

CAUTION: When applying stains or dyes, wear proper safety gear including non-absorbent gloves, eye protection, and an OSHA-approved respirator. When using acid stain or solvent-based products, make sure the area is sufficiently ventilated by opening windows or using fans to achieve air movement. Make absolutely certain no source of open flame is present. Pilot lights, heaters, cigarettes and electric tools should not be used or should be turned off during application until no fumes exist.

Sealing: Terra Fresco microtopped surfaces should be sealed or coated to protect and preserve the final surface. Determine beforehand the type of system to be used. Considerations include the type of traffic the microtopped surface will be subject to, the location (interior or exterior), dry times, desired gloss level, sealer composition (water-based vs. solvent-based), and the skill level of the applicator. Kemiko's Terra Fresco has been formulated to accept Kemiko's full line of decorative and industrial products. Regardless of the type of sealer system used, check the corresponding technical data sheets for additional application information and coverage rates.

Water-based sealers can be applied to Terra Fresco within 24 hours after installation. Additional cure time is necessary when using solvent-based products (typically a minimum of 48 hours). If applying a thick-build coating to Terra Fresco, allow a minimum of 48 hours to elapse before application. When using solvent-based sealers, apply them lightly with a spray unit that atomizes the sealer. If thinning the sealer, be sure to use a thinning agent that promotes quick drying of the sealer, since prolonged setting of the sealer can soften the micro-topping.

Maintenance: The maintenance program for microtopped surfaces may vary depending on the type of sealer/coating system used and the amount traffic the surface is subject to. Daily dust mopping and frequent damp mopping using a neutral cleaning agent to keep grime off of the surface will dramatically increase the life of the floor. Mop-down floor finishes can also be applied periodically to the sealed micro-topping to help preserve the surface.

Warranty: The following warranty is made in lieu of all other warranties, either expressed or implied. This product is manufactured of selected raw materials by skilled technicians. Neither seller

nor manufacturer has any knowledge or control concerning the purchaser's use of this product and no warranty is made as to the results of any use. The only obligation of either seller or manufacturer shall be to replace any quantity of this product proven to be defective. Any claim of defective product must be received in writing within 1 year from date of shipment. Neither seller nor manufacturer assumes any liability for injury, loss, or damage resulting from use of this product.

Health Precautions: Adequate ventilation is required. Avoid contact with eyes and skin. Avoid inhaling the airborne spray mist, and wear proper eye protection and an OSHA-approved respirator. In case of skin contact, flush with plenty of water; for eyes, immediately flush with water for 15 minutes and get medical attention. If swallowed, CALL A PHYSICIAN IMMEDIATELY. DO NOT induce vomiting.
KEEP OUT OF REACH OF CHILDREN



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Kemiko's Terra Fresco

Product Guide

Terra Fresco Micro-topping is a high-performance cementitious topping that can be integrally colored with Kemiko's Terra Fresco Color Paks, acid stained or dyed. Terra Fresco is formulated to accept Kemiko's full line of decorative and industrial products. Terra Fresco can transform worn and distressed concrete into a brand new, durable surface. When installed per these technical guidelines Terra Fresco Micro-topping will provide a long-wearing architecturally pleasing surface.

Features and Benefits:

- ◆ Exterior and interior applications
- ◆ Can be a single-build or multilayered application
- ◆ Creates an extremely durable wear surface
- ◆ Excellent flexural properties
- ◆ Increased abrasion-resistance
- ◆ Low in volatile organic compounds (VOCs)
- ◆ Low in odor
- ◆ Easy application
- ◆ Quick turnaround time
- ◆ Excellent for staining and dyeing
- ◆ Unique integral coloring system

Product Use: Kemiko's Terra Fresco is available in regular and fine versions for both of the color bases. This product has been designed for both exterior and interior substrates and will create a very durable and abrasion-resistant surface when applied properly. Terra Fresco can be used on exterior driveways, pool decks, sidewalks, patios, stair risers and treads, and even vertical walls when substrates are prepared properly. In addition, Terra Fresco can be used in interior environments when a clean canvas is desired to create one-of-a-kind colored decorative floors. With the use of Terra Fresco Color Paks, Terra Fresco Micro-topping can produce beautiful integrally colored floors. A wide variety of textures are also possible.

