System Sheet
Edition 3.24.2010
Sikafloor® Decoflake UEF

Industrial Flooring

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Medium Duty Self-leveling Cementitious Urethane Slurry with Flake Broadcast System

Description

Decoflake UEF is comprised of a self-leveling, medium to heavy duty, solid colored, three component, cementitious urethane slurry, Sikafloor PurCem 22N, topped with Sikafloor 203 pigmented basecoat broadcast to refusal with vinyl flakes, sealed with two topcoats of Sikafloor 203, finished with Sikafloor 315, a high solids, abrasion resistant, aliphatic polyurethane coating. Decoflake UEF has an aesthetic, easy to clean, smooth surface. Systems are typically installed at 3⁄16 to 1⁄4 in. (4.5-6 mm) thickness.

Where to Use

- Typically used in pharmaceutical, biotech and research applications. Areas include: wet and dry process, laboratories, clean rooms, animal care and research, fine chemical scale-up and production. Also applied in dairies, breweries, wineries, distilleries, laboratories, chemical process plants, pulp and paper plants, warehouses and storage areas.

Advantages

- Resists a very wide range of organic and inorganic acids, alkalis, amines, salts and solvents. Refer to the Sikafloor Chemical Resistance Charts. Consult Sika Technical Service for additional information.
- Can be applied over partially cured concrete slabs (<10% moisture), full 28 day cure time is not necessary. Can be applied over concrete slabs with up to 15 pounds of water vapor transmission per 1,000 ft² per 24.
  hours when tested in accordance with ASTM F 1869.
- Minimal maintenance costs, superior life cycle cost advantage versus tile.
- Fast turnaround applications may utilize Sikafloor 510 Polyaspartic for basecoats and topcoats.

How to Use

Surface Preparation

Concrete Surfaces must be clean and sound. Remove all dust, dirt, existing paint films, efflorescence, exudates, laitance, forms oil, hydraulic or fuel oils, brake fluid, grease, fungus, mildew, biological residues or any other contaminants which may prohibit good bond. Prepare the surface by appropriate mechanical means, i.e., steel shotblasting or planetary grinding (CSP 3-6). The compressive strength of the concrete substrate should be at least 3,500 psi (24 MPa) at 28 days and a minimum of 250 psi (1.7 MPa) in tension at the time of application. Repairs to cementitious substrates, filling of blowholes, leveling of irregularities, etc. should be carried out using an appropriate Sika product. Contact Sika Technical Service for recommendations. **Edge Terminations** - All free edges of a Sikafloor PurCem floor, whether at the perimeter, along gutters or at drains require extra anchorage to distribute mechanical and thermal stresses. This is best achieved by forming or cutting grooves in the concrete. Grooves should have a depth and width of 2 times thickness of the PurCem floor. Refer to the edge details provided. If necessary, protect all free edges with mechanically attached metal strips. Never featheredge, always turn into an anchor groove. **Expansion Joints** - Should be provided in the substrates at the intersection of dissimilar materials. Isolate areas subject to thermal stresses, vibration movements or around load-bearing columns and at vessel sealing rings. Refer to details.

Typical Data (PurCem 22N Mortar Only)

Packaging	43.4 lbs/2.6 gal, (19.7 kg/9.9 L) unit: 1 jug (A), 1 jug (B) and 1 bag (C) Component A: Carton containing (4)* jugs Component B: Carton containing (4)* jugs Component C: 45 lb bag * Order one carton of Part A (4 Jugs per carton), one carton of Part B (4 jugs per carton) and 4 bags of Part C.
Colors	Four standard stock colors: Telegray 2 (RAL 7046) Oxide Red (3009) Agate Gray (RAL 7038) Beige (1001) Two standard, non-stocking colors that require lead time: Sky Blue (RAL 5015) Grass Green (RAL 6010) Custom colors subject to minimum order.
Yield	Approx. 22.5 ft² (2 m²)per unit at 3⁄16 in. (4.5 mm) Approx. 16.5 ft² (1.5 m²) per unit at 1⁄4 in. (6 mm) (These figures do not allow for surface porosity, profile or wastage)
Shelf Life	Components A+B: 1 year in original unopened packaging. Component C: 6 months in original unopened packaging. Store dry between 50°-77°F (10°-25°C). Protect from freezing.
Mixing Ratio	Components A:B:C = Mix full units only.
Properties at 73°F (23°C) and 50% R.H.	
Application Temperature	45°F min., 86°F max. (7°C min., 30°C max.)
Density (ASTM C-905)	16.11 lbs./gal. (1.93 kg/L)
Service Temperature	-40°F (-40°C) min. / 212°F (100°C) max.
Curing Time at 68°F (20°C) / 1⁄4 in. (6 mm)	

