BASF

The Chemical Company

PRODUCT DATA

3 03 35 00 **Concrete Finishing**

MASTERCRON®

Colored mineral-aggregate dry-shake surface hardener

Description

Mastercron® is a ready-to-use colored cementitious dry-shake surface hardener incorporating specially sized and graded mineral aggregate. When evenly distributed and finished over freshly leveled and floated concrete, it adds color and improves the wear resistance of concrete floors.

Features	Benefits
• Increases wear resistance	Up to twice the serviceable life of concrete
• Available in light-reflective formulations	Reduces energy and lighting requirements
• Creates a high-density surface	More resistant to liquid penetration; easy-to-clean
• Built-in permanent color	Eliminates the cost of periodically painting or staining the floor
• Reduces surface wear and dusting	Lowers routine maintenance and repair costs

Yield

Primarily for wear resistance:
1.0 – 2.0 lb/ft² (4.9 – 9.8 kg/m²)

Primarily for color:
1.5 – 2.0 lb/ft² (7.3 – 9.8 kg/m²)

Consult your BASF representative for coverage rates specific to your job.

Packaging

55 lb (25 kg) multi-wall bags

Color

Available in energy-efficient light reflective and high-reflective formulations. Please refer to the Floor Products Standard Color Card.

Shelf life

18 months when properly stored

Storage

Store in unopened packaging in a clean, dry area protected from sunlight at 50 to 90° F (10 to 32° C).

Where to Use

APPLICATION

- Where an attractive, surface-colored concrete floor is desired
- Where improved wear resistance for light- to moderate-duty traffic is needed
- When traffic and wear do not demand the added abrasion and impact resistance of a metallic-aggregate surface hardener
- Over freshly leveled and floated concrete
- Warehouse and storage areas
- Institutional and commercial floors
- Shopping centers
- Schools
- Theaters
- Parking garages

How to Apply

Surface Preparation

1. Preparing the base concrete: Pump, place, or otherwise convey the base concrete at a slump not in excess of 5" (127 mm) for a slab on grade. (Please contact your local BASF representative for information on special suspended-slab applications.) After the concrete has been placed, immediately screed, then bullfloat / highway straightedge the surface. Allow bleed water to rise to surface.

2. Early moisture loss and rapid setting around the perimeter of the slab are typical. Monitor them closely for proper timing of the floating operation.

Application

1. Do not apply the dry shake into the bleed water. If excessive bleed water is present, remove standing water by dragging a hose across the surface or using a squeegee or other approved method.

2. After the water sheen has disappeared and just before initial set (when a finisher with knee boards will leave approximately 1/8 – 1/4" impression), float the surface of the slab “open” with a mechanical float fitted with float blades.

Protection and Repair

3. BASF recommends a two-pass process: Apply and float 1/2 to 2/3 of the total amount on the first application. Apply the remaining amount on the succeeding application. Applying more than 1 lb/ft² in one pass often results in limited success. In most cases, it shocks the base slab by demanding more water than is available for incorporation of the shake. Drier areas tend to crack or delaminate, leaving less water available for subsequent shake passes.

4. Apply the first application of the dry shake to obtain a uniform distribution of the surface hardener. An automatic spreader is the most efficient, economical, and precise method of applying a dry shake. When the application of the surface hardener will be conducted by hand or square-tip shovel, apply each pass perpendicularly to the previous application to ensure complete coverage.

5. Once the shake has absorbed sufficient moisture, the surface will somewhat darken. Float and incorporate the dry shake into the surface with a floating machine equipped with float blades or with a wooden bullfloat. A heavy wood float is preferable because it tends to open the slab rather than close it off and possibly trap bleed water under the dry shake layer.

NOTE: Do not use pan floats to incorporate the dry shake into the base concrete, however, they may be used for final floating to achieve flatter floors. Hand float edges with wood or laminated canvas-resin floats or darbies; magnesium floats can lead to discoloration.

6. As the floating of the first dry-shake application proceeds, follow immediately with the subsequent shake application.

7. Once the second shake has absorbed sufficient moisture (the surface will somewhat darken), float the surface with a floating machine equipped with float blades or a wooden bullfloat. Hand float edges with wood floats or darbies.

8. As the floating of the dry shake proceeds, follow immediately with a subsequent shake application, if appropriate.

NOTE: When more than 1.0 lb/ft² (4.9 kg/m²) of dry shake will be applied or in hot and windy conditions, more than two shake applications may be necessary. UNDER NO CIRCUMSTANCE should water, evaporation retarders, or finishing agents be applied to help "wet up" the dry shake. Early moisture loss and rapid setting around the perimeter of the slab are typical; they should be monitored closely for proper timing of the floating operation.

Troweling

1. When appropriate, conduct 2 – 3 mechanical trowelings. Leave the prepared slab untouched until the surface has lost its sheen and can support the weight of a finisher and a finishing machine. At this point, conduct the first troweling of the surface. On the first application, keep trowel blades as flat as possible without digging into the surface.

2. As the surface tightens further, gradually raise the trowel blades to produce the desired surface. Remove all marks and pinholes in the final slightly raised trowel application. NOTE: Do not burnish colored dry-shake or light reflective floors.