Performance: When combined with appropriate coatings or sealers, Terra Fresco will provide a long-wearing surface in environments such as hotels, restaurants, and a host of other residential & commercial applications. Terra Fresco has excellent moisture and freeze-thaw resistance. Because of the unique formula, it also offers a reduction in brittleness and outstanding impact resistance, with excellent flexural and tensile strength properties.

Limitations: In order for the Terra Fresco Liquid (TFL-1100) to penetrate and bond properly and for the micro-topping to adhere to its full potential, the concrete surface must be lightly profiled and clean and free of any surface contaminants. Fill and repair all cracks, chips, spalls and voids prior to the application of Terra Fresco Micro-topping. Consult Kemiko for advice on suitable repair materials. Typically, Terra Fresco is applied in 1/16-inch lifts. If thicker builds are required, successive lifts may be applied as long as the previous application is dry enough to prevent marring of the surface during application. Under no circumstance should applications exceed a thickness of 1/16 inch per coat since shrinkage cracking could occur. Kemiko's Terra Fresco Micro-topping should not be applied at temperatures below 45° F or exceeding 90° F. Optimum application temperatures are between 65-75° F. Avoid applying Terra Fresco Micro-topping in a dry, windy environment since rapid drying can occur. Keep water or condensation off of the freshly curing micro-topping for a minimum of 24 hours from the time the product is installed to prevent discoloring and softening. If acid staining or solvent-based dyes will be used, it is best to let the micro-topping cure for a minimum of 48 hours after installation. Water-based dyes can be applied 12 hours after micro-topping installation. On exterior applications, if sanding is required between coats to minimize trowel lines or imperfections, it is recommended to prime in between coats. On inte-



rior applications, if a coat of Terra Fresco Fine is going to be applied on top of the regular version, it is not necessary to prime in between coats.

NOTE: Kemiko's Terra Fresco Micro-topping has been formulated for use over structurally sound and properly prepared concrete substrates. Each substrate needs to be evaluated independently since some surfaces are not suitable for the application of micro-toppings. Some gypsum-based products, lightweight concrete and concrete that is not fully cured for a minimum of 30 days should not be considered for the application of Terra Fresco.

Product Availability: Kemiko's Terra Fresco Micro-topping is marketed and sold nationwide as well as internationally to the end-user through a broad network of dealers and representatives. Contact Kemiko to locate the nearest distributor and representative.

Packaging: Terra Fresco Micro-topping is available in 30-pound bags in both white and gray regular and in 22-pound bags for both white and gray fine.

Shelf Life: While there is no established shelf life with Terra Fresco Powder and TFL-1100, storage environment plays a pivotal role in long-term viability of this product. Terra Fresco Powder should be stored in a climate-controlled, moisture-free environment. TFL-1100 should be protected from temperature extremes, freezing, and should be tightly sealed when not in use. Inventory should be rotated on a regular basis.

Coverage Rates: The coverage rate for Terra Fresco can vary depending on the profile of the concrete substrate, the application

techniques and the tools used. Generally, one 30-pound bag of Terra Fresco Regular will cover approximately 180 to 200 square feet when hand troweled or applied with a Magic Trowel[®], depending on the fluidity of the mix. For Terra Fresco Fine, one 22-pound bag will cover approximately 190 square feet. Once the material has been mixed, it is crucial to install it as quickly as possible to minimize the amount of time the material sits in the bucket. If retempering is necessary, normally Terra Fresco will become fluid by simply remixing. If texturing techniques are being used, such as customized rollers, stone textures or hopper gun applications, coverage rates will vary dramatically depending on the texture.

