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Cantera™ Vertical Wall Mix

Technical Data Sheet CVWM-01

FOR PROFESSIONAL USE ONLY. Read all applicable and current product information for your project: Technical Data Sheet (TDS), Color Chart, Installation Guide, Material Safety Data Sheet (MSDS). All information is available for download online at www.butterfieldcolor.com

MasterFormat™ Guide Specifications, and Butterfield Color® Architectural Details and Specifications are available for the specifier/designer. All information is available for download online at www.butterfieldcolor.com

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1. Description: Cantera™ Vertical Wall Mix is a polymer modified, cementitious overlay formulated for resurfacing structurally sound, non-moving vertical surfaces including concrete, drywall, cement board, plywood and masonry. It is a lightweight and sag resistant material, which can be applied to interior or exterior surfaces. Cantera™ Vertical Wall Mix provides a workable consistency suitable for stamping with Butterfield Color® Vertical Stamping Tools or creatively carving or sculpting by hand. Once cured, Cantera™ Vertical Wall Mix creates a durable and natural looking stone finish that is weather and freeze/thaw resistant.

Cantera™ Vertical Wall Mix is a precise blend of graded aggregate, cement, and polymer, which allow for thin to moderately thick applications. It is a pre-packaged material that is mixed on the job site with clean, potable water. Application thickness ranges from 3/4 inch (19 mm) minimum, to a maximum of 2 inches (51 mm) in a single application.

Cantera™ Vertical Wall Mix is packaged in medium gray. Cantera™ Vertical Wall Mix may be colored with a Uni-Mix® Color Pack. 24 colors are available. Refer to the Uni-Mix® Integral Concrete Colorant color chart for available colors. Note: When Cantera™ Vertical Wall Mix is mixed with a Uni-Mix® Color Pack, the cured color will not be an exact match to concrete colored with the same integral color. After curing, Cantera™ Vertical Wall Mix may be topically stained by applying Perma-Cast® Sierra Stain™, Elements™ Transparent Concrete Stain, or a combination of these stain products. Read the Perma-Cast® Sierra Stain™ and Elements™ Transparent Concrete Stain Technical Data Sheets before installing product.

2. Limitations: Cantera™ Vertical Wall Mix is formulated for use over thoroughly clean, structurally sound, and non-moving substrates. Surface preparation is required. New concrete must be fully cured and free from form release, laitance, coatings, grease, dirt, or any other contamination that would impede adhesion, before applying the product. Application to drywall, plywood, and cement board will require fiberglass mesh tape over

the joints and at corners to prevent reflective cracking. Install a wire mesh over drywall before applying Cantera™ Vertical Wall Mix. Maximum applied thickness is 2 inches (51 mm) in a single application. Do not install product if ambient and substrate temperatures are not between 45° F (7° C) and 85° F (30° C), unless site conditions can be modified to correct for temperature extremes. Do not apply to wet or frozen substrates.

Do not install Cantera™ Vertical Wall Mix in areas subjected to foot or vehicular traffic, strong chemicals, or hydrostatic pressure. Do not use Cantera™ Vertical Wall as a waterproofing material. Extend existing substrate control joints up through the overlay to minimize random cracks in the overlay. Random cracks in the substrate, if not properly repaired, may transfer through the cured overlay.

3. Cautions: Harmful if inhaled. This product contains silica (crystalline quartz) and Portland cement. Do not breathe dust. Prolonged exposure can result in Silicosis. Use with adequate ventilation. Portland cement may cause alkali burns. Irritating to eyes and skin. Wear a respirator, safety goggles, gloves, and other protective clothing during installation. Immediately after use, wash any area of exposed skin. If contact is made with the eyes, flush thoroughly with water, do not rub. Do not take internally. Keep out of reach of children and animals. Dispose of all residual materials according to local, state, and federal regulations. Read the Cantera™ Vertical Wall Mix Material Safety Data Sheet (MSDS) before installing the product.

4. Packaging: Cantera™ Vertical Wall Mix is available in 35-pound (15.9 kg) bags. Uni-Mix® Color Pack weights vary from 0.5 – 1.25 pounds (0.23 – 0.57 kg) depending on the color selected.

4.1 SHELF LIFE: The shelf life of Cantera™ Vertical Wall Mix is 2 years in original, unopened containers, in dry storage away from sources of heat and moisture. Uni-Mix® Color Pack shelf life in unopened, original packages is 2 years.

