22.12.95 - Non flammable.
Warrington Fire Research Report N° 12563, dated 22.12.95 - Non toxic fumes.
Warrington Fire Research Report N° 12937, dated 25.04.96 - Non sparking.
Rapra Technology Ltd., Project Ref. 180/A1647, dated 21.04.95 - Conductivity.
Rapra Technology Ltd., Project Ref. D0108 CTR NE1107, dated 27.02.97 - Conductivity.
LUL London Underground Ltd., Ref. No. LUL 6220-03-046-TP3, dated 22.12.95 - Slip Resistance.
Aston University, Report N°: AL/AR 121296, dated 12.12.96 - BCA Abrasion resistance.
GEOCISA Ref. P-02/01645, dated Jan. 9, 2003 - Taber Abrasion resistance.



Product Data

Form

Appearance / Colours Powder
Natural (concrete grey)
Other colours upon request.

Packaging 25 kg bags

Storage

Storage Conditions / Shelf-Life 12 months from date of production if stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5°C and +30°C.

Technical Data

Chemical Base Natural source of crushed and graded ferro silicon aggregates mixed with cement, pigments and admixtures.

Density ~ 2.5 kg/l (bulk density)

Layer Thickness ~ 2.5 to 3.0 mm at the recommended coverage of ~ 7.0 kg/m²

Fire Rating Non flammable. (BS 476 Part 6:1989)

Non toxic fumes. (BS 476 Part 7:1987)

Non sparking alloy particles.

Electrostatic Behaviour Anti-static flooring. (BS 2050 Method A.4.1:1978)

5000 Volts decay time < 0.1 secs. (BS 2782)

Mechanical / Physical Properties

Slip Resistance Slip Resistance Values (BS 8204 Part 2)

Substrate	SRV Dry	SRV Wet
Normal	65	30
Chemically aged	65	50

Abrasion Resistance Class "Special" Severe abrasion resistance (Less than 0.05 mm wear depth) (BS 8204 Part 2)

4146 mg (UNE 48.250-92 / ASTM D-4060)
Taber Abrader H-22 / 1000 g / 1000 cycles

System Information

System Structure Use products mentioned below as indicated in their respective Product Data Sheets.

Substrate: Fresh concrete slab (See Substrate Quality below)

Dryshake: Manual or machine application of Sikafloor®-1 MetalTop
Levelling of surface by means of power trowel or laser screed.
Final smoothing with power trowel.

Curing compound: Application of any of the solvent based products in the Sikafloor® ProSeal range.

Application Details

Consumption ~ 7 kg/m². This figure does not allow for surface profile and wastage.

Substrate Quality The concrete deliveries must be of consistent quality.

A concrete slump in the range 75 to 110 mm will normally give best results.

The slab must be of good quality concrete with a minimum water/cement ratio consistent with the production of a fully compacted slab.

The compressive strength must be a minimum of 25 N/mm².

Use of Sikament[®] or Sika Viscocrete[®] super plasticisers is advised to ensure the optimum quality of concrete and where fibres are used, their optimum dispersion within the mix.

Air Entrained Concrete is not a suitable substrate for the application of dryshake hardeners.

Application Conditions / Limitations

Substrate Temperature +5°C min. / +35°C max.

Ambient Temperature +5°C min. / +35°C max.

Relative Air Humidity 30% r.h. min. / 98% r.h. max.

Application Instructions

Application Method / Tools

(i) Mechanical Application - Automatic spreader in conjunction with a laser screed:
Spread Sikafloor[®]-1 MetalTop evenly onto the concrete immediately after screeding at 7 kg/m² in one application.

(ii) Manual application:

Dependent on the conditions, remove the surface "bleed" water or allow it to evaporate. Sprinkle Sikafloor[®]-1 MetalTop onto the screeded concrete evenly in 2 stages (first stage: 4 kg/m²; second stage: 3 kg/m²).

Care must be taken to apply the product without creating ripples etc. in the concrete surface. Overall application rate 7 kg/m². Casting Sikafloor[®]-1 MetalTop powder carelessly or further than 2 metres from point of casting will reduce the consistency of finish.

Compaction:

The first application must be worked into the slab followed immediately by the application of the second stage quantity of Sikafloor[®]-1 MetalTop.

Notes:

- Never add water to the surface where the dryshake has been applied.
 - Sikafloor[®]-1 MetalTop results in the slab surface becoming "stiff" more quickly than usual. Careful trimming must take place along the edges where adjoining slabs are to be poured.
 - Final finishing to close pores and remove undulations can be achieved either by hand or powered trowels.
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Cleaning of Tools

Clean all tools and application equipment with water immediately after use. Hardened / cured material can only be removed mechanically.

Application Time

Application time for dryshake products is influenced by every variable which affects the placing of concrete, and can therefore vary substantially, depending on the prevailing conditions.

For mechanical application with automatic spreader and laser screed, the spreading can start almost immediately after the concrete has been levelled to allow for the hydration of the dryshake. Compaction with the trowel can start as soon as the weight of the power trowels is supported by the concrete.

For manual application, the dryshake must be spread once the concrete can be stepped on, without leaving a print deeper than 3 - 5 mm.

Periodical checking of the condition and development of the concrete will determine the correct time frame for each stage and sequence of application.

Notes on Application / Limitations

The application of the dry shake powder must not be carried out in strong wind or draughts.

Do not use concrete where some cement has been replaced by fly ash, as this makes the mix sticky and less workable.

Variations in concrete characteristics such as water content and cement quality may lead to slight colour variations.

Dry shake hardeners give a finish to concrete with some colour variation across the floor due to the natural variability of the concrete onto which they are applied.

To ensure optimum of colour consistency, it is essential that the floor laying operation is as clean and protected from the environment as possible.

Colour variation during the drying out period is normal for this system and is to be expected.

Every effort must be made to ensure an even application of Sikafloor®-1 MetalTop. Correct timing and trowelling techniques are essential.

At low relative humidities (below 40%), efflorescence can appear on the surface.

At high relative humidities (above 80%), bleeding, slower curing and hardening can occur and extended finishing operations be required.

Slip resistance can be enhanced through chemical ageing. Refer to the Method Statement for Application for details.

Do not apply over air entrained concrete or concrete with an air content greater than 3%.

Curing Details**Curing Treatment**

Cure and seal Sikafloor®-1 MetalTop immediately after finishing using any of the solvent based products in the Sikafloor® ProSeal range. (Refer to separate Product Data Sheet). Apply by roller or fine mist spray. Disperse any excess pools using a roller.

Joints:

After finishing operations and completing saw cuts, clean off any residual saw lubricant / slurry without delay. Joints can be filled with Sikaflex® PRO-3 WF or another appropriate Sikaflex® sealant in accordance with the floor design requirements.

Applied Product ready for use

Substrate temperature	+10°C	+20°C	+30°C
Foot traffic	~ 18 hours	~ 12 hours	~ 8 hours
Fully serviceable	~ 10 days	~ 7 days	~ 5 days

The above values are dependent upon the concrete reaching its design strength for serviceability and will be affected by changing ambient conditions, particularly temperature and relative humidity.

Cleaning / Maintenance**Methods**

To maintain the appearance of the floor after application, Sikafloor®-1 MetalTop must have all spillages removed immediately and must be regularly cleaned using rotary brushes, mechanical scrubbers, scrubber dryers, high pressure washers, wash and vacuum techniques, etc., using suitable detergents and waxes.

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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