Master Builders Technologies
Floor Products
INSTALLATION BULLETIN

Master Builders Technologies

MASTERPLATE® 200

METALLIC AGGREGATE, COLORED DRY SHAKE SURFACE HARDENER

IMPORTANT: Read This First

- All current Master Builders published literature, concerning MASTERPLATE® 200 surface hardener must be adhered to in all respects.
- MASTERPLATE 200 colored floors require extra care during construction. Furthermore, the newly constructed floor must be protected from staining and damage until the structure goes into service. Many factors, including jobsite conditions and applicator experience, can affect the final shade, color and appearance of a colored concrete floor.
- Consult appropriate sections of ACI Committee Report 302 Guide for Concrete Floor and Slab Construction for monolithic colored dry shake finishes.
- Store materials in dry place and do not use material if packaging is damaged.

PRE-JOB CONSIDERATIONS:

- Read and understand Data Sheet and Installation Bulletin completely before beginning installation.
- Arrange to have a pre-job conference with your local Master Builders Representative to discuss all aspects of the dry shake application. At that time, it is strongly advised that a copy of the proposed mix design be given to your Master Builders Representative. Cement, aggregate size, aggregate gradation, admixtures, etc. can all affect set time, and the ability of the dry shake to be incorporated into the slab.
- It is required that a 10 ft x 10 ft (3 m x 3 m) test application be made, using actual jobsite products and installation methods, by installation company, for Owner/Architectural approval prior to beginning installation.
- The following steps have been found to be an effective method of applying MASTERPLATE 200 dry shake surface hardener. However, ideal characteristic results of these, or any construction product, are highly dependent upon applicator experience, ambient conditions, proper equipment, labor and installation procedures, proper curing, etc.
- Place concrete floors under 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 the slab.
- Proper ventilation must be provided. Unvented flue and exhaust gasses from heaters and equipment can cause carbonated floor surface. This results in a weak and potentially dusting surface.
- Proper timing is essential for successful installation of this product. Care should be taken to follow given procedures at the recommended time.

RATE OF USE:

The standard application rate of MASTERPLATE 200 surface hardener is 1.0 to 2.8 lb/ft^2 (4.9 to 13.7 kg/m^2) of floor area. When application of dry shake is primarily for light reflective or color, standard application rate is 1.5 to 2.8 lb/ft^2 (7.3 to 13.7 kg/m^2) of floor area. If more than 1.0 lb/ft^2 (4.9 kg/m^2) total shake will be applied, apply in a minimum two pass application. If more than 2.0 lb/ft^2 (9.8 kg/m^2) total shake will be applied, apply in a minimum three pass application. For specific application rates, refer to the project specification or consult your local Master Builders