



PRODUCT DATA SHEET

SikaCem[®]-171 T1000[®] Fine Overlay

Polymer-modified cementitious overlay formulated for resurfacing structurally sound, non-moving concrete floors, walls, and exterior hardscapes

PRODUCT DESCRIPTION

SikaCem[®]-171 T1000[®] Fine Overlay is a polymer-modified cementitious overlay formulated for resurfacing structurally sound, non-moving concrete floors, walls, and exterior hardscapes. Previously named T1000[®] Fine Overlay.

USES

- Residential or commercial projects, interior concrete floors, and exterior concrete hardscapes
- Driveways, sidewalks, patios, pedestrian ramps, walkways, building entrances, foyers, stairs, loading docks, parking structures, food courts, drive-thru lanes, crosswalks, pool decks and other concrete surfaces
- Ideal for restoring worn or color-blemished concrete, out-of-level surfaces, or correcting construction errors

CHARACTERISTICS / ADVANTAGES

- Mixes with water
- Excellent for broom finish repair
- May be used vertically or horizontally
- Can be integrally colored or stained
- Color packs available
- Over 5,000 psi at 21 days
- Freeze-thaw resistant when applied to a clean and sound concrete
- Creates an abrasion-resistant surface suitable for pedestrian and automobile traffic

PRODUCT INFORMATION

Chemical Base	Polymer Modified Cement
Packaging	55 lb. (24.9 kg) fill in paper bag
Appearance / Color	SikaCem [®] -171 T1000 [®] Fine Overlay is packaged in cement gray and cement white. These base colors may be colored with a SikaColor [®] -100 Color Pack. SikaColor [®] -100 Color Pack colors are formulated for use with SikaCem [®] -171 T1000 [®] Fine Overlay cement gray unless noted otherwise. Note: When SikaCem [®] -171 T1000 [®] Fine Overlay is mixed with a SikaColor [®] -100 Color Pack, the cured color will not be an exact match to concrete colored with SikaColor [®] -100 P or SikaColor [®] -200 Color Hardener.
Shelf Life	24 months in original unopened container
Storage Conditions	Store in original, unopened containers in dry storage.

APPLICATION INFORMATION

Coverage

Approximate coverage rates of one 55 lb. (24.9 kg) unit of SikaCem®-171 T1000® Fine Overlay are:

96 sq. ft. at 1/16 in. thick (8.9 sq. m at 1.6 mm thick)

48 sq. ft. at 1/8 in. thick (4.5 sq. m at 3.2 mm thick)

32 sq. ft. at 3/16 in. thick (3 sq. m at 4.8 mm thick)

Coverage will vary depending on the installation depth, substrate texture, application method, and finishing.

Ambient Air Temperature

Do not mix or install SikaCem®-171 T1000® Fine Overlay if ambient and substrate temperatures are not between 45-85°F (7.2-29.4°C) unless site conditions can be modified to correct for temperature extremes.

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

- SikaCem®-171 T1000® Fine Overlay is formulated for use over thoroughly clean, structurally sound, and non-moving concrete.
- New concrete must be fully cured before applying the product.
- SikaCem®-171 T1000® Fine Overlay shall not be installed in areas subject to steel wheel traffic, strong chemicals, periodic water immersion, or hydrostatic pressure.
- The cured overlay surface shall be sealed for easy cleaning, particularly on interior floors.
- Random cracks in the existing substrate may transfer through the cured overlay even if they are repaired before application. To minimize this, extend existing substrate control joints up through the overlay.

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

Cast a job site mock-up before the installation for approval of color and finish. Utilize all materials, tools, and techniques from the actual job in the mock-up. Consistent batching, pouring, finishing, curing, sealing,

and preparation techniques will ensure the uniformity of architectural concrete. Verify adequate wet and dry slip resistance. Maintenance requirements shall also be discussed.

SURFACE PREPARATION

Remove all potential bond breakers such as grease, oil, paints, sealants, drywall taping compounds, mastics, and other contaminants on the surface. New concrete must be fully cured and free from curing and sealing compounds, laitance, or dusting. Slick, hard-troweled floors must be opened and roughened. Random cracks must be repaired but may still transfer through the cured overlay.

