



LITHOCHROME® Color Hardener

A ready-to-use, dry-shake, colored or uncolored hardener for freshly placed concrete hardscapes or floors.

TECH-DATA BULLETIN A-104.19

1 Product Description

Formulated to be easily incorporated into the surface of freshly placed concrete, LITHOCHROME® Color Hardener produces exterior hardscapes or interior floors that are durable and abrasion resistant. Due to improved surface density, the color-hardened concrete is long-wearing and has improved resistance to the effects of freeze/thaw cycles and deicing salts. Horizontal concrete colored with LITHOCHROME Color Hardener requires minimal maintenance to remain attractive even in demanding environments. The permanent, high-opacity, uniform colors have been time-tested for over 80 years.

LITHOCHROME Color Hardener is available in a wide range of nonfading colors. Whites are available for light-reflective surfaces, and A-11 Concrete Gray, for use when an uncolored hardener is desired. The uniform, streak-free hues of LITHOCHROME Color Hardener provide color consistency, phase-to-phase and project-to-project. It cost-effectively provides superior coverage to produce attractive and durable surfaces suitable for vehicular traffic and high use pedestrian areas. LITHOCHROME Color Hardener may be used for warehouse, industrial, or commercial interior concrete floors to protect the surface and reduce damage from wear.

Geometric patterning may be added to color-hardened hardscapes or floors by scoring or saw-cutting to define separate color areas. To match or blend with LITHOCHROME color-hardened hardscapes or floors, adjacent surfaces of freshly placed, vertical concrete, such as curbs and risers, may be plastered with a mix of LITHOCHROME Color Hardener and water.

LITHOCHROME Color Hardener may be applied by flash broadcasting onto the surface of freshly placed uncolored concrete or integrally colored concrete of a contrasting color to produce irregular color accents.

LITHOCHROME Color Hardener is preferred when imprinting concrete to produce the look of handset brick, tile, or aged stone. When used with LITHOTEX® Pavecrafters® imprinting tools, its rich finishing paste allows the production of sharp, clear, wear-resistant patterns. Color-hardened, antiqued surfaces that exhibit an attractive, timeworn, mottled patina are achieved by use of LITHOCHROME® Antiquing Release. When an antiqued appearance is not desired, LITHOTEX® Liquid Release or SCOFIELD® Liquid Release SG may be used to provide a colorless, bond-breaking barrier. Information about imprinting and antiquing concrete is available in Scofield's Tech-Data Bulletins *T-404 LITHOTEX Pavecrafters*, *A-854 LITHOCHROME Antiquing Release*, *T-604 LITHOTEX Liquid Release*, or *T-614 SCOFIELD Liquid Release SG*.

2 Coverage

Coverage requirements vary according to intended use and color. For residential applications, the minimum coverage rate is 50 pounds per 100 square feet (2.5 kg/m²). For commercial applications or when a lightly sandblasted finish is required, a minimum of 90 pounds per 100 square feet (4.5 kg/m²) is recommended. For heavy-duty applications, up to 120 pounds per 100 square feet (6.0 kg/m²) may be used.

Regardless of use, light colors and whites require minimum coverage rates of 90–120 pounds per 100 square feet (4.5–6.0 kg/m²). Scofield should be consulted for the minimum coverage rates of specific custom colors.

Because of the difference in their relative densities, the above coverage rates result in approximately 75% greater thicknesses when using LITHOCHROME Color Hardener than if a metallic hardener were used at the same coverage rate.

LITHOCHROME Color Hardener may be plastered onto freshly placed vertical surfaces at the rate of approximately 80 pounds per 100 square feet (4.0 kg/m²).

3 Limitations

Application must be at the coverage rates given in section 2 *Coverage*. If insufficient material is applied, the abrasion resistance of the cured, color-hardened surface will be reduced. If the cured surface is to be sandblasted, textured or polished, particular care must be taken to insure that adequate LITHOCHROME Color Hardener is used and consistent coverage obtained or portions of the underlying concrete substrate will be revealed during the sandblasting, texturing, or polishing process.