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Usable pot life	20-25 min.
Initial joint up time	25-30 min.
Cure to foot traffic	10-12 hrs.
Cure to light traffic	14-16 hrs.
Full Cure 5 days	
Compressive Strength (ASTM C-579)	24 hrs. 5218 psi (63.1 MPa)
	7 days 6569 psi (22.2 MPa)
	28 days 6839 psi (17.9 MPa)
Tensile Strength (ASTM C-307)	950 psi (6.5 MPa)
Flexural Strength (ASTM C-580)	2,100 psi (14.7 MPa)
Bond Strength (ASTM D-4541)	> 250 psi (1.75 MPa) (substrate failure)
Hardness, Shore D (ASTM D-2240)	80-85
Indentation MIL-PRF-24613	~ 0%
Impact Resistance (ASTM D-2794)	5.02 ft/lbf (6.81 joules) at 1⁄8 in. (3 mm) of thickness
Abrasion Resistance (ASTM D-4060)	
H-22/1000 cycles/1000 g	-2.26 g
CS-17/1000 cycles/1000 g	0.110 g
Coefficient of Friction (ASTM D-1894-61T)	0.8
Coefficient of Thermal Expansion (ASTM D-696)	0.89 x 10-5 in./in./ºF (1.6 x 10-5 mm/mm/ºC)
Water Absorption (ASTM C-413)	0.10%

System Coverage

Self-Leveling Mortar: 43.4 lbs/2.6 gal, (19.7 kg/9.9 L) unit: 1 jug (A), 1 jug (B) and 1 bag (C), 22.5 ft² (2 m²)per unit at 3⁄16 in. (4.5 mm) Broadcast to saturation with 100 – 150 lbs of 30 mesh silica sand aggregate per 100 sq.ft.

Body Coat: Sikafloor 203, 100 sq.ft./gal. Broadcast to saturation with pre-blended vinyl flake

Top Coat: Sikafloor 203, First coat at 100 - 150 sq.ft./gal., second coat at 150 - 200 sq.ft./gal.

Final Topcoat: Sikafloor 315 - 450 sq. ft./gal.

Cure Mechanism

Self Leveling Mortar: PurCem 22N, Curing Time at 68°F (20°C) / 1⁄4 in. (6 mm) Cure to foot traffic 10-12 hrs. Cure to light traffic 14-16 hrs.

Body Coat: Sikafloor 203; At 75°F (24°C), the body coat should be ready for foot traffic within 12 hours.

Top Coat: Sikafloor 203; At 75°F (24°C), allow 12 hours for foot traffic and 24 hours for light traffic. For heavy traffic and/or chemical spillages allow 72 hours.

Top Coat: Sikafloor 315; At 75°F (24°C), allow 8 hours for foot traffic and 24 hours for light traffic. For heavy traffic and/or chemical spillages allow 72 hours

Mixing

Self-Leveling Mortar: PurCem 22N: Mixing will be affected by temperature; condition materials for use to 60-70ºF (15-21ºC). Premix Components A and B separately, make sure all pigment is uniformly distributed. Start mixer; add Components A and B, blend for 30 seconds. Add Component C (powder) pouring slowly over a period of 15 seconds. DON'T DUMP! Allow Component C to further blend for 2 more minutes to ensure complete mixing and that all powders are wetted out. During the operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once (Components A+B+C) to ensure complete mixing. *Mix full units only.*

Body Coat/Topcoats: Sikafloor 203: (3-gallon unit) Carefully empty the contents of the Part "H" Hardener entirely into the can of Part "R" Resin. The Part "R" container is oversized to allow for easy mixing. (Bulk kits) For bulk packaging when not mixing full units each component must be pre-mixed separately to ensure product uniformity.

Color Additives: If color is desired, the appropriate Sikafloor Epoxy Color Additive is added to the "Color Base" Part "R" Resin at the rate of 1 quart per 3 mixed gallons for all colors except for white, yellow or bright red. These will require 2 quarts per batch. Refer to the Epoxy Color Add Data Sheet for specific ratios. Mix at low speed for a minimum of two minutes. Measure the correct volume of Part "R" and Part "H" into a clean pail, 2 Parts R to 1 Parts H by volume. Mix with a low speed jiffy mixer (300-450 rpm), until completely blended. This will take about 2 to 3 minutes. Be careful not to introduce any air bubbles while mixing. Make sure the contents are completely mixed to avoid any weak or partially cured spots in coating. During the mixing operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing. Mix only that quantity that can be used within its pot life.

