BUILDING TRUST

PRODUCT DATA SHEET

Sikafloor®-3 QuartzTop Design

Polishable mineral dry-shake floor hardener for multi-layer integral overlay application

PRODUCT DESCRIPTION

Sikafloor®-3 QuartzTop Design is a one-part, pre-blended, polishable mineral dry-shake hardener for concrete. It contains cement, specially selected quartz mineral aggregates, fibers, and additives. Three versions are available: Sikafloor® EasyFinish CS-30 - no grinding or polishing, Sikafloor® CreamPolish CS-31 - three step polish to a class A creamy finish, Sikafloor® TerrazzoEffect CS-32 - seven step polish to a class B micro terrazzo like finish.

USES

Sikafloor®-3 QuartzTop Design may only be used by experienced professionals.

- Polishable mineral dry-shake topping for monolithic floors in industrial, commercial, and public buildings

CHARACTERISTICS / ADVANTAGES

- Aesthetically pleasing wear surface
- Consistently colored polished surface
- Time and cost-efficient - polishable in 7 days
- Allows successful polishing of Type 1L cement
- High wear resistance rating
- Doubles compressive strength of 5,000 psi slab
- Dust-proof surface
- Multiple versions ideal for clean room environments
- Smoother denser surface makes it easy to clean
- Quality-assured, consistent, factory blended product
- Designed for multi-layer application
- A terrazzo look can be achieved with subsequent grinding and polishing
- Reduce the risks of delamination and shrinkage cracks by using Sikafloor®-931 Finishing Aid
- Covers and hides fibers used in concrete design

PRODUCT INFORMATION

Chemical Base	Natural mineral aggregates graded and mixed with cement, fibers, additives, and pigments
Packaging	55 lb. (24.9 kg) fill in paper bag
Appearance / Color	Sikafloor®-3 QuartzTop Design is packaged in Gray and White.
Shelf Life	12 months in original unopened container
Storage Conditions	Store in original, unopened containers, in dry storage, between 41-86°F (5-30°C).
Bulk Density	2.25 kg/m³ (ISO 697) 140 lb./cu. ft. (ASTM D1895 Method B)

TECHNICAL INFORMATION

Abrasion Resistance	AR 0.5		BCA Abrasion Resistance Test (BS EN 13892-4)
Compressive Strength	Cured 7 days at 73.4°F (23°C)	> 8,500 psi	(ASTM C 109)
	Cured 7 days at 73.4°F (23°C)	> 58 N/mm²	(EN 13892-2)
	Cured 28 days at 73.4°F (23°C)	> 10,200 psi	(ASTM C 109)
	Cured 28 days at 73.4°F (23°C)	> 70 N/mm²	(EN 13892-2)
Flexural Strength	Cured 28 days at 73.4°F (23°C)	> 1,450.4 psi	(ASTM D790)
	Cured 28 days at 73.4°F (23°C)	> 10 N/mm²	(EN 13892-2)

APPLICATION INFORMATION

Coverage	0.8-2 b./sq. ft. (4-10 kg/sq. m) Coverage data is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level, wastage, or any other variations. Apply Sikafloor®-3 QuartzTop Design to a test area to calculate the exact coverage for the specific substrate conditions and proposed application equipment. White surface requires application at upper end of consumption rate.
Layer Thickness	1/16-3/16 in. (1.6-4.7 mm)
Ambient Air Temperature	41-86°F (5-30°C)
Relative Air Humidity	30-98 %

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

LIMITATIONS

Using Alternative Products for the Finishing Process

- This patented application system has a substantial risk of floor failure if these instructions are not followed or substitute products are used.
- Only use the products described in the application process.

Damaged Finish Due to Excessive Drying of the Surface
- Exposure to environmental conditions during application can cause cracking and color inconsistencies.
- Multi-layer application is possible with Sikafloor®-931 Finishing Aid only.
- Do not apply Sikafloor®-3 QuartzTop Design in strong wind or draughts.
- Keep the floor laying operation clean and protected from the environment.