LITHOCHROME Color Hardener is not suitable for use over self-leveling, cementitious toppings. Though it may be mixed with water and plastered on the vertical faces of freshly placed concrete incidental to color-hardened flatwork, it is not intended for extensive use on vertical concrete surfaces.

All fine and coarse aggregates in the concrete substrate must be nonreactive. Fluosilicate-type chemical hardeners should not be used, since they leave a nonuniform, whitish residue.

4 Composition and Materials

LITHOCHROME Color Hardener is a streak-free, powdered, cementitious material containing special, hard aggregates and is produced by a proprietary manufacturing and intergrinding process. Formulated as a high-opacity color-hardening material for the top surface of freshly placed concrete substrates, it is lime proof and has maximum resistance to the effects of sunlight (UV). For optimum surface hardening, LITHOCHROME Color Hardener contains aggregates selected for hardness and purity that are carefully graded through a wide particle-size range to produce dense, wear-resistant surfaces.

5 Applicable Standards

The coloring materials in LITHOCHROME Color Hardener conform to ASTM C 979 *Pigments for Integrally Colored Concrete* in reference to color stability.

Professional concreting standards and practices, including those published by the American Concrete Institute (ACI) and the Portland Cement Association (PCA), should be followed. Referring to ACI 302.1R *Guide for Concrete Floor and Slab Construction* is recommended.

6 Colors

LITHOCHROME Color Hardener is available in a variety of colors as depicted on Scofield's Color Charts *A-112 LITHOCHROME Color Hardener* and *A-132 Color Selection Chart*.

The colors shown on these Color Charts approximate the colors obtained when the color-hardened surface is cured with LITHOCHROME® Colorwax™ or COLORCURE® Concrete Sealer in the matching color. Use of other curing methods will alter the color of the surface, as will certain texturing methods such as sandblasting.



With sufficient prior notification, many custom colors, from light pastels to intense hues, can be formulated, including all colors shown on Scofield's Color Chart A-312 *CHROMIX® Admixtures for Color-Conditioned® Concrete*. Custom colors are manufactured per quotation. Contact your Scofield representative for availability and pricing.

7 Textures and Slip Resistance

Only uniformly slip-resistant concrete finishes, such as swirl, broomed, lightly sandblasted, or slip-resistant imprinted textures should be applied when the color hardener is installed. On flat interior floors adequate precautions must be taken to ensure that the surface is not slippery. A slip-resistant, flat-troweled finish is suggested.

For safety considerations, representative jobsite samples as described in section 11 *Jobsite Samples* must be produced prior to installation, and the entire surface inspected after completion to verify and approve the adequacy of wet and dry slip resistance.

8 Packaging

LITHOCHROME Color Hardener is available in easy opening 50-pound (22.7 kg) bags and pails. 10-pound (4.5 kg) pails are also available where smaller quantities are desired, as for use in flash broadcasting procedures.

9 Storage and Shelf Life

Under normal conditions and when kept dry and moisture free in unopened containers, the shelf life of LITHOCHROME Color Hardener when packaged in bags is 1 year from the date of purchase. When packaged in plastic pails, the shelf life is 2 years from the date of purchase. Storage must be under roof and off the floor. Inventory must be rotated to maintain product that is within shelf life limits.

10 Cautions

WARNING!

HARMFUL IF INHALED. IRRITATING TO EYES AND SKIN. MAY CAUSE DELAYED LUNG INJURY (SILICOSIS). DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN. CONTAINS CEMENT AND SILICA (QUARTZ). Cancer hazard. Contains Silica (Quartz) which can cause cancer. (Risk of cancer depends on duration and level of exposure.) Use only with adequate ventilation. Do not breathe dust. Wet cement may cause alkali burns. Avoid contact with eyes, skin, and clothing. Wear dust (particulate) respirator (NIOSH TC-84A approved), safety goggles, and gloves. Follow respirator manufacturer's directions for respirator use.

