

Color Hardener HD (Heavy-Duty)

INNOTECH® COLOR HARDENER HD (Heavy-Duty) is an excellent hardener for surfaces requiring increased impact resistance, such as parking structures, streets, warehouses, loading docks, shipping/receiving areas, distribution centers, shopping centers, amusement parks, sports centers or convention centers.

Product Features and Benefits

Surfaces treated with INNOTECH COLOR HARDENER HD are substantially harder and more wear-resistant than concrete not treated with heavy-duty color hardener due to its blend of select and gradated aggregates, architectural cements and plasticizers.

INNOTECH COLOR HARDENER HD...

- Is available in 42 standard colors (view the INNOTECH COLOR HARDENER color chart for selections), a wide range of custom colors, and in light-reflective white. This product is also available in natural gray.
- Is an excellent hardener for concrete that has been properly air-entrained, surfaces in cold, harsh climates exposed to freeze-thaw cycles.
- Is an excellent hardener for interior surfaces exposed to heavy daily wear and/or high-impact use.
- Is an excellent hardener for colored, imprinted concrete flatwork and a variety of architectural concrete treatments.
- Has better coverage rates. Coverage rates can result in up to 50% greater thickness compared to metallic hardeners (due to difference in densities).
- Is made with emery aggregates non-rusting and can be used in wet environments, unlike metallic hardeners.
- Uses synthetic iron oxide pigments to produce brilliant, streak-free, non-fading, and as requested, light reflective surfaces that offer excellent resistance to ultraviolet light.
- Is the preferred product to produce vibrant colors in imprinted concrete when used in conjunction with INNOTECH RELEASE POWDER†.
- Is available in white-base to produce enhanced and richer effects and can be an excellent base choice for the application of INNOTECH CHEMICAL STAIN†.
- Is designed to produce uniformity of color without color drifts due to extensive quality control measures in product manufacturing.

Prior to Application

- 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. If necessary, 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.
- Good concrete mix design is essential. Concrete should contain a minimum of 5-1/2 sacks of cement per cubic yard of concrete. All aggregate must be nonreactive. Water content should be at minimum, and slump should not exceed four inches. A normal or retarded-set, water-reducing admixture may be used. An air-entraining admixture that complies 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 non-chloride accelerator may be used. No high-range water reducing admixtures (superplasticizers) should be added. Mixes containing fly ash may be more difficult to finish.
- 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, screed and wood-float the surface to the finished grade.
- Before applying INNOTECH COLOR HARDENER HD, a job site sample using the specified mix design, tools and construction techniques is recommended. Contact an INNOTECH Field Representative for assistance about application methods.
- It is recommended that a pre-site meeting take place to include the proper authorities and to ensure site conditions are met.

Product Application

- Once concrete reaches the point where no bleed water remains on the surface, INNOTECH COLOR HARDENER HD should be evenly hand broadcast or mechanically applied on the surface.
- INNOTECH COLOR HARDENER HD 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).
- After the first shake has been uniformly applied and has absorbed water from the slab, float the surface. Wood floats are recommended during this first application.
- 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.
- Saw cuts should be made as soon as possible without disturbing the joint edges.
- Care should be taken to prevent hard-steel trowel burns, especially at tooled joints and edges.
- In dry, hot or windy conditions, the use of an evaporation retardant/finishing aid may be considered.
- Alternative Application for Large Areas: A mechanical spreader and a power troweling machine may be used. The mechanical spreader, equipped with an adjustable flow, should spread between one-half pound to one pound of hardener per square foot. The power-troweling machine, equipped with float blades, should work the hardener shakes into the surface of the plastic concrete. Float blades should be removed during final troweling.

Product Application: Vertical Surfaces

- INNOTECH COLOR HARDENER HD 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.
- A “plaster mix” of INNOTECH COLOR HARDENER HD 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 INNOTECH COLOR HARDENER HD to achieve a workable consistency. Then apply the “plaster mix” to the vertical surface while the concrete is fresh and finish as normal.

To Cure and Seal Color Hardened Concrete

- For curing concrete treated with INNOTECH COLOR HARDENER HD, choose an INNOTECH cure appropriate to the project requirements: INNOTECH CURE & SEAL SB† (gloss or matte) or INNOTECH COLORWAX†. INNOTECH CURE & SEAL SB† conforms to ASTM C 309 and ASTM C 1315.

- If further protection is needed or a curing compound cannot be used, the use of a non-wrinkled, non-staining kraft curing paper may be considered. Use according to manufacturer instructions.
- For sealing concrete treated with INNOTECH COLOR HARDENER HD, choose from a variety of INNOTECH sealers appropriate to project requirements: Please reference the "INNOTECH SEALER AND MAINTENANCE PRODUCT GUIDE" to determine the correct sealer for a specific application.

Maintenance

INNOTECH highly recommends you develop and follow a schedule of routine maintenance for all colored concrete so it maintains a 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.

Product 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.
- Application of product must follow minimum rates under the coverage guide or else slip and abrasion resistance will be compromised.
- To achieve maximum slip resistance (i.e. ramps, wet areas, etc.), expose aggregates in INNOTECH COLOR HARDENER HD to a light sandblast or acid wash.
- As the color-hardened surface is exposed to normal wear, darker colored aggregates may become more apparent on the surface. In architectural concrete applications, this wear is more common when lighter colors are used and is considered desirable. However, if this kind of wear is not desired, it is recommended that darker colors be used.

Coverage Information

Actual coverage may vary depending on color choice, method of application, and other conditions.

- Use 1- to 1.5-pounds of INNOTECH COLOR HARDENER HD per square foot (all colors).
- Light-reflective white or light colors may require more material than above guide for adequate coverage.

Applicable Standards

INNOTECH COLOR HARDENER HD meets or exceeds the following standards:

- ASTM C 979: Color stability.
- ASTM C 109: Compressive strength of 12,000 PSI in 28 days.
- ASTM C 944: Abrasion resistance.
- Emery used in INNOTECH COLOR HARDENER HD rates 8/9 on the Moh Hardness Scale. (As comparison, this scale rates diamonds at 10 for hardness.)
- This product may contribute to earning LEED® points under the Sustainable Sites category: 7.1 Heat Island Effect, Non-Roof for New Construction, Existing Building, School and Core & Shell.

Available Packaging

INNOTECH COLOR HARDENER HD is available in:

- 60-pound pails.
- 60-pound plastic-lined bags (special order only, available upon request).

Product Shelf Life/Storage

INNOTECH COLOR HARDENER HD should be stored indoors and away from moisture. Shelf life: 24 months.

Product Handling

Prior to using INNOTECH COLOR HARDENER HD, please reference the corresponding Material Safety Data Sheet to ensure safe handling.

Warranty


INNOTECH COLOR HARDENER HD is a proprietary product, warranted to be of uniform quality within our stringent manufacturing tolerances. As no control is exercised over the product use, no warranty is made as to the effects of such use (neither expressed nor implied). Obligation of the seller and manufacturer under this warranty shall be limited to a refund of the purchase price of that portion of the material proven to be defective. The user assumes all other risk and liability resulting from uses of this product.

Architectural Specifications

Please contact an INNOTECH for assistance with project specifications and specification forms.

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

INNOTECH COLOR HARDENER HD and other INNOTECH products are for professional use only.

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INNOTECH products can be purchased at:



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