Surface preparation may include high-pressure washing, grinding, scarifying, shot blasting, or sandblasting, depending on the removed residue type and surface profile required. New concrete must be fully cured and shall be prepared to meet a Concrete Surface Profile of CSP 3. Failure to remove all contamination that impedes the adhesion of SikaCem®-171 T1000® Fine Overlay will cause the topping to delaminate. Detergents or soaps shall not be used since they may leave a surface residue. Do not acid etch, as it may weaken the surface. Unsound concrete must be removed down to sound concrete.

Priming

Use of a primer with SikaCem®-171 T1000® Fine Overlay is recommended except in installations that require the use of adhesive backed stencils.

SikaCem®-170 Primer helps minimize blistering of the SikaCem®-171 T1000® Fine Overlay, which can be caused by outgassing from a porous sub-slab. The use of SikaCem®-170 Primer also extends the working time of SikaCem®-171 T1000® Fine Overlay and provides added durability.

SikaCem®-171 T1000® Fine Overlay may be applied up to 24 hours after primer application. Do not expose the primed surface to moisture or contamination. After 24

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hours, or if the primed surface is exposed to moisture or becomes dirty, the primer must be reapplied. Consult the most current SikaCem®-170 Primer local Product Data Sheet for complete Application Instructions.

MIXING

Before mixing, store all materials in a shaded or cool environment. Chilling the water is advisable during hot weather. Use 4.4 qt. potable water per 55 lb. (4.2 L/24.9 kg) bag of SikaCem®-171 T1000® Fine Overlay. When temperature or humidity affects water demand, make small adjustments to the amount of mixing water as needed to achieve proper working consistency. Do not over-water. For vertical applications, slightly less water shall be used so that SikaCem®-171 T1000® Fine Overlay does not run or sag before drying. Determine the mix ratio before the installation starts. Temperature, humidity, method of application, vertical or horizontal surface, and finished texture will affect the amount of mix water. Measure the water accurately and consistently from batch to batch. Color and finished texture will vary if water is not consistently measured for each batch.

Always add water to the container first. Then, if color is to be used, add the SikaColor®-100 Color Pack while mixing, using a 600 rpm drill and a paddle or mortar mixer, followed by the SikaCem®-171 T1000® Fine Overlay. Do not introduce air bubbles into the mixture by excessive high-speed mixing.

Continue mixing for at least 3 minutes until a smooth, uniform, lump-free consistency and a streak-free color are achieved. Utilize a drill and a mixing paddle capable of mixing a mortar-like material. Do not mix by hand. If the mixture loses its plasticity, do not retemper with water or add previously mixed material to new batches. For larger installations, a paddle mortar mixer can be used. Do not use a concrete mixer. Do not mix more material than can be correctly applied within 20-30 minutes at 70°F (21.1°C). Keep mixing the pail free of dried buildup. Change or clean the mixing pail frequently to avoid pouring hardened lumps onto the substrate or into the hopper gun reservoir.

APPLICATION

Mark the locations of all working joints in the concrete substrate to saw-cut joints in the overlay exactly over those existing joints. The overlay joints must be full-depth and as wide as the existing substrate joints. Existing substrate joints shall be filled with SikaCem®-171 T1000® Fine Overlay and achieve initial set before applying the overlay. This will prevent the existing joints from creating a shadow in the cured material. This same technique may be used with non-moving random cracks.

All repair and patching compounds must be fully cured before applying SikaCem®-171 T1000® Fine Overlay and, if used, SikaCem®-170 Primer. Install freshly mixed

SikaCem®-171 T1000® Fine Overlay with a hopper gun or by trowel over a properly prepared concrete substrate. When used, allow SikaCem®-170 Primer to dry to the tack-free stage before installing SikaCem®-171 T1000® Fine Overlay. Maximum applied thickness is 3/16 in. (4.8 mm) in a single application. For thicker applications, allow the material to dry for 3-4 hours after placement at 70°F (21.1°C), and then apply a second layer. Place additional layers in the same manner, before the underlying layer dries completely, for the best adhesion.