Available Colors: Kemiko’s Terra Fresco Color Paks are offered in 12 standard colors. With prior notification, custom colors can be achieved. (An additional charge and a longer manufacturing time are required for this service.) Terra Fresco Color Paks are pre-weighed and packaged to color one bag of Terra Fresco Micro-topping, eliminating the need for jobsite weighing or measuring. Simply add one pigment Pak to the premeasured TFL-1100 liquid.

Jobsite Test Samples: Achieving successful micro-topping applications requires skill and practice. Many variables can influence the performance and workability of Terra Fresco Micro-topping, such as concrete surface preparation, ambient, substrate, and product temperatures. Performing a representative jobsite mockup will give you valuable information about coverage rates, ease of application, and the best type of finishing tool to use to install the mixed material. Also, by performing a test section, you can determine the desired color when using stains, dyes or Terra Fresco Color Paks, as well as the preferred sealer system to use. The representative sample should always be inspected by the owner or owner’s agent for approval.

Mixing and Application Equipment: Kemiko’s Terra Fresco can be installed using a variety of different tools and equipment. For mixing, it is important to use a low- or variable-speed industrial-type drill with a 1/2-inch drill chuck. (High-speed drills can splash the material out of the bucket.) Also, the type of mixing paddle is important. Use a paddle typically used for grouts and thin sets with a shape that permits it to get down into the bottom perimeter of the bucket and shear the material during mixing. A variety of finishing tools can be used to apply Kemiko’s Terra Fresco, including wide-bladed or flexi-

ble rubber floor squeegees, concrete finishing steel trowels (either square or rounded), Magic Trowel[®], professional spray units, and different texturing tools such as custom rollers and horsehair brooms.

Substrate Preparation: The key to a successful Terra Fresco Micro-topping installation is to properly prepare the substrate. All concrete masonry or other surfaces shall be free of dirt, contaminants, paint or other foreign matter. New concrete must be a minimum of 30 days old. Remove any oil and grease stains (by extracting with a suitable poultice paste) and then degrease. Fill and repair all chips, spalls, gouges and cracks prior to the application of TFL-1100. Consult Kemiko for advice on suitable repair materials.

Jobsite test sections should always be performed to check the substrate for penetration and coverage rates. Lightly profile the surface of the concrete to the equivalent of 180-grit sandpaper. There are many methods of obtaining concrete surface profiles, including sanding, dustless grinding or shot blasting. The concrete surface profile (CSP) should be between 1 and 3 depending on the porosity of the concrete substrate, per International Concrete Repair Institute (ICRI) Technical Guideline No. 03732, “Selecting and Specifying Concrete Surface Preparation for Coatings, Sealers, and Polymer Overlays”. All surfaces shall be primed with undiluted TFL-1100. Apply the primer to a properly prepared substrate using a lint-free, ¼- to 3/8-inch nap roller. TFL-1100 can also be spray applied immediately followed by back rolling or brooming. It is important that no standing puddles remain on the surface. On highly absorbent surfaces or if the substrate is exceptionally warm, pre-wetting the surface may be required to obtain a saturated surface dry (SSD) condition. When there is no visible standing water, you can then apply TFL-1100. Dry times can vary dramatically depending on ambient and substrate temperatures. At 70° F, the normal dry time for TFL-1100 is 2 to 3 hours. Once the primer is tack-free and has cured to a clear film that no longer has a milky appearance, apply Kemiko’s Terra Fresco Micro-topping to the primed surface within 2 to 8 hours. It is important to keep the substrate clean and free of any debris during the micro-topping installation. If more than 8 hours elapses after primer application and before Terra Fresco is applied, the substrate must be re-cleaned and another coat of TFL-1100 needs to be reapplied at an application rate of 350 to 450 square feet per gallon.

Jobsite Considerations: All surrounding areas adjacent to the concrete substrate should be masked off and protected to prevent TFL-1100 and Terra Fresco Micro-topping from getting on walls, baseboards, or other finished surfaces. Fill low-lying areas, divots and voids with a suitable repair mortar prior to the application of the primer and micro-topping. Plug any existing floor drains so that the liquid material does not leach into open areas. The work area should be roped off so other trades and equipment don’t contaminate the properly prepared substrate. On interior applications, the building should be climate-controlled with no open windows or skylights. On exterior applications, it is important to apply the primer on a calm day with little wind and no chance of rain. In warmer weather, store TFL-1100 in a cool environment to eliminate accelerated drying times.