NOTE: All moisture used to incorporate dry-shake material must come from within the slab. UNDER NO CIRCUMSTANCES SHOULD WATER BE APPLIED TO AID IN THE INCORPORATION OF THE DRY SHAKE. Under severe or rapid drying conditions, Confilm® evaporation reducer may be mist-sprayed onto the dry shake according to current installation instructions (misuse of these materials can compromise color and performance of dry shake).

Curing

1. At the completion of final troweling and when the surface will not be marred by foot traffic, apply a BASF-approved membrane curing compound according to directions. For VOC-compliant requirements on colored floors consult your local BASF representative for recommendations.

2. After drying, protect hardened surface by covering with scuff-proof, nonstaining builder paper.

3. Keep floors covered and free of traffic and loads for a minimum of 10 days.

4. Maintain ambient temperature of 50° F (10° C) or above during the curing period.

Joints

1. After a minimum of 90 days, apply a semi-rigid epoxy joint filler (e.g., Masterfill® 300i joint filler) in all nonmoving control and sawcut construction joints. For further information on joint placement, refer to the product data sheet on Masterfill® 300i (Form No. 1019368). Discuss the timing and methods for cutting joints at the pre-job conference and in conformance with ACI 302.

2. Delay the installation of the joint filler material as long as possible to allow the slab(s) to adequately cure. Complete curing will reduce the amount of separation between the slab and the joint filler. Please refer to ACI 302R-96, Chapter 9.10.

3. Colored floors require extra care during construction. They must be protected from staining and damage until the structure goes into service. Many factors, including jobsite conditions and applicator methods, can affect the final shade, color, and appearance of a colored concrete floor.

For Best Performance

- To ensure consistent, proper coverage throughout the installation, position bags of material around the perimeters of the slab.
- Consult appropriate sections of ACI Committee Report 302 for monolithic colored dry-shake finishes.
- Store materials in a cool, dry place. Do not use material if packaging is damaged.
- Hold a pre-job conference with your local BASF representative to discuss all aspects of the dry-shake application. Give a copy of the proposed mix design and installation plan to your BASF representative. Cement, aggregate size, aggregate gradation, and admixtures can all affect set time and the ability of the slab to incorporate the dry shake.
- Before application, the installers must make a 10 by 10 ft (3 by 3 m) test application using actual jobsite products and installation methods for the owner and architect to approve.
- The application steps described in this data sheet have proven effective for installing Mastercron® colored dry-shake surface hardener. However, ideal results of these, or any construction product, are highly dependent upon ambient conditions, adequate labor, applicator experience, proper equipment, proper curing, and other factors.
- Proper timing is essential for successful installation of this product. Follow all of the specified procedures at the recommended time.
- Place concrete floors under a roof, if at all possible. Job conditions that influence surface drying and setting time of concrete also affect the timing of the hardener application, the finishing procedures, and the reflectivity of a the slab.
- Do not place dry shake on slab without a roof cover.

- Colored floors require extra care during construction. They must be protected from staining and damage until the structure goes into service. Many factors, including jobsite conditions and applicator methods, can affect the final shade, color, and appearance of a colored concrete floor.
- Unvented flue and exhaust gasses from heaters and equipment can cause a carbonated floor surface. This results in a weak and potentially dusting surface. Provide proper ventilation.
- Consult appropriate sections of the ACI Committee Report 302 for monolithic colored dry-shake finishes. BASF always recommends a two-pass process. Apply and float 1/2 to 2/3 of the total amount on the first application. Apply the remaining amounts on the succeeding applications.
- Do not apply shake into standing bleed water or onto concrete that is bleeding excessively.
- Do not install over concrete containing calcium chloride or concrete containing aggregate that has been saturated with seawater.
- Use wood or composition fiber hand floats for light colored and light-reflective Mastercron® installations.
- If any blistering occurs during the finishing operation, flatten trowel blades immediately. Refloat to open floor and remove blisters. Delay raised troweling until no blisters occur.
- Do not use Mastercron® where operating and service conditions require the added performance of a metallic-aggregate surface hardener. (Please refer to the Masterplate® product data sheets.)
- Do not use where resistance to struck sparks on the surface is desired. (Please refer to Masterplate® DPS product data sheet.)
- Do not use in areas exposed to acids, their salts, or other materials known to rapidly attack or deteriorate Portland cement concrete.
- Do not use on areas subjected to freeze/thaw cycles.
- Do not apply over concrete containing added calcium chloride.
- Do not apply over concrete containing more than 3% air content as indicated by ASTM C 138, ASTM C 173, or ASTM C 231, except when approved by the BASF Technical Services Manager.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

MASTERCRON®

WARNING!

Mastercron® contains silica, crystalline quartz; portland cement; iron oxide; titanium dioxide; anhydrite; chromium oxide; iron oxide; limestone; gypsum; magnesium oxide.

Risks

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains small amount of free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

Precautions

Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Waste Disposal Method

This product when discarded or disposed of is not listed as a hazardous waste in federal regulations. Dispose of in a landfill in accordance with local regulations.

For additional information on personal protective equipment, first aid, and emergency procedures, refer to the product Material Safety Data Sheet (MSDS) on the job site or contact the company at the address or phone numbers given below.

Proposition 65

This product contains material listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents.

For medical emergencies only, call ChemTrec (1-800-424-9300).

BASF Construction Chemicals, LLC – Building Systems

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