First Aid: Eyes—DO NOT RUB EYES. Immediately flush thoroughly with large amounts of water. Skin—Wash thoroughly with soap and water. Remove soiled clothing and wash before reuse. Inhalation—If inhaled, or if difficulty in breathing is experienced, move to fresh air. If symptoms persist or develop, or if ingested, get medical attention.

Wash thoroughly immediately after handling. Store in a cool, dry, well-ventilated area in unopened original packaging or in tightly closed, labeled containers. Avoid generating dust during recovery or disposal. Disposal of all residual or recovered product must be in accordance with applicable federal, state, and local regulations. Before using or handling, read the *Material Safety Data Sheet and Warranty*.

11 Jobsite Samples

Producing architectural concrete requires skill and practice. Timing, application and texturing techniques, imprinting

patterns, experience in use of the material, antiquing, curing, sealing and other factors will affect the final appearance and performance of color-hardened hardscapes and floors. Representative jobsite samples must be produced and approved prior to installation.

Samples must be produced for each color and texture and be of adequate size to be representative. They should be produced by the same workers who will install the color-hardened flatwork using the contemplated job materials, construction tools, and techniques. All samples should be finished, textured or imprinted, cured, and if applicable antiqued and/or sealed as specified.

For safety considerations, the entire surface of the jobsite sample must be inspected after completion to verify and approve the adequacy of wet and dry slip resistance.

12 Subgrade Preparation

The subgrade should be well drained and have adequate and uniform load-bearing characteristics. To reduce cracking, it should be graded so that the thickness of the concrete will be uniform. At the time of concreting, it must be moist, completely consolidated, and free of frost. If necessary, the subgrade may be dampened with water in advance of concreting, but concrete should not be placed over freestanding water or over soft, muddy or frozen ground.

13 Concrete Mix Design

The concrete should contain a minimum of 5 1/2 sacks (517 lb) of cement per cubic yard (300 kg/m³) of concrete. All fine and coarse aggregates must be nonreactive (free of deleterious particles) and the water content should be the minimum amount practical.

The mix design must not permit segregation of components during pumping, placing or consolidation of the concrete. In the absence of a specific mix design, a 4-inch (100 mm) maximum slump is recommended.

A normal or retarded-set, water-reducing admixture may be used. An air-entraining admixture complying with ASTM C 260 *Air-Entraining Admixtures for Concrete* should be used when specified or required by the engineer for freeze/thaw durability, and finishing procedures should be adjusted or delayed to minimize formation of blisters. The concrete mix must not contain any admixture or additive that contains calcium chloride. During cold-weather concreting, a nonchloride accelerator may be used. No high-range water reducing admixtures (superplasticizers) should be added. Mixes containing high levels of fly ash as a cement replacement may be more difficult to incorporate the hardener into and to finish properly.

14 Concrete Installation

Prior to placing the concrete substrate, representative jobsite samples must be produced and approved as described in section 11 *Jobsite Samples*.

Surrounding areas, landscaping, and adjacent surfaces should be protected. The work area should be roped off, nearby vehicles removed, and appropriate sections closed to traffic. Prior to concrete installation the required number of bags or pails of color hardener should be distributed outside the formwork proportional to the area to be covered. Quantities for the first shake, second shake, and so on should be separated.

Weather conditions should be considered when planning installation. Professional practices as described in the ACI standards 305R *Hot Weather Concreting* and 306R *Cold Weather Concreting* should be followed. Climatic and other conditions will affect the size of the work crew required. Sufficient personnel should be scheduled.



When concrete is placed and finished in hot, windy weather, windbreaks may be needed. Precautions should be taken to prevent plastic shrinkage cracking resulting from excessively rapid drying at the surface as described in *CIP 5 Plastic Shrinkage Cracking* published by the National Ready Mixed Concrete Association.