During hot, windy, or low-humidity conditions, and when no primer will be used, the concrete surface shall be moistened with clean water. Up to 24 hours before the start of the installation, wet the concrete sufficiently and allow it to become saturated surface dry (SSD) before applying SikaCem®-171 T1000® Fine Overlay. This process will cool the substrate and minimize excessive moisture loss from the overlay, which would affect its placement and durability. Do not apply water to the concrete surface before or after applying SikaCem®-170 Primer. Do not apply water until patching and repair compounds have cured completely. Do not apply SikaCem®-171 T1000® Fine Overlay over standing or visible moisture on the slab surface, low spots, or existing joints or cracks.

Additionally, during hot, windy weather, an evaporation retardant may be applied to the SikaCem®-171 T1000® Fine Overlay surface to reduce moisture loss, which can cause shrinkage cracking and make the surface difficult to finish. The evaporation retardant can be directly sprayed onto the overlay. Read the manufacturer's instructions thoroughly before using this product. Always maintain a wet edge during application. Terminate pours at existing joint lines, walls, or other fixed objects. If a pour is terminated in the center of the floor or at a doorway between rooms, for example, delineate the stopping point with a taped line. Only use blue painter's tape. Pour and distribute SikaCem®-171 T1000® Fine Overlay, just overlapping the tape, but not completely covering the tape. Remove the tape as soon as the overlay has achieved initial set, before it has dried. This will leave a straight cold joint for the start of the next pour.

Trowel Application

Once material is thoroughly mixed, immediately pour SikaCem®-171 T1000® Fine Overlay from the mixing pail onto the concrete surface. A pool trowel or fresno may be used to distribute and finish the product. Similarly, a squeegee can be used to distribute the overlay before finishing with a pool trowel. Keep tools free of buildup by cleaning frequently with water before the SikaCem®-171 T1000® Fine Overlay dries completely. Apply material at a consistent thickness to minimize random shrinkage cracking.

Do not overwork the surface or attempt to eliminate all trowel marks. If trowel marks are a concern, use a

broom, sponge float, or swirl finishes to hide trowel lines and create slip resistance. As the surface dries, it will become tacky, and trowelling is not advisable. Wiping the trowel blade with the evaporation retardant may eliminate tool drag. If the surface finish of the overlay is not satisfactory, scrape and remove the problem area before it dries, then reapply the overlay.

Note: The reapplied material may be visually different from the surrounding surfaces.

Hopper Gun Application

This method of application is suitable for horizontal and vertical surfaces. It is beneficial when a splatter with a knock-down finish is desired for slip resistance on pool decks or similar environments.

The amount of mixing water used shall be adjusted for vertical applications to create the desired consistency for finishing and to allow for application through a hopper gun.

The hopper gun shall be in good working order and periodically cleaned with water during the application. Do not allow material to set up in the hopper gun. Orifice size may vary depending on mix consistency. A large orifice is used for splatter or rough finishes, and when the overlay material is mixed to a thick consistency. A smaller orifice is used for smoother finishes, and when the overlay material is mixed to a wetter consistency. Determine mix consistency and orifice size before the installation starts.

Deliver the overlay product with a maximum pressure of 30 psi (0.21 MPa). Higher pressure/air volume could prematurely dry the overlay, leading to a rough appearance and loss of adhesion. Use a compressor that delivers oil-free air. Attach a ball valve to the hopper gun so that air pressure can be easily and quickly adjusted at the point of application.

Do not exceed the maximum allowable thickness for SikaCem®-171 T1000® Fine Overlay. Achieve thicker installations with multiple applications. Immediately after application, SikaCem®-171 T1000® Fine Overlay can receive a knock-down finish or be left with the coarse texture created by the hopper gun delivery. Finishing time will vary with temperature, wind, humidity, and the use of a primer or an evaporation retarder. Do not mix or apply more material than can be handled effectively for the installation.