5. Coverage: The coverage rate of one

35-pound (15.9 kg) unit Cantera™ Vertical Wall Mix is approximately:

11.0 SF at 3/4" thick (1 m² at 19 mm thick)
 8 SF at 1" thick (0.7 m² at 25 mm thick)

Coverage will vary depending on the depth of installation, substrate texture, method of application, and finishing. When imprinting Cantera™ Vertical Wall Mix with Butterfield Color® Vertical Stamping Tools, the overlay should be applied at a thickness equal to the depth of the mortar joint that will be imprinted with the stamping tool or carved by hand. Material applications that are too thin or too thick may not allow for the accurate transfer of the pattern and texture into the overlay product with a stamping tool.

6. Substrate Preparation: Remove all potential bond breakers such as grease, oil, paints, sealants, sealers, drywall taping compound, mastics and other contaminants on the surface. Repair damaged and cracked substrates. Address joints in substrate.

6.1 CONCRETE AND MASONRY: New concrete must be fully cured and free from form release, sealing compounds, laitance, or dusting. Repair bug holes, rock pockets, and spalls with T1000™ Fine Overlay. Repaired areas must be fully cured before the application of the primer and Cantera™ Vertical Wall Mix.

Prepare existing concrete or masonry by high-pressure washing, grinding, chip hammering, or sandblasting. Grind fins and other high points flush with adjacent surfaces. Do not use detergents or soaps since they may leave a surface residue. Do not acid etch as it may weaken the surface. Remove unsound concrete down to sound concrete. Remove and repair damaged or loose mortar between masonry units. Repair random cracks. Failure to remove all contamination and surface defects will cause the topping to delaminate.

6.2 CEMENT BOARD, DRYWALL AND PLYWOOD: Apply fiberglass mesh tape over joints between sheets, at inside and outside corners and over screw heads. Eliminate random movement between sheets and flexing. Mechanically fasten

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a wire mesh to the surface. Sufficiently secure the wire mesh so that it does not sag or bulge from the surface or otherwise move. Repair or replace damaged drywall before securing wire mesh, and applying the primer and Cantera™ Vertical Wall Mix.

6.3 PRIMING, ALL SUBSTRATES: Apply an even coat of Butterfield Color® T1000™ Primer to the prepared substrate using a paint roller or bristled brush. Do not apply primer over damp surfaces. Coverage is 200-300 sq. ft. per gallon (4.9-7.4 m²/L) of diluted primer (1 gallon of primer per 1 gallon of water). Take care to protect adjacent surfaces from overspray or splash. Once the application of T1000™ Primer has dried tack free, installation may proceed. Note: If the initial application of primer contains bubbles or pinholes, a second application of primer is required before installing the overlay. Additionally, rough or very porous concrete substrates may also require a second application of primer at full strength. Cantera™ Vertical Wall Mix may be applied as much as 24 hours after application of the primer. Do not expose the primed surface to moisture or contamination. After 24 hours, if the primed surface is exposed to moisture or becomes dirty, the primer must be reapplied. **Read the Butterfield Color® T1000™ Primer Technical Data Sheet before installing product.**

6.4 SCRATCH COAT: After the primer has dried and prior to applying Cantera™ Vertical Wall Mix, apply a thin scratch coat of T1000™ Fine Overlay to the primed surface. Adjust the mix water so that the scratch coat does not run when applied to the vertical surface. Apply T1000™ Fine Overlay by trowel or hopper gun, approximately 1/16-1/8 inch maximum (1.5-3 mm) thick. One 55-pound (25 kg) bag of T1000™ Fine Overlay will cover approximately 48 SF at 1/8 inch (4.5 m² at 3 mm) thick.

Horizontally rake the surface of the scratch coat with a scratcher trowel or scarifier to create a surface profile. This will enhance the adhesion of Cantera™ Vertical Wall Mix. Do not rake through the scratch coat. Allow the scratch coat to cure for 8 hours. Reapply T1000™ Primer according to the instructions in item 6.3 Priming, all substrates. Begin mixing and applying Cantera™ Vertical Wall Mix, once the primer is dry.