The concrete mix should be controlled to provide good batch-to-batch uniformity, and the slump should be consistent throughout the project.

The concrete should be placed and spread so that it completely fills all space inside the forms, then consolidated by vibrating to provide a suitable surface for finishing. If tamping is used for consolidation it should be kept to a minimum, and concrete adjacent to the forms should be spaded.

Before the appearance of excess moisture or bleed water, the surface should be screeded to the finished grade specified by the architect, and wood-floated to the required flatness and levelness. Suggested tolerances are given in *ACI 302.1R Guide for Concrete Floor and Slab Construction*. Exterior concrete should be sloped adequately for proper drainage, normally a minimum of $\frac{1}{4}$ inch per foot (2 cm/m). When the concrete is air-entrained, floating should be delayed to minimize stickiness.

Floating to embed the coarse aggregate and bring the mortar to the surface should be done with wood floats so that the surface remains open. Troweling closes the surface, making it more difficult to work the color hardener into the plastic concrete. It should be done only after the final color-hardener application.

15 Application

Adjacent concrete surfaces should be protected by plastic sheeting during application and finishing of the color hardener. To ensure sufficient and uniform coverage, the color hardener should not be applied at less than the rate described in section 2 *Coverage*.

The color hardener should be applied after the concrete substrate has reached the point where the bleed water disappears and the floating process will not disrupt the level of the surface. Earlier application may reduce durability and require a higher coverage rate. Color hardener should never be used to dry bleed water remaining on the surface.

LITHOCHROME Color Hardener should be hand-broadcast uniformly across the surface of the plastic concrete by the dry-shake method. Wide areas may necessitate the use of a bridge. Mechanical spreaders are effective on larger installations. The color hardener should normally be applied in two separate broadcasting operations (shakes). Two-thirds of the material should be applied in the first shake with one-third being withheld for the second shake and final touch-up as necessary. For applications of over 100 pounds per 100 square feet (5.0 kg/m²), three shakes should be considered with one-half of the material being applied during the first shake.

To prevent segregation of the aggregates, the color hardener should not be broadcast from a point above knee level or thrown more than a few feet (1 m), less under windy conditions. For more uniform coverage, applications should be made at 90 degrees to each other when practical. Since concrete sets more rapidly along the edges of the slab, material should be applied to the edges first, and they should be worked before the rest of the surface. A small quantity of material should be withheld from the final shake for touching up nonuniform or weak-toned areas as necessary.

The necessary moisture for wetting the color hardener must come from the concrete substrate to develop the proper strength and monolithic bonding. Water must not be sprinkled or otherwise added to the surface during application. Otherwise, a discolored and weakened surface with reduced durability may occur.

After each application, the dry color hardener must be thoroughly and completely worked into the surface by the use of wooden hand floats or a power troweling machine equipped with float blades (shoes). Long-handled fresnos must not be used. The concrete must not be troweled until after the final application.

After application of the final shake, the surface should be floated, then hand or machine troweled. To prevent burning or darkening of the surface, hard steel troweling (burnishing) should be minimized, especially at the edges and joint lines.

The specified texture should be applied uniformly using consistent finishing practices. All surfaces should be finished within reasonably the same time after placing.

On interior floors, final hand-troweling should be done in a consistent direction and uniformly so that it will not be slippery. A slip-resistant, flat-troweled finish is suggested.

If the color-hardened surface is to be imprinted with LITHOTEX Pavcrafters or other mat-type imprinting tools, LITHOCHROME Antiquing Release in the appropriate color or clear LITHOTEX Liquid Release or SCOFIELD Liquid Release SG should be used. If the color-hardened concrete is to be chemically stained after curing, LITHOCHROME® Chemstain® Classic or LITHOCHROME® Tintura™ Stain should be used. The appropriate Scofield Tech-Data Bulletin *T-404 LITHOTEX Pavcrafters*, *A-854 LITHOCHROME Antiquing Release*, *T-604 LITHOTEX Liquid Release*, *T-614 SCOFIELD Liquid Release SG*, *A-414 LITHOCHROME Chemstain Classic*, or *A-424 LITHOCHROME Tintura Stain* must be read completely before using.