Mixing: When setting up the mixing station for Kemiko’s Terra Fresco, mask off all surrounding areas accordingly to prevent the liquid additive from contaminating these surfaces in the unlikely event of splashes or spills. Always add the liquid to a clean metal bucket. Avoid using plastic buckets for mixing, since the abrasion of the drill paddle hitting the side of can create plastic shavings that will get dispensed into the mix. The mix ratio for TFL-1100 ranges from 1 gallon to 1 gallon 16 ounces (maximum) of liquid per bag of Terra Fresco Regular or Terra Fresco Fine, depending on the desired consistency. Once the desired amount of liquid has been added to a clean pail, Terra Fresco powder can then be added. If Terra Fresco Color Paks are to be used as an integral coloring system, remove and discard the outer bag and toss the dissolvable inner bag containing the pigment into the measured bucket of TFL-1100 and mix for 1 minute to allow the disintegrating bag to fully dissolve. Add approximately one-half bag of Terra Fresco Powder and mix for approximately 30 seconds. Place the remaining powder into the bucket and mix thoroughly for an additional 2 minutes. It is important to clean the sides of the bucket with a spatula or margin trowel, making sure no dry residual material builds up on the sides of the bucket. Once you have determined the optimum mix ratio of liquid additive to powder, it is important to maintain this mix design throughout the entire pour to ensure consistency.

NOTE: Read the “Mixing and Application Equipment” section for guidance on the ap-

propriate tools to use when mixing the micro-topping components

Installation, Surface Finishing and Texturing Techniques: Optimum temperatures for installing Kemiko’s Terra Fresco range from 65-75° F. The minimum temperature for application is 45° F and the maximum temperature is 90° F. Avoid applying Terra Fresco Micro-topping in dry, windy environments since rapid drying can occur. Mix appropriate quantities based on the area to be covered, taking into consideration the number of skilled applicators. Do not dump full mixed buckets of material onto the concrete surface, to avoid having to spread the material long distances. When applied at a thickness of 1/16 inch or less, Terra Fresco has excellent coverage properties. Apply each bucket as quickly as possible to minimize the time the mixed material sits in the bucket. Since timing is crucial, when approximately half of the first bucket has been placed, mixing of the second bucket should begin to maintain a seamless installation and reduce the chance for cold joints.

Kemiko’s Terra Fresco can be applied using a variety of tools and techniques. The most common way to apply the micro-topping is with a concrete finishing hand trowel or a rubber squeegee or Magic Trowel[®]. Terra Fresco’s unique formula allows for a one-build application. However, if excessive trowel lines are left behind as a result of the first application, sanding of the surface using an 80-100 grit sanding screen may be required. Wait approximately 3 to 6 hours after micro-topping application before sanding. A second application of Terra Fresco Fine can then be applied to create a smooth surface. If more than 6 hours transpires between coats, either apply a thin coat of TFL-1100 or obtain a saturated surface dry (SSD) condition by pre-wetting the surface. Terra Fresco’s unique formula allows for retroweling if a smooth burnished appearance is desired. Timing of the second troweling is crucial. Retroweling can start as soon as 10 minutes and up to 1 hour after the initial application, depending on the desired effect and jobsite temperatures. If retroweling early, wear spiked (elevated) knee boards, making sure to trowel the voids left from the spikes. If troweling later, clean foam knee boards can be used.

A variety of texturing techniques can be used when applying multiple builds of Kemiko’s Terra Fresco. All techniques shall be perfected on jobsite test samples, and under no circumstance should the actual project be

used as a testing ground. Existing cracks (even when repaired) and contraction joints can sometimes telegraph through the micro-topping. If this is the case, the application of additional coats may be required. For the best results, after the application of Terra Fresco, recut all contraction joints the full depth of the micro-topping into the underlying joint. On large commercial applications, map out starting and stopping points using existing joints as termination points.

