



QC Color Hardener

Product Information Bulletin 1.1205P

QC COLOR HARDENER

QC COLOR HARDENER is a formulated, dry-shake, colored surface hardener. It is used for coloring, hardening and conditioning freshly placed concrete flatwork. QC COLOR HARDENER is a surface-concentrated coloring method that hardens and densifies.

Uses and Benefits

■ QC COLOR HARDENER increases abrasion resistance and surface density and reduces porosity.

■ Used in conjunction with QC RELEASE POWDER, QC COLOR HARDENER is the preferred product for creating vibrant colors for imprinted/textured concrete. (See separate Product Information Bulletin for complete instructions on QC RELEASE POWDER.)

■ QC COLOR HARDENER is an excellent choice for the following types of projects:

■ Colored, imprinted concrete flatwork and a variety of architectural concrete treatments that would benefit from improved pattern transfer and increased abrasion resistance.

■ Surfaces which require increased abrasion and impact resistance, such as street paving, warehouses, shipping/receiving areas and distribution centers.

■ Interior and exterior surfaces exposed to heavy daily wear and high-impact use.

■ When concrete has been properly air-entrained, surfaces in cold, harsh climates exposed to freeze-thaw cycles.

■ With its blend of select and graded aggregates, architectural cements, and plasticizers, QC COLOR HARDENER creates surfaces that are substantially harder and more wear-resistant than concrete not treated with color hardener.

■ QC COLOR HARDENER is available in 42 standard colors and a wide range of custom colors.

■ QC COLOR HARDENER is an excellent choice for coloring concrete in order to achieve lighter colors and/or more brilliant colors.

■ Light-reflective surfaces can be achieved through the use of a selection of white or light QC COLOR HARDENERS.

■ The synthetic iron oxide pigments used in QC COLOR HARDENER meet or exceed ASTM C 979 and produce brilliant, streak-free, non-fading surfaces.

■ To produce enhanced and richer effects, white-based QC COLOR HARDENERS* can be excellent base choices for the application of QC PATINA STAIN* and QC CEMENTINT*.

■ Due to extensive quality control measures in product manufacturing, QC COLOR HARDENER is designed to produce uniformity of color without color drifts. In addition, use of color hardener does not risk day-to-day variances experienced in ready mixed integral coloring.

■ For high-traffic surfaces as well as commercial and industrial surfaces, QC HEAVY-DUTY COLOR HARDENER* may be used. A detailed Product Information Bulletin for QC HEAVY-DUTY COLOR HARDENER* is available.

Before Any Application

1. Good subgrade preparation is essential. Subgrade must be well drained. To create uniform load-bearing characteristics and to reduce cracking, subgrade should be graded at a uniform thickness. Subgrade should be moist, completely consolidated, and free of frost. The subgrade should be dampened with water in advance of concreting. Concrete should not be placed over freestanding water or over areas that are muddy, frozen or soft.

2. Good concrete mix design is essential. Concrete should contain a minimum of 5 sacks of cement per cubic yard of concrete. All aggregate must be nonreactive. Water content should be at minimum, and the slump should not exceed four inches. A normal or retarded-set, water-reducing admixture may be used. An air-entraining admixture complying with ASTM C 260 is recommended in all concrete flatwork that will be subject to freeze-thaw cycles. The concrete mix must not contain any admixture or additive that contains calcium chloride. During cold weather, a nonchloride accelerator may be used. No high-range water-reducing admixtures (superplasticizers) should be added unless QC is consulted. Mixes containing fly ash may be more difficult to finish.

3. Good concrete pouring practices are essential. Weather conditions should be considered during application. Follow ACI standards for installation, especially in extremely hot or cold weather conditions. Concrete mix should be controlled to provide good batch-to-batch uniformity. Concrete should be placed and spread so that it completely fills space inside the forms. Concrete should be consolidated by vibrating to create a suitable surface for finishing. If tamping is done, it should be kept to a minimum and concrete closest to the forms should be spaded. Before the appearance of bleed water, the surface should be screeded and wood-floated to the finished grade.

4. Before applying QC COLOR HARDENER, a job site sample—using the specified mix design, tools and construction techniques—is recommended. If in doubt about application methods, consult QC CONSTRUCTION PRODUCTS (contact information can be found at the end of this bulletin).

5. It is recommended that a pre-site meeting take place to include the proper authorities and to ensure site conditions are met.

Application

1. Once concrete reaches the point when no bleed water remains on the surface, QC COLOR HARDENER should be evenly hand-broadcast or mechanically applied on the surface.

2. QC COLOR HARDENER is usually provided in two shakes, with two-thirds of the product being applied in the first shake and one-third of the product being applied in the second shake (while also holding back a small amount for touch-up work).

3. After the first shake has been uniformly applied and has absorbed water from the slab, the surface is floated. Wood floats are recommended during this first application.