When weakened-plane joints are to be saw-cut, the use of a dry-cut saw is suggested within the first few hours.

16 Curing and Sealing

Until completely cured, the color of concrete is normally less uniform and appears darker than the final color. Use of LITHOCHROME Colorwax or COLORCURE Concrete Sealer, Scofield's color-matched curing materials, will properly cure color-hardened concrete, enhance the depth of color, improve color uniformity, and provide surface protection. If a colored curing material is not desired, SCOFIELD® Cureseal-W™ or SCOFIELD® Cureseal-S™ should be used. Scofield's curing materials have been specially formulated for use with colored concrete and conform to the moisture retention requirements of ASTM C 309 *Liquid Membrane-Forming Compounds for Curing Concrete*.

LITHOCHROME Colorwax in the matching color should be used to cure exterior flatwork that will be allowed to weather naturally or that will only receive occasional maintenance and recoating. Exterior flatwork that will receive regular maintenance and resealing and all interior floors should be cured with COLORCURE Concrete Sealer in the matching color or with clear SCOFIELD Cureseal-W or SCOFIELD Cureseal-S.

For curing freshly placed concrete, one coat of LITHOCHROME Colorwax, COLORCURE Concrete Sealer, SCOFIELD Cureseal-W or SCOFIELD Cureseal-S should be applied when the concrete is hard enough to be walked on gently without marring, surface moisture has evaporated, and no condensation can occur.

ACI 302.1R Guide for Concrete Floor and Slab Construction discusses curing colored concrete flatwork with special curing materials similar to Scofield's and recommends against the use of plastic sheeting, wet burlap, damp sand, curing paper, ponding, or other liquid-membrane curing compounds, since they are usually detrimental to color uniformity.

The curing surfaces should be protected from damage by other trades. The concrete must not be covered with plastic sheeting. If additional protection is absolutely required, the surfaces should remain uncovered for a minimum of 4 days, after which they may be covered with new and unwrinkled, nonstaining, reinforced kraft curing paper.



If the surface is imprinted and antiqued, or if it is to be chemically stained, the color-hardened concrete should be cured with new and unwrinkled, nonstaining, reinforced kraft curing paper rather than a curing membrane. The curing paper should conform to ASTM C 171 *Sheet Materials for Curing Concrete*.

When curing with LITHOCHROME Colorwax, SCOFIELD Cureseal-W or SCOFIELD Cureseal-S, an additional thin finish coat may be applied over the initial cure coat if needed or desired. When curing with COLORCURE Concrete Sealer, one thin seal coat is required over the initial cure coat after the moisture content of the concrete is low enough so alkali and other salts do not become trapped beneath the sealer, normally 14–28 days after placement. To protect the appearance of chemically stained or antiqued and imprinted concrete that was cured with curing paper, the surface should be sealed with one of the following: SCOFIELD® Selectseal-W™, SCOFIELD Cureseal-W, or SCOFIELD Cureseal-S. Where a lower-cost sealer is desired, the use of CEMENTONE® Clear Sealer may be considered. The appropriate Scofield Tech-Data Bulletin A-514 *LITHOCHROME Colorwax*, A-634 *COLORCURE Concrete Sealer*, B-504 *SCOFIELD Selectseal-W*, B-204 *SCOFIELD Cureseal-W*, B-604 *SCOFIELD Cureseal-S*, or A-764 *CEMENTONE Clear Sealer* must be read completely before using.

All surfaces must be thoroughly inspected to verify and approve installation and safety, including wet and dry slip resistance, prior to opening the cured or sealed color-hardened surface to traffic.

