

## PRODUCT DATA

**3** 03 35 00 **Concrete Finishing****MASTERCRON® F<sub>F</sub>****Mineral-aggregate dry-shake surface hardener and flatness enhancer****Description**

Mastercron® F<sub>F</sub> is used on floors designed to conform to a specific flatness designation. (Refer to ACI 117, ASTM E 1155M-96, and CSA A23.1-00 for specifics regarding the F-Number System.) Fresh concrete has the ability to integrate up to 1.0 lb/ft<sup>2</sup> (4.9 kg/m<sup>2</sup>) of Mastercron® F<sub>F</sub> after screeding.

**Yield**

When the dry shake is primarily used for wear resistance, the standard application rate is 1.0 – 2.0 lbs/ft<sup>2</sup> (4.9 – 9.8 kg/m<sup>2</sup>). Consult your BASF representative for a specific recommendations.

**Packaging**

55 lb (25 kg) multi-wall bags

**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).

**Features**

- Unique gradation
- Broadcast aggregate
- Early application process
- Creates a dense surface
- Size-graded aggregate and proprietary admixtures
- Aggregate remains at surface despite early application of shake

**Benefits**

- Enhances flatness on flat and superflat construction
- Can be applied to a newly placed slab for a flat or superflat floor (F<sub>F</sub> 25+)
- Applied soon after screeding or bull floating
- Does not leave pinholes common on plain concrete floors; resists penetration by oil and grease; reduces maintenance costs
- Improved finishing
- Abrasion resistance twice that of plain concrete

**Where to Use**

## APPLICATION

- Flat and superflat floors
- High-stack vehicular traffic routes
- Areas where a designated flatness is specified
- As a natural-aggregate hardener on conventional floors
- Warehouses
- Distribution centers
- Aisles and turnarounds
- AGV aisles
- Shipping and receiving areas

## SUBSTRATE

- Over freshly leveled and floated concrete

NOTE: Where greater wear dictates a metallic-aggregate dry-shake surface hardener, consult your BASF representative for information on Masterplate® F<sub>F</sub>.

**How to Apply****Surface Preparation**

1. Preparing the base concrete: Place, pump, or otherwise convey the base concrete at a slump not in excess of 5" (12.7 cm) for a slab on grade and 3.5" (8.9 cm) for a suspended slab. Employing a vibrating or laser-controlled screed as the first phase of flattening is strongly advised. (Refer to ACI 302, IR-96, Table 6.21.)
2. If specified, follow the screed with a highway straightedge with the handle rigged to ride on the broader (6" [15 cm]) surface. Push the straightedge out and back once or twice only to further flatten the plastic slab.

## Application

1. If more than 1.0 lb/ft<sup>2</sup> (4.9 kg/m<sup>2</sup>) total shake will be applied, conduct in 2 or more applications. Apply and integrate one-half to two-thirds of the total amount on the first application and the remaining portion(s) on the subsequent application(s). Do not apply more than 1.0 lb/ft<sup>2</sup> (4.9 kg/m<sup>2</sup>) in 1 pass. Use an automatic spreader for the most efficient, economical, and precise method of applying a dry shake.

2. Allow the first application to absorb moisture, then reprofile the surface of the slab with an 8 – 10 ft wooden bullfloat or wood modified highway straightedge perpendicular to the direction of the screeding. (A wooden bullfloat is preferable, as it tends to open the slab rather than close it off, potentially trapping water under the dry-shake layer. To maintain flatness, avoid shaking the bullfloat handle.)

3. When the slab can support the weight of a person without footprints leaving more than a 1/8 – 1/4" depression, float the surface with a floating machine equipped with clip-on blades. Hand float the edges with wood floats or darbies. Reprofile in both directions using the modified highway straightedge.

4. Without delay, evenly apply the remaining portion of the product. Float the surface again with clip-on float blades. Reprofile, if needed. If desired, pan float, followed by finish troweling.

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.

5. FINAL TROWELING: When appropriate, conduct 2 – 3 mechanical trowelings. On the first troweling, keep the trowel blades as flat as possible without digging into the surface. As the surface "tightens" further, the trowel blades may be gradually raised to produce the desired surface finish. Follow with a final burnished troweling, if desired.

CAUTION: A burnished troweled finish may be slippery when wet.

## Curing

1. PROPER CURING IS VERY IMPORTANT.

Apply curing compound as soon as possible without the surface of the finished floor being marred.

Use an approved BASF membrane curing compound, strictly following the label directions.

## 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 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.

## For Best Performance

- DO NOT USE Mastercron® F<sub>F</sub> where conditions dictate the use of a metallic-aggregate surface hardener for even greater wear resistance. (See Masterplate® F<sub>F</sub> product data sheet.)
- DO NOT USE Mastercron® F<sub>F</sub> on areas exposed to acids, their salts, or to other materials known to attack or deteriorate Portland cement concrete.
- DO NOT USE Mastercron® F<sub>F</sub> where resistance to struck sparks on the surface is desired. (See Masterplate® DPS product data sheet.)
- Do not apply over concrete containing aggregate contaminated with salt or salt water.
- Do not apply over concrete containing more than 3% air content when tested by ASTM C 173, ASTM C 231 or ASTM C 138 procedures.
- To ensure consistent, proper coverage throughout the installation, position bags of material around the perimeter of the slab.
- Wood hand floats are recommended over magnesium hand floats.
- 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.
- Do not apply shake into standing bleed water or concrete that is bleeding excessively.
- Do not use exterior in areas subject to freeze/thaw cycles.
- 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.
- Proper timing is essential for successful installation of this product. Follow all of the specified procedures at the recommended time.
- Do not place dry shake on the slab without a roof cover. 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 the slab.
- Applying more than 1 lb/ft<sup>2</sup> in 1 pass has resulted 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 passes of additional shake.
- The application steps described in this product data sheet have proven effective for installing Mastercron® F<sub>F</sub> dry-shake surface hardener to achieve a "flat" (FF 25+) floor while maintaining the product's typical abrasion resistance. 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.
- 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 versions.
- 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® F<sub>F</sub>

### WARNING!

Mastercron® F<sub>F</sub> contains silica, crystalline quartz; portland cement; 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**

889 Valley Park Drive  
Shakopee, MN, 55379

[www.BuildingSystems.BASF.com](http://www.BuildingSystems.BASF.com)

**Customer Service** 800-433-9517

**Technical Service** 800-243-6739



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