Poor Finish Due to Uneven Application
- Poor application practices can result in an inconsistent finish.
- Ensure an even application of Sikafloor®-3 QuartzTop Design and use correct timing and trowelling techniques.

Low Relative Humidity Below 40 %
- Efflorescence can appear on the surface at low relative humidity.

High Relative Humidity Above 80 %
- Bleeding, slower curing, and hardening can occur, and extended finishing operations may be required at high relative humidity.

Prevailing Conditions Affecting Application Time
- Application time for dry-shake products is influenced by many variables that affect the placement of concrete and can, therefore, vary substantially depending on the prevailing conditions.

Color Variations
- Variations in concrete characteristics, such as water content and cement quality, may lead to slight color variations.
- Low and uneven consumption of Sikafloor®-3 QuartzTop Design can increase color variations.
- Use plastic trowelling tools (pans and blades) to eliminate dark spots on the surface after finishing, especially when light colors are applied.
- Color variation during the drying period is typical for this system and is to be expected.
- Dry-shake hardeners give concrete a specific finish, with some color variation across the floor due to the natural variability of the concrete onto which they are applied.

Repeated Power Trowelling
- Repeated power trowelling brings tension to the surface and can result in micro-cracks on the floor. This is typical for all power-trowelled concrete surfaces and does not negatively impact floor performance.
- Using Sikafloor®-931 Finishing Aid in proper consumption helps to decrease microcracks on the floor.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Poor Finish Due to Incompatible Concrete Additives and Admixtures

A poor-quality finish can result from using dry-shake hardeners on concrete with incompatible additives and admixtures. The correct selection of concrete additives and admixtures is important for the correct concrete mix design. Contact Sika Technical Services for further advice.
- Do not use air-entraining agents. Air-entrained concrete is not a suitable substrate for the application of dry-shake hardeners.
- Do not apply over concrete containing calcium chloride or concrete containing aggregate that has been saturated with salt water.
- Do not use concrete with fly ash partially replacing the cement content, as this can result in a sticky and less workable concrete mix.
- Use Sikament® or Sika® ViscoCrete® superplasticizers to ensure the optimal quality of the concrete mix and – with mixes where fibers are used – their uniform distribution throughout the mix. Consult the most current Sikament® or Sika® ViscoCrete® Product Data Sheets for complete application instructions. Concrete deliveries must be of consistent quality and comply with local standards. Concrete mix designs and placement/finishing should comply with ACI 302 guidelines.
- If casting is planned in cold-weather conditions, the customer/main contractor shall provide heating in the building. The minimum air and subbase temperatures during casting must be 50°F (10°C). If the floor temperature is below 50°F (10°C), Sikafloor®-931 Finishing Aid may retard the surface layer. For best results, apply products when the surface temperature will remain between 54-77°F (12.2-25°C) during the application and finishing.
- To minimize the potential shrinkage of the concrete floor slab, the following conditions are required as best practice for concrete casting: a closed building free from crosswinds, direct sunlight, and the leakage of any liquids (water, rain, etc.).
- The slab must be good quality concrete with a water-

cement ratio of between 0.45 and 0.55 and must be consistent while being poured. The compressive strength must be at least 3626.

SUBSTRATE PREPARATION

Preconditions

The concrete has been cast, compacted, and leveled (screeded). The right timing of starting the pan-power floating sequence and or the application of the Sikafloor®-931 Finishing Aid is influenced by many factors which vary. Of most importance: humidity, temperature, w/c ratio, mix design, bleed water, air movement, amount of personnel and equipment, and area size. In general, the more dry-shake that needs to be applied, the earlier the start of the pan-power floating sequence, though it must not be too early.