17 Plastering Vertical Concrete Surfaces

To match or blend with color-hardened hardscapes or floors, the freshly placed vertical faces of curbs, risers, and planters may be plastered with LITHOCHROME Color Hardener at the rate of approximately 80 pounds per 100 square feet (4.0 kg/m²). The forms should be removed as soon as the concrete is self-supporting. The powdered color hardener should be mixed with clean water to a plaster consistency and immediately troweled onto the newly stripped surfaces. When a consistent appearance is desired, the plastered surfaces should be textured, cured, and sealed in the same manner as the adjacent flatwork.

18 Maintenance

For exterior concrete hardscapes cured with LITHOCHROME Colorwax, an occasional maintenance application may be made after the Colorwax coat has weathered or worn from the surface. For exterior or interior concrete hardscapes or floors cured and/or sealed with COLORCURE Concrete Sealer, SCOFIELD Cureseal-W, SCOFIELD Cureseal-S, or SCOFIELD Selectseal-W, a maintenance application should be made periodically to protect the base sealer. Instructions for the maintenance and resealing or recoating of colored concrete surfaces are available in Scofield's Tech-Data Bulletins A-514 *LITHOCHROME Colorwax*, A-634 *COLORCURE Concrete Sealer*, B-204 *SCOFIELD Cureseal-W*, B-604 *SCOFIELD Cureseal-S*, and B-504 *SCOFIELD Selectseal-W*.

Interior concrete floor surfaces colored with LITHOCHROME Color Hardener and cured or sealed with a recommended Scofield product should be protected with a compatible, slip-resistant, emulsion-type, commercial floor finish following the manufacturer's instructions and safety requirements. Recommendations can be obtained 24 hours a day by phoning the JohnsonDiversey hot line at 800-558-2332.

19 Patching

Damaged areas in new or old, color-hardened concrete flatwork should be patched using LITHOCHROME Color Hardener in the matching color. The cause of the deterioration should be determined and corrected before patching so that the need for repairs will not recur.

Depth of the patch, patching techniques, tools used, texture applied, and curing method will affect the apparent color of the finished patch. If practical, patching procedures and mixes should be tested before general patching. To reduce shrinkage cracking, patching should be done when the concrete is shaded in the cool of the day.

Successful patching depends on proper surface preparation. The patch should not be featheredged. To eliminate spalling of the edges or cracking of the surrounding concrete, the perimeter of the area to be patched should be saw-cut with a diamond or carbide saw blade. Undercutting slightly will more firmly hold the patch in place. Saw-cuts should not be allowed to overlap so that damage to the adjacent concrete is avoided.

All unsound or cracked concrete must be completely removed inside the saw-cuts to a minimum depth of 1 inch (25 mm) using a handheld hammer and chisel in small areas. A light- or medium-weight pneumatic chipping hammer fitted with a spade-shaped bit will facilitate removal in larger areas. Heavyweight air hammers and chisel-shaped bits should not be used as they may cause cracking in the surrounding concrete.

The depth of the cavity should be reasonably uniform to reduce cracking of the patch, and its surface texture should remain rough to improve bond. If any reinforcing steel is exposed the concrete should be removed from around and under the exposed bars to a minimum depth of 1 inch (25 mm). To prevent surface spalling of the concrete, all exposed steel should be completely encased in the patching mix so that moisture will not reach the metal, causing its corrosion and expansion.

Immediately prior to placing the patching mix, any loose particles, oil, dirt, and standing water must be removed from the cavity. The sides and bottom should be uniformly dampened, then coated with a high-quality bonding agent following the manufacturer's instructions and safety requirements.

One part LITHOCHROME Color Hardener in the matching color should be field mixed with one part properly graded pea gravel and enough water to produce a low-slump mix with a trowelable consistency. The mix should firmly fill the cavity to within approximately 1/16 inch (2 mm) of the top. Additional LITHOCHROME Color Hardener should then be broadcast over the surface and wood floated to the level of the surrounding concrete.