Top Coat: Sikafloor 315: Do not mix more material than can be applied within the working time limits at the actual field temperature. Empty completely the Part H, into a clean mixing container large enough to accommodate the 1.5 or 4.5 gallon mix. Then with a Jiffy mix paddle and drill, add the Part R. Mix at low speed for 1 minute. Then add pint of color pack if required. Mix this for 2 minutes. Then slowly sift in the wear additive F-5/HG with the mixer running to avoid clumping. Mix for 2 minutes.

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Application

Self Leveling Broadcast Mortar: PurCem 22N: Mix and pour the Sikafloor PurCem 22N materials on the floor. Spread to the desired thickness using a screed rake or trowel. Take care to spread newly mixed materials across the transition of previous applied mixes before the surface begins to set. Immediately spike roll the surface to release trapped air in the matrix. Sikafloor PurCem 22N requires the wet surface to broadcast to rejection with 50 mesh silica aggregate. Aggregate must fall vertically to avoid surface defects / do not broadcast up to the transition line of new mixes, always broadcast 2-3 feet beyond the wet edge. Allow broadcast surface to cure sufficiently to be able to resist foot traffic without damaging the surface. Remove excess aggregate by sweeping or vacuuming until surface is free of all loose particles and dust.

Body Coat: Sikafloor 203, and Vinyl Flakes: Sikafloor 203 should be applied using a trowel or squeegee and backrolled. Apply at a rate of 100 sq.ft./gal. Apply Sikafloor 203 evenly to obtain uniform pattern. Broadcast vinyl flake into freshly applied Sikafloor 203 in a “rainfall pattern”. Broadcast Flake to excess. After the body coat has cured, sweep and vacuum excess flake

Topcoat: Sikafloor 225: Sikafloor 225 is applied by first pouring a bead of material in the form of a ribbon on the surface to be coated. The material should not be left in the container too long because it will set faster thus reducing the pot life. Using a notched squeegee, flat squeegee, or trowel spread the poured material at a rate of approximately 120 sq. ft. per gallon. Apply as evenly as possible, working from left to right, and then back. Back roll using a high quality 3/8” nap roller. Roll with a plastic loop roller after 5-10 minutes to remove excess bubbles. Back roll the Sikafloor 225 only to level the squeegee applied material; over-rolling will cause bubbling.

Final Topcoat: Sikafloor 315: The floor should be divided into sections that can be completed without stopping. Sections should be divided at expansion joints or doorways when possible. The end of a section should be taped off to form a straight line providing a clean edge for an adjacent section. The Sikafloor 315 must be applied with a 3/8” nap roller. The roller should be wet in a roller tray or bucket and then the excess coating is removed by lightly rolling in the tray or bucket screen so as to avoid drips. Then apply 3 pairs of 8-10 foot long paths on to the floor. Then spread the material with roller passes perpendicular to the paths of coating. This material may be aggressively rolled to even the thickness. It is extremely important to apply the coating at a rate of 3-3.5 mils to achieve proper appearance, texture, and color development. If areas are too thick, the coating may blister, if too thin, the coating will appear very flat in sheen. It is also very important to remix the material often with the roller in the tray to keep the F-5 aggregate from settling. Cross roll the entire area with straight uninterrupted passes across the entire width of the floor. This will reduce roller marks and make the color even. If appearance is still not uniform after a few of these passes, repeat this procedure.

Limitations

- Minimum/Maximum substrate temperature: 60°F/85°F (15.5°C/30°C).
- Maximum relative humidity: 85%.
- Substrate temperature must be 5°F (3°C) above measured dew point.
- Freshly applied Sikafloor products should be protected from dampness, condensation and water for at least 24 hr.
- Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions. UV resistant, light stable topcoats are available where ultimate color/clarity retention is required.
- This product is not designed for exterior use, immersion, or any use where moisture can reach the underside of the coating.
- Do not thin this product. Addition of thinners will slow down the cure and reduce the ultimate properties of this product.

Additional Info

Sikafloor System Sheets describe a series of Sikafloor products installed in progression. For specific information on the individual products mentioned, including, Mixing, Application, Chemical Warnings, First Aid, Handling & Storage, and Clean Up, PLEASE REFER TO THE INDIVIDUAL PRODUCT’S TECHNICAL DATA SHEET, available at www.sikafloorusa.com. System sheets are updated periodically. To ensure the most current version is being used, visit Technical Resources on www.sikafloorusa.com. Proper material application is the responsibility of the user. Site visits made by Sika personnel are for making technical recommendations only and not for supervising or providing quality control. Before applying for protection against specific chemical environments, consult Chemical Resistance Guide or Sika Technical Service.

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