APPLICATION

Below instructions are a general guide to application of the product range. Please refer to the system data sheet for specific material usage, coverage rates and application instructions for each of the three Sikafloor®-3 QuartzTop Design Systems:
Sikafloor® EasyFinish CS-30
Sikafloor® CreamPolish CS-31
Sikafloor® TerrazzoEffect CS-32

Mechanical Application: Automatic Spreader in Conjunction with a Laser Screed

1. Spread 0.8-1.2 lb./sq. ft. of Sikafloor®-3 QuartzTop Design almost immediately after the concrete has been leveled, in one application only, to allow the dry shake to hydrate. You should be applying 60% of the total amount of material per square foot by weight in this first lift. If a two lift system is specified, apply 60% in lift one and 40% in lift two. If three lifts, 60%, 30% and 10%.
2. Trim the edges where adjoining slabs are to be poured. Do this by using a square edge wood hand float to scrape 1/8-1/4 in. off the edges feathered back up to slab surface height. Note: Using Sikafloor®-3 QuartzTop Design causes the slab surface to become stiffer more quickly than typical.
3. Spray apply a single very fine mist coat of Sikafloor®-931 Finishing Aid at a rate of 600-1,000 sq.ft./gal. Consult the most current Sikafloor®-931 Finishing Aid Product Data Sheet for complete Application Instructions.
4. To achieve the final surface appearance, perform the final finishing in two perpendicular directions using walk-on or ride-on power trowels with finishing blades. If white or light colored dry shake is used, plastic pans and blades must be used.
5. If the base concrete does not provide sufficient moisture during the finishing process, apply another coat of Sikafloor®-931 Finishing Aid at a rate of 600-1,200 sq. ft./gal.
6. If a two-layered system is specified, apply a second lift comprised of the remaining 40% of Sikafloor®-3 QuartzTop Design. If a three-layered system is specified, apply a second lift of Sikafloor®-3 QuartzTop Design at 30% of the total volume per square foot by weight. Spray a fine mist of Sikafloor®-931 Finishing Aid at 600-1,200 sq.ft./gal. Power trowel the surface with trowel pans. If Sikafloor®-3 QuartzTop Design doesn't get enough moisture from the subbase, or there are difficulties closing the surface with the trowel pan, more Sikafloor®-931 Finishing Aid can be sprayed. Continue troweling with trowel pans until the surface is tight and flat.
7. If a three-layered system is specified, apply the final 10% of Sikafloor®-3 QuartzTop Design and spray a fine mist of Sikafloor®-931 Finishing Aid at 600-1,200 sq. ft./gal. Power trowel the surface with trowel pans. If Sikafloor®-3 QuartzTop Design doesn't get enough moisture from the subbase, or you have difficulty closing the surface with the trowel pan, more Sikafloor®-931 Finishing Aid can be sprayed. Continue troweling with trowel pans until the surface is tight and flat.

Manual Application

1. Avoid excessive application, which can cause ponding.
2. Hot Weather Concrete Placement: After the concrete pour, immediately before the bull float process, apply a single coat of Sikafloor®-931 Finishing Aid at a rate of 800-1,000 sq. ft./gal. Consult the most current Sikafloor®-931 Finishing Aid Product Data Sheet for complete application instructions.
3. "Normal" Weather Concrete Placement: Determine whether the concrete is ready for the dry-shake application process. The process can start once the concrete can be stepped on without leaving a footprint deeper than 0.1-0.2 in. Apply the first single fine mist of Sikafloor®-931 Finishing Aid at approximately 1,000-1,200 sq. ft./gal. using a low-pressure sprayer, just before opening the surface with trowel pans. Note: Compaction with the trowel can start as soon as the concrete supports the weight of the power trowels.
4. Evenly scatter the material onto the compacted and leveled concrete. Sikafloor®-3 QuartzTop Design is applied in either two stages 60%, then 40% of specified Sikafloor®-3 QuartzTop Design application volume by weight, or three stages - 60%, then 30%, then final 10% of specified Sikafloor®-3 QuartzTop Design application volume. The quantities used in each stage depend on the desired overall consumption and layer thickness. Note: Casting Sikafloor®-3 QuartzTop Design further than 6.6 ft. from the point of casting reduces the consistency of the spreading of the material. Apply Sikafloor®-3 QuartzTop Design without creating a ripple effect on the concrete surface.
5. Spray a fine mist of Sikafloor®-931 Finishing Aid at a rate of 1,000 sq. ft./gal. to the Sikafloor®-3 QuartzTop Design surface.
6. Work the first layer of Sikafloor®-3 QuartzTop Design into the slab using power trowels equipped with pans. Plastic pans must be used if a white or light colored dry shake is being applied.