Freshly placed patches should be textured to match the adjacent concrete as closely as possible. To develop proper strength and color, the patch should be cured and if desired, sealed with LITHOCHROME Colorwax or COLORCURE Concrete Sealer in the matching color as described in section 16 *Curing and Sealing*. To blend the patch more closely with the surrounding concrete, the entire area may be cleaned and sealed with the same color-matched material if desired.

20 Availability

LITHOCHROME Color Hardener is marketed nationwide and internationally, directly to the user through strategically located warehouses, dealers, and representatives. Contact Scofield for its nearest representative.

Scofield offers a complete line of engineered systems for coloring, texturing, and improving performance in architectural concrete. Scofield Systems address specialized requirements for interior, exterior and vertical uses with compatible systems of complementary products including coloring admixtures, color hardeners, colored cementitious toppings, stains, curing compounds, sealers, coatings, repair products and texturing tools. Visit the Scofield website at www.scofield.com for further information.

**21 Limited Warranty**

Since no control is exercised over product use, L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE IS AUTHORIZED OR WARRANTED BY SCOFIELD, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials.

SCOFIELD WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING FOR DELAYS OR LOST PROFITS. Communication of this warranty and its limitations to end users is not the responsibility of Scofield, but should be communicated by those in direct contract with the end user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end user shall determine the suitability of the products for the intended use and assumes all risks and liability in connection therewith.

Suggested Short Form Specification for Color-Hardened Concrete:

All concrete hardscapes, floors, and adjacent vertical surfaces designated in the plans or specifications as having a colored and hardened surface shall be color-hardened with LITHOCHROME® Color Hardener in accordance with Tech-Data Bulletin A-104, using _____ color and a minimum coverage rate of _____ pounds per 100 square feet. All color-hardened concrete shall be cured with LITHOCHROME® Colorwax™ in the matching color in accordance with Tech-Data Bulletin A-514 (*or cured and sealed with COLORCURE® Concrete Sealer in the matching color in accordance with Tech-Data Bulletin A-634*). All products shall be manufactured by L. M. Scofield Company, (800) 800 9900, Los Angeles, CA, (323) 720 3000 and Atlanta, GA, (770) 920 6000.

Suggested Short Form Specification for Antiqued, Imprinted Concrete:

All concrete designated in the plans or specifications as having an antiqued-imprinted surface shall be color-hardened with LITHOCHROME® Color Hardener in accordance with Tech-Data Bulletin A-104, using _____ color and a minimum coverage rate of _____ pounds per 100 square feet. The color-hardened concrete shall be antiqued with LITHOCHROME® Antiquing Release in accordance with Tech-Data Bulletin A-854 using _____ color, or coated and imprinted using a mat-type tool such as LITHOTEX® Pavecrafters® in _____ pattern. All antiqued, imprinted concrete shall be sealed with SCOFIELD® Selectseal-W™, SCOFIELD® Cureseal-W™, or SCOFIELD® Cureseal-S™ in accordance with Tech-Data Bulletin B-504, B-204, or B-604. All products shall be manufactured by L. M. Scofield Company, (800) 800-9900, Los Angeles, CA, (323) 720-3000 and Atlanta, GA, (770) 920-6000.

**1 800 800 9900 or www.scofield.com****SCOFIELD PRODUCTS ARE INTENDED FOR PROFESSIONAL USE ONLY****■ L. M. Scofield Company customer service: 1 800 800 9900****Western Headquarters:** 6533 Bandini Blvd., Los Angeles, CA 90040 **voice:** 323 720 3000 **fax:** 323 720 3030**Eastern Headquarters:** 4155 Scofield Road, Douglasville, GA 30134 **voice:** 770 920 6000 **fax:** 770 920 6060**www.scofield.com**