7. Mixing: Ideal mixing and application temperatures are between 45°-85° F (7°-30° C). Use 1.75 - 2.00 gallons (6.6 to 7.5

L) potable water per 35 pound (15.9 kg) bag of Butterfield Color® Cantera™ Vertical Wall Mix. The mix water measurement should be precise. Too little or too much water can cause shrinkage cracks. When temperature, humidity or desired working consistency affect water demand, make small adjustments to the amount of mixing water to achieve proper working consistency. Do not exceed 2.6 gallons (9.8 L) of water when mixing. Do not mix with any other liquid or chemical. Measure the water accurately and consistently from batch to batch. Do not mix partial bags.

Always add water to the container first. Then, if color is to be used, add the Uni-Mix® Color Pack while mixing, using a 600-rpm drill and a paddle or mortar mixer, followed by Cantera™ Vertical Wall Mix. Do not manually mix. Continue to mix for a minimum of 3 minutes until a smooth, uniform, lump-free consistency and a streak-free color has been achieved. After initial mixing, allow material to sit for 3-5 minutes, and then briefly mix again before applying product. If mixture loses its plasticity during application, do not retemper with water. Do not add previously mixed material to new batches. Store bagged materials out of direct sunlight to keep cool. Keep mix water cool or even chilled during hot weather. Keep tools and mixing equipment clean with soap and water.

8. Installation: Mark the location of all working joints in the substrate, in order to saw cut joints through 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 should be filled with 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 Cantera™ Vertical Wall Mix, T1000™ Fine Overlay, and T1000™ Primer. Maximum applied thickness is 2 inches (51 mm) in a single application. Do not apply Cantera™ Vertical Wall Mix over standing or visible moisture on the primed surface. During hot and windy weather, a plastic sheet may be placed over the Cantera™ Vertical Wall Mix surface to reduce moisture loss, which would cause shrinkage cracking and make the surface difficult to texture. Always maintain a wet edge during application. Terminate installations at existing

joint lines, corners or other fixed objects.

8.1. TROWEL APPLICATION: Apply Cantera™ Vertical Wall Mix with a pool trowel and mortarboard. Apply material at a consistent thickness to minimize random shrinkage cracking and to ensure consistent pattern and texture transfer when stamping.

Do not overwork the surface with the pool trowel. Do not hard trowel Cantera™ Vertical Wall Mix. Keep the trowel clean by periodically cleaning with water. Wipe trowel dry before working the surface. Application time will vary with temperature, wind, humidity and applied thickness. Do not mix or apply more material than can be handled effectively for the installation. If the surface finish of the overlay is not satisfactory, scrape and remove the problem area before it starts to dry and then reapply the overlay. Note: the reapplied material may be visually different from the surrounding surface.

If the material is sagging appreciably after application, reduce mix water. If the material is falling off the surface, it may be too dry, slightly increase mix water. Adjusting the application thickness is also beneficial. For example, if the desired final thickness is 3/4 inch, first apply 3/8 inch and then apply the final 3/8 inch. Do not allow the first 3/8 inch application to set before application of the final 3/8 inch. Once the desired thickness is achieved, stamping can be started.

8.2. STAMPING OR TEXTURING: Apply Butterfield Color® Clear Liquid Release to the Cantera™ Vertical Wall Mix, to Butterfield Color® Vertical Stamping Tools, or Texture Skins and Mats before stamping. Complete all troweling before the liquid release is applied. Stamping time, up to one hour, will vary widely depending on temperature, humidity and overlay thickness. Begin stamping as soon as mixture has set sufficiently to achieve a clean impression without tearing the surface. Existing control joints should be mapped out prior to the placement of the Cantera™ Vertical Wall Mix and re-cut full depth after the installation before cracking occurs. Protect Cantera™ Vertical Wall Mix from rain for 24 hours after placement. Read the Clear Liquid Release Technical Data Sheet before installing product.

Utilize a fixed point or edge, such as level finished sidewalk, a level floor or deck, or the level top of a wall, to guide placement of the stamping tools. Snap-

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ping a string line will also work. Push the stamping tool into the Cantera™ Vertical Wall Mix until there is a uniform distribution of material along the stamp tool surface. Uniform distribution is achieved when the stamping tool resists deeper embedment. Hand press, but do not aggressively tamp the stamping tool. Press the stamp tool into the surface, but do not slide the tool back and forth. Keep the stamping tools clean and reapply the liquid release agent during the imprinting process to eliminate sticking. If some of the wall mix extrudes from around the edge of the stamping tool during imprinting, it can be removed or contoured by hand carving after the stamping process is completed. If an excessive amount of material is squeezed outside the edges of the stamping tool, consider delaying the imprinting process until the wall mix stiffens slightly before continuing.