Stencil Application

A variety of stone and brick patterns can be created on existing concrete surfaces by using stencils and SikaCem®-171 T1000® Fine Overlay. The stencil and overlay system can be used on horizontal and vertical surfaces. If a mortar joint color other than the existing concrete color is desired, a base coat of SikaCem®-171 T1000® Fine Overlay mixed with a SikaColor®-100 Color

Pack can be applied before placing the stencil.

A base coat of SikaCem®-171 T1000® Fine Overlay can be applied by trowel or with a hopper gun. The base coat shall be applied as thin as possible to achieve consistent coverage over the substrate. Once applied, allow the base coat to cure sufficiently so that it may be walked on without marring when placing the stencil. Cure time is 4-8 hours, depending on temperature, wind, humidity, and applied thickness.

After the stencil is placed, a top coat of SikaCem®-171 T1000® Fine Overlay is applied with a hopper gun. Finish and texture the overlay immediately after application. Remove the stencil after the overlay has reached the initial set, so that SikaCem®-171 T1000® Fine Overlay will not be marred or damaged. The timing for stencil removal will vary with temperature, wind, humidity, and applied thickness. Never leave a stencil on the surface overnight.

Curing

During hot weather or windy conditions, fog misting, curing paper (conforming to ASTM C171-20 - Standard Specification for Sheet Materials for Curing Concrete), or polyethylene sheets may be used to minimize plastic shrinkage cracking. The curing method may affect the final color of SikaCem®-171 T1000® Fine Overlay. Verify curing method and timing with a mock-up. Once the curing method has been determined, it shall be utilized consistently throughout the installation. Curing time varies with ambient and substrate temperatures and humidity. The surface can be walked on gently approximately 4 hours after placement at 70°F (21.1°C). Cure for a minimum of 72 hours before opening the surface to automobile traffic. A complete 28-day cure is required before heavy traffic or exposure to freeze-thaw cycling.

Control Joints

Saw cutting of control joints directly over the existing control joints in the concrete substrate shall be completed within 12 hours after installation, once the surface has gained adequate strength so as not to be damaged by the saw-cutting process. Cool ambient and surface temperatures may delay sawing.

STAINING

For natural appearing color variations, SikaCem®-171 T1000® Fine Overlay can be colored with SikaColor®-430 Elements® or SikaColor®-420 Chemstain®. Consult the most current SikaColor®-430 Elements® and SikaColor®-420 Chemstain® local Product Data Sheets for complete Application Instructions.

SEALING

Use SikaCem® solvent-based or SikaCem® water-based sealers for exterior applications. Use SikaCem® water-

based sealers for interior applications. Consult the most current SikaCem® sealer local Product Data Sheets for complete Application Instructions.

MAINTENANCE

Repair

Damage to the overlay surface shall be repaired with SikaCem®-171 T1000® Fine Overlay. Once the cause of the damage has been determined and corrected, the deteriorated areas shall be cut and chipped to the minimum applied depth of the product, 1/16 in. (1.6 mm). If damage to the underlying concrete exceeds the maximum allowable thickness of SikaCem®-171 T1000® Fine Overlay, 3/16 in. (4.8 mm), use a suitable patching compound to repair the concrete, before the application of SikaCem®-171 T1000® Fine Overlay or apply SikaCem®-171 T1000® Fine Overlay in multiple applications, not exceeding 3/16 in. (4.8 mm) in a single application.

The repair cavity shall be chipped to a uniform depth to minimize random shrinkage cracking in the repair materials. The perimeter of the repair cavity shall be saw cut or chipped out to prevent feather edging of the patching compound. All dust and contamination shall be removed before application of the patching compound or SikaCem®-171 T1000® Fine Overlay. The repaired area may appear differently than adjacent surfaces. Repair materials and methods shall be evaluated and confirmed with a repair mock-up.

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

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates (“SIKA”), the user must always read and follow the warnings and instructions on the product’s most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA’s Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product’s shelf life. User determines suitability of product for intended use and assumes all risks. User’s and/or buyer’s sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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