7. Immediately scatter the next layer of the required material. 40% for a two layer system. 30% for a three layer system.
8. Spray a fine mist of Sikafloor®-931 Finishing Aid at a rate of 1,000-1,200 sq. ft./gal. to the Sikafloor®-3 QuartzTop Design surface.
9. Never add additional water to the surface where the dry shake has been applied. Use power trowels equipped with pans to work the second layer of Sikafloor®-3 QuartzTop Design into the slab.
10. Repeat steps 7-9 for a three-layer system applying 60% for layer one, 30% for layer two and 10% for layer three.
11. Spray a fine mist of Sikafloor®-931 Finishing Aid at a rate of 1,200-1,400q. ft./gal. to the concrete surface.
12. To achieve the final surface appearance, perform the final finishing in two perpendicular directions using walk-on or ride-on power trowels with finishing blades. If white or light colored dry shake is used, plastic pans and blades must be used.

CURING TREATMENT

For a conventional, non-polished dry shake floor, cure and seal the floor surface immediately after finishing with an application of SikaCem®-101 Cureseal H20 at 200 – 300 sq.ft./gal. For a higher quality, more consistent floor aesthetic, Sika UltraCure NCF wet curing blankets can be used for a minimum of 7 days. Other curing blankets may dry unevenly, resulting in inconsistent hydration and darker or lighter patches on the polished surface. Two coats of Sikafloor®-958 PG Finish may be used in place of SikaCem®-101 Cureseal H2O as an optional burnishable sealer following 7 day cure with curing blankets. Consult the most current Sika Product Data Sheets for complete application instructions.

For a ground and polished floor surface, use Sika UltraCure NCF wet curing blankets immediately after finishing for a minimum of 7 days before grinding and polishing. Other curing blankets may dry unevenly, resulting in inconsistent hydration and darker or lighter patches on the polished surface.

GRINDING AND POLISHING

Sikafloor® CreamPolish CS-31 and Sikafloor® TerrazzoEffect CS-32 systems: After the concrete has cured for a minimum of seven days, mechanically polish the surface using Concria FAST resin bonds wet polishing techniques to the required aggregate exposure and shine. Refer to Sikafloor® CreamPolish CS-31 and Sikafloor® TerrazzoEffect CS-32 system data sheets for grinding and polishing instructions.

SEALING

After polishing, seal the surface using two coats of Sikafloor®-958 PG and burnish to final appearance using a high speed floor machine equipped with final polish grit diamond pad.

JOINTS

After finishing all previously mentioned operations and completing saw cuts, clean off any residual saw lubricant or slurry immediately.

Fill joints with Sikaflex® PRO-3 or another appropriate Sikaflex® sealant in accordance with the floor design requirements. Consult the most current Sikaflex® Product Data Sheets for complete application instructions.

PROTECTION

After Sikafloor®-958 PG or SikaCem®-101 CureSeal H2O application, protect hardened surface by covering it with Sika Proguard Duracover protective covering.

CLEANING OF TOOLS

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

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- **KEEP CONTAINER TIGHTLY CLOSED**
- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **FOR PROFESSIONAL USE ONLY**

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: +1-800-933-7452
Fax: +1-201-933-6225
usa.sika.com