4. Apply the second shake perpendicular to the first application in a uniform manner. Magnesium or fiberglass floats may be used after the second application, providing all bleed water has left the surface.

5. Saw cuts should be made as soon as possible without disturbing the joint edges.

6. Care should be taken to prevent hard-steel trowel burns, especially at tooled joints and edges.

7. In dry, hot or windy conditions, the use of an evaporation retardant/finishing aid may be considered.

8. For high-traffic surfaces as well as commercial and industrial surfaces, QC HEAVY-DUTY COLOR HARDENER* may be used. A detailed Product Information Bulletin for QC HEAVY-DUTY COLOR HARDENER* is available.

Application to Vertical Surfaces

1. QC COLOR HARDENER may be used to finish vertical surfaces such as curbs or the faces of step risers, but the product is not designed for use on large areas of vertical surfaces.

2. A “plaster mix” of QC COLOR HARDENER may be used when doing steps or other vertical surfaces. To create this mix during the final set stage of the concrete, add only enough water to QC COLOR HARDENER to achieve a workable consistency. Then apply the “plaster mix” to the vertical surface while the concrete is fresh and finish as normal.

Curing and Sealer Color Hardened Concrete

1. For curing concrete treated with QC COLOR HARDENER, choose from a variety of QC cures appropriate to the project requirements: QC CLEAR CURE*, QC COLOR CURE* or QC COLORWAX*. QC CLEAR CURE* and QC COLOR CURE* conform to ASTM C 309. QC CURE AND SEAL SB* conforms to ASTM 1315.
2. For sealing concrete, choose from a variety of QC sealers appropriate to project requirements: QC CEMSEAL*, QC SOLVENT-BASED SEALERS*, QC PERMASEAL*, QC SURPRO* or QC ULTRASEAL*. If further protection is needed or a membrane-forming cure is not appropriate, a new, non-wrinkled, non-staining, reinforced, kraft-curing paper may be used.

Maintenance

It is highly recommended to develop and follow a routine maintenance schedule for all colored concrete so that it maintains a top-quality appearance. Colored concrete installations should be routinely inspected, cleaned and resealed as required by the local conditions. Cleaning and resealing schedules will depend on a number of factors including, but not limited to, volume and intensity of traffic, maintenance procedures and weather.

Limitations

- Inconsistencies in job site conditions, finishing practices and curing methods may produce variations in the color of the finished product.
- All aggregates in the concrete substrate must be nonreactive.
- When using QC COLOR HARDENER on air entrained concrete, air content should not exceed 4%.

Coverage Guide

- **Note** – Actual coverage may vary depending on color choice, application method, and other local conditions. For high-traffic surfaces as well as commercial and industrial surfaces, QC HEAVY-DUTY COLOR HARDENER may be required. A detailed Product Information Bulletin for QC HEAVY-DUTY COLOR HARDENER* is available.
- **Minimum Coverage for Dark and Medium Colors** – 60-80 pounds per 100 square feet.
- **Minimum Coverage for Medium and Light Colors** – 80-100 pounds per 100 square feet.
- **Minimum Coverage for Light Colors** – 90-120 pounds per 100 square feet minimum.
- **Minimum Coverage for White QC Color Hardener Colors** – 120-150 pounds per 100 square feet.

Package Sizes

QC COLOR HARDENER comes in 60-pound plastic-lined bags. Also available in 60-pound pails at an additional charge.

Shelf Life

QC COLOR HARDENER has a shelf life of one year if stored in dry conditions.

Product Handling

For handling and use, consult the corresponding Material Safety Data Sheet before using product.

Warranty

QC COLOR HARDENER, a proprietary product, is warranted to be of uniform quality within manufacturing tolerances. Since control is not exercised over its use, no warranty, expressed or implied, is made as to the effects of such use. Seller's and manufacturer's obligation under this warranty shall be limited to refunding the purchase price of that portion of the material proven to be defective. The user assumes all other risks and liabilities resulting from use of this product. If you have any questions, please contact QC CONSTRUCTION PRODUCTS.

Specifications (Short Form)

All horizontal surfaces and adjacent vertical surfaces designated in plans or specifications as having a color hardened surface shall be colored with QC COLOR HARDENER, using _____ [name of color(s)] with a minimum of _____ pounds per 100 square feet. Apply _____ [the appropriate QC curing product] as soon as possible, following final finishing operations. For all QC curing products, please refer to the respective Product Information Bulletins for complete product information and application instructions.

*PLEASE REFER TO CORRESPONDING PRODUCT INFORMATION BULLETINS FOR TECHNICAL AND APPLICATION DATA.

For complete information on all QC products—including product information catalogs, product brochures, color charts, technical specifications, sales aids and more—contact QC CONSTRUCTION PRODUCTS.

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