When stamping an inside corner, utilize a floppy mat to apply texture into the corner, followed by the stamp tool for the deeper joint. The areas closest to the corner can be hand carved or detailed to extend the joints directly into and around the corner. For outside corners, stamp past the edge of the corner, then with the same tool, stamp the adjacent surface around the corner. Vertical grout lines too close to the edge can be smoothed over during hand carving.

8.3 HAND CARVING: If desired, Cantera™ Vertical Wall Mix can be hand carved or sculpted between 6 and 24 hours after installation to remove any imperfections or as the primary creative technique instead of stamping or texturing with a stamp or texture tool. Do not use a liquid release agent if the surface will be only be cut/carved by hand. Carving time will vary widely depending on temperature, humidity, and overlay thickness. Carving tools, such as those used to sculpt and cut artists clay, are very useful. Surface imperfections and joint shape may also be smoothed or contoured with a finger or a dampened 1"-3" paint brushes.

9. Curing: Cantera™ Vertical Wall Mix is self-curing. However, during hot weather or windy conditions, fog misting, or polyethylene sheets may be used to minimize plastic shrinkage cracking. Shrinkage cracks can be repaired by mixing Cantera™ Vertical Wall Mix to a scratch coat consistency and then working the material into the shrinkage cracks with a finger or with a dampened paintbrush. The method of curing may affect the final color of Cantera™ Vertical Wall Mix. Verify curing method and timing with a mock up. Once the curing method has been determined, utilize consistently throughout the installation. Curing time varies with ambient and substrate temperatures, and humidity. A full 28-day cure is required before exposure to freeze/thaw cycling.

Saw cutting of control joints directly over the existing control joints in the concrete substrate should be completed within 14 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.

10. Staining: For natural appearing color variations, Cantera™ Vertical Wall Mix can be colored with Perma-Cast® Sierra Stain™, Elements™ Transparent Concrete Stain, or a combination of these stain products. Cantera™ Vertical Wall Mix should be cured for 7 days at 70° F (21°C), clean, and dry before applying the stain colors. Read each product's technical data sheet before applying.

11. Sealing: A sealer is not required over Cantera™ Vertical Wall Mix.

12. Repair: Damage to the overlay surface should be repaired with Cantera™ Vertical Wall Mix. Once the cause of the damage has been determined and corrected, the deteriorated area should be cut and chipped to the minimum applied depth of the product, 3/4 inch (19 mm). The repair cavity should be chipped to a uniform depth to minimize random shrink-

age cracking in the repaired surface. The perimeter of the repair cavity should be saw cut or chipped out to prevent feather edging of Cantera™ Vertical Wall Mix. All dust and contamination should be removed before application of Cantera™ Vertical Wall Mix. The repaired area may appear differently than adjacent surfaces. Repair materials and methods should be evaluated and confirmed with a repair mock-up.

13. Quality Control: Cast a job site sample at least 21 days prior to the installation for approval of color and finish. Utilize all materials, tools, and techniques for 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. Verify maintenance requirements. Site visits by Butterfield Color, Inc. Personnel are for making technical recommendations only and not for supervising or providing quality control.

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Suggested Short Form Specification for Butterfield Color® Cantera™ Vertical Wall Mix

Prepare overlay surfaces and prime with Butterfield Color® T1000™ Primer according to manufacturer's instructions. Mix Butterfield Color® Cantera™ Vertical Wall Mix according to manufacturer's instructions. Apply scratch coat of 1/16- to 1/8-inch thickness by trowel of hopper gun, and horizontally rake to create surface profile and allow to dry. Reapply even coat of primer. [Optional: Mix Vertical Wall Mix with Butterfield Color® Uni-Mix® Color Pack [] according to manufacturer's instructions.] Trowel-apply Butterfield Color® Cantera™ Vertical Wall Mix at a thickness of [] inches, maintaining a wet edge. Clean tools frequently to avoid build up of overlay materials. If required thickness will stay on surface, apply Vertical Wall Mix in multiple layers to achieve required thickness. Apply Butterfield Color® Clear Liquid Release according to manufacturer's instructions and imprint using Butterfield Color® Vertical Stamping Tools using [] pattern. Cure according to manufacturer's instructions. [Optional: Apply Butterfield Color® Perma-Cast® Sierra Stain™ according to manufacturer's instructions.]

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