Opening to Traffic: Under normal temperature conditions (50 -80°F), Terra Fresco can be opened to light pedestrian traffic within 24 to 36 hours. For vehicular traffic, Terra Fresco should cure for 5 to 7 days.

Sawcutting: Decorative sawcutting or full-depth cuts for expansion and contraction joints can typically be done roughly 12 hours after the final application of Kemiko’s Terra Fresco, depending on jobsite conditions. If the edges of the sawcuts start to ravel or chip, this usually indicates that the micro-topping has not cured enough and is still too soft. In this case, additional curing time may be necessary. When cutting decorative designs or patterns, keep the surface as clean as possible, and cover footwear with slip-on booties to prevent scuffing of the micro-topping. Avoid using blue or red chalk for drawing designs, since these colors can permanently stain the surface. Orange or white chalk is best. Creating decorative designs with sawcutting requires skill and practice. Make sure you are confident with the equipment you are using and stay focused while making sawcuts. If an overcut or mistake occurs, Terra Fresco Micro-topping in the same color as the original application can be used to make the necessary repair. Approximately 2 to 4 hours later, sand the repaired section using an orbital hand sander with 80-100 grit sandpaper.

Staining / Dyeing: Different types of stains (either water-based acrylics or reactive acid stains) and dyes (water-based and solvent-based) can be used to color Terra Fresco installations. Each requires skill and practice to achieve the desired effects. Typically, if using an acid stain or solvent-based dye, Terra Fresco Micro-topping should cure a minimum of 48 hours to prevent softening of the material. Water-based dye and water-based acrylic stains can be applied approximately 12 to 24 hours after the application of Terra Fresco. Check stain/dye technical data sheets for more information on application techniques and coverage rates.

If using **acid stain**, presand the Terra Fresco Micro-topping using 80-100 grit sanding screens attached to the bottom of a slow-speed (175 rpm) swing buffer roughly 6 to 12 hours after the application of Terra Fresco. After the micro-topping has cured approximately 48 hours, lightly mist the surface with water prior to the acid stain application to reduce brush or spray marks. When applying acid stain, it is best to use a spray-broom-spray method. If you only spray the acid stain without brooming and then respray the stain, a spotted look can occur. Dilution of the acid stain can vary when used on micro-toppings. Usually it is best to start with a dilution of roughly 2 to 3 parts water to 1 part stain. Normally, two coats of stain are used depending on the desired color. Once all the acid stain has been applied, it is important to use a neutral cleaning agent, such as Kemiko’s Neutra Clean, to clean all residue from the surface.

If using **solvent-based dye**, the best method of application is by spray. (Brush applying can leave brush strokes due to rapid drying.) The sprayer should be manufactured specifically for spraying solvents. Make sure the sprayer is fully pressurized, so as to atomize the dye. Do not puddle the dye during application. High-volume low-pressure (HVLP) sprayers can be used to apply dye. Make sure surrounding areas have been properly masked off and protected to prevent overspray. If using **water-based dye**, many different application techniques can be used. On large applications, it is best to spray apply water-based dye and then massage the dye in using a microfiber pad. Because water-based dyes do not dry as quickly as solvent-based dyes, they are ideal for brush applying as well as different faux finishing techniques such as ragging, sponging and marbleizing by blending colors together. There is no need to neutralize either solvent-based or water-based dyes after application. However, it is a good idea to lightly clean any residual dye from the surface by completely ringing out the water from a mop and gently swabbing the surface. Scrubbing is not necessary.

If using **water-based acrylic stain**, presand Kemiko’s Terra Fresco Micro-topping, as instructed for the application of acid stains. Many of the same techniques and application methods used for water-based dye can be used for acrylic stains. There is no need to clean and neutralize a water-based acrylic stain after application. The next step is to seal the micro-topping with a compatible sealer.