



CHROMIX® L Admixtures for Color-Conditioned® Concrete

Mixed liquid admixtures for integrally coloring horizontal or vertical architectural concrete.

TECH-DATA BULLETIN TD-8830.05 Rev. 1.15.2015

1. Product Description:

CHROMIX® L Admixtures for Color-Conditioned® Concrete are concentrated pigment dispersions designed to permanently color concrete and other cementitious materials. They are made exclusively with fade resistant pigments that conform to the light Resistance (color fastness) requirements of ASTM C 979 Pigments for Integrally Colored Concrete. CHROMIX L dispersions may be poured or pumped directly into concrete mixers. They quickly disperse with minimal effort to develop uniform streak-free color. They do not contribute to the corrosion of concrete reinforcements or fasteners, and do not promote efflorescence.

Use CHROMIX L to color concrete floor slabs, walls, steps, sidewalks, curbs, columns, structural arches and other precast objects. The pigments used in CHROMIX L will not migrate in water. CHROMIX L is the ideal way to color concrete for fountains, pools, water features, or concrete that will be polished and encounter damp or wet environments.

2. Colors:

CHROMIX L Admixture is available in five standard base colors that are compatible with each other and can be mixed to derive thousands of color variants. Standard base colors include:

- CHROMIX L10 Base – Black
- CHROMIX L20 Base – Light Red
- CHROMIX L25 Base – Medium Red
- CHROMIX L30 Base – Yellow
- CHROMIX L40 Base – White

More than 450 color formulas are available for use with the CHROMIX-IT Color Center delivery system. These include colors depicted on Scofield's Color Chart A-312, and numerous competitive colors. Custom pre-blends of CHROMIX L are available in pails or totes.

3. Dosage and Impact on Mix Design:

Dosage will vary between 0.2 to 16.0 pounds of CHROMIX L per 94 pound sack of cement dependent upon desired color and color intensity. Light colors require less CHROMIX L than do dark or saturated colors.

4. Concrete Mix Design Modifications:

CHROMIX L can influence the effect other admixtures will have on concrete properties. Water, Water Reducers (inclusive of Mid-Range or High-Range Water Reducer), and AEA (Air Entrainment Agent) are key ingredients that can require adjustment at dosages over 1 pound. When making any mix design modification, always perform a jobsite test as described later in this bulletin.

The following chart and guidelines are recommended for determining initial mix-design modifications. All final concrete proportions selected should be based on lab trial mixes and verified by larger field trial results.

Mix Design Modification Guidelines:

| Ingredient | Recommendation | Comments |
|---|---|--|
| Water | Reduce water content by 40% of the total weight amount of color admixture used. | If water is not reduced, Slump, Flow, and w/c ratio may be impacted. |
| Water Reducer (WR) (Mid-Range or High-Range Water Reducer) | Reduce WR dose by 2% of the total weight of color admixture used. Fluid ounce reduction will be about 0.307 x total color dose in pounds. | If not adjusted higher than desired slump may result. |
| AEA* | Reduce AEA doses by 50% to 75% in designs that use AEA's. | If not adjusted, high air content may result. |

* In mix designs that do not contain AEA, air content has been proven to not be influenced.

5. Preferred Use Procedures:

1. Mix or recirculate CHROMIX L until it is uniform in consistency.
2. Clean concrete mixer or mixing truck. Remove any previous cleaners, retarders, or traces of previous color.
3. Size the mix design to ensure the mixer is at least 1/3 full, or of a size that ensures mix uniformity within the prescribed number of mixing revolutions or mix time.
4. Introduce CHROMIX L Admixtures for Color-Conditioned Concrete.
5. Introduce water, sand, aggregates, and other admixtures in preferred order.
6. Introduce cement.
7. Mix as normally prescribed.

Modification of Preferred Use Procedures:

Order of addition changes may be necessary to accommodate split loads or plant conditions. Good results should be obtained when attention is paid to the following:

CHROMIX L may be added at any time as long as it is given the opportunity to mix until uniform. If not, streaking and uneven color within the concrete can result.

CHROMIX L can be added to the tail end of a load, or after part of a mixed load has been removed. If this is done:

1. Adequate mixing must be performed until the color is uniform.
2. Slump will likely be increased as water will not have been held from the batch.
3. If an AEA was used, air detrainment agent will be needed to avoid high air content.

6. Factors Influencing Final Color & Appearance:

Colors represented on the CHROMIX Color Chart A-312 depict actual samples of broom finished concrete made with a medium gray cement and cured with a Scofield curing and sealing compound. The final color and appearance obtained on the jobsite will be influenced by concrete composition, surface finishing technique, and curing compound/sealer selection.

Composition variations that will impact color include cement type and color, aggregate selection, and the use of pozzolans such as slag or fly ash. Differences in sealer or curing compound type, such as water or solvent based, or if no sealer is used, will influence final appearance. Finishing techniques such as wood float troweled, hard steel troweled, wet broom, or dry broom finishes will influence surface texture, sealer penetration, and final concrete appearance.

Changes in water content and water to cement ratio can influence color development. Mix designs that develop excessive bleed water can float pigment to the surface and cause trails of uneven color. Once mix designs are established, avoid adding water to loosen partially cured loads, "watering" concrete with sprinklers as it cures, or using wet brooms and tools.

As freshly placed concrete cures, its color will vary with differences in surface moisture. Concrete curing in shaded areas or in the center of large slabs will surface dry slower than those exposed to sunlight or closer to form edges. Avoid high salt aggregates. If salt content of aggregates are high, efflorescence can bloom to the surface and alter colors in irregular patterns. These visual differences can be long lasting, and raise questions about the quality of the concrete placement. Use Scofield Colorwax or Scofield Colorcure tinted to match the final color of the cured concrete and avoid these problems and deliver jobs that are uniform in color and appearance.

As with adjustments in mix design, always evaluate composition and finishing techniques as described in section 8. *Jobsite Test Sections* below.



7. Limitations:

The compatibility of CHROMIX L with other admixtures used in the production of concrete must be verified prior to use. Pale, near-white, and bold rich colors, will require white cement and are not achievable in gray cement. Consider LITHOCHROME® Color Hardener for flatwork requiring bold and bright colors as shown in Color Chart A-132.

8. Jobsite Test Sections:

Prior to large scale production, the concrete or cementitious mix design for each color to be produced must be made. Conduct small scale testing to demonstrate concrete from the mix design meets all slump, flow, air content, compressive strength, and any other required concrete specifications.

Prior to general jobsite use, representative Jobsite Test Section(s) or "Mock-Ups" must be produced and approved for each individual concrete color mix design, surface finish/texture, and for each curing compound/sealer combination that will be created.

Use Jobsite Test Sections to verify entire system suitability including frame/mold and foundation preparation methods, surface concrete specification compliance, finishing techniques, safety procedures, and achieved performance of the fresh and fully cured concrete. When applicable, test completed systems for wet and dry slip resistance. Evaluate polishing or coating application techniques, final color, and visual appearance. Do not proceed with products, techniques, or finishing systems that do not meet required specifications or meet with site owner approval.

Selected Jobsite Test Sections should be in close proximity to the larger job area, and made from the same concrete mix design that will be used on the larger project. Test sections should be sized to be representative of the finished project, and be produced by the same workers who will perform the project installation.

9. Packaging:

CHROMIX L base colors and custom colors are available in 250 gallon rigid or collapsible totes with a standard weight of 3350 pounds. Color blends in totes or 5 gallon pails that are dosed to specified batch sizes are available.

10. Storage and Shelf Life:

DO NOT FREEZE! With regular mixing and stored at 40°F to 120°F (4°C to 49°C), CHROMIX L has a 1 year shelf life from date of manufacture. Product stratification and mild separation is normal after transit or prolonged standing. Should this occur, mix or recirculate until the mixture is uniform prior to use.

11. Cautions:

WARNING!

WARNING! MAY IRRITATE EYES, SKIN.

DO NOT TAKE INTERNALLY. DO NOT BREATHE IN SPRAY MIST.
KEEP OUT OF THE REACH OF CHILDREN.

EMERGENCY TELEPHONE NUMBER: CHEMTREC 1-800-424-9300.

May cause mild eye or skin irritation. Safety goggles and impervious gloves are recommended.

First Aid: Eyes—DO NOT RUB EYES. FLUSH IMMEDIATELY WITH WATER. Hold eyelids apart while flushing material out thoroughly with large amounts of water. Skin—Wash thoroughly with soap and water. Remove soiled clothing and footwear and wash before reuse. Inhalation—Move to fresh air. If symptoms develop or if ingested, get medical attention.

Wash thoroughly immediately after handling. Close container after each use. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations. Do not reuse empty container. Before using or handling, read the *Material Safety Data Sheet and Warranty*.

12. Availability:

CHROMIX L is marketed internationally through strategically located dealers, and representatives. Scofield offers a complete line of engineered systems for coloring, texturing, and improving performance of architectural concrete. These include 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.

13. Limited Warranty:

L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality and 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 Concrete Specification:

All concrete designated as colored in the plans and specifications shall contain the proper portion of CHROMIX® L Admixture for Color-Conditioned® Concrete, color designation _____, manufactured by L. M. Scofield Company, (800) 800-9900, Los Angeles, CA, (323) 720-3020 and Atlanta, GA, (770) 920-6000. The color-conditioned admixture shall meet the requirements of ASTM C 979 and ACI 303.1. The color conditioned admixture shall be either prepackaged buckets produced using a CHROMIX®-IT 204 or 304 Series Color Center or dispensed directly into the concrete truck using a CHROMIX®-IT 101 or 304 Series Color Center. All exterior broom or float finished color conditioned concrete shall be cured with LITHOCHROME Colorwax or COLORCURE Concrete Sealer. All interior concrete shall be cured and sealed with Cureseal-W™, Cureseal-S™, Cureseal VOC™ or COLORCURE Concrete Sealer. All color conditioned, imprinted concrete shall be sealed with either Cureseal-W, Cureseal-S, Cureseal VOC, or CEMENTONE® Clear Sealer.



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

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Eastern Headquarters: 4155 Scofield Road, Douglasville, GA 30134 **voice:** 770 920 6000 **fax:** 770 920 6060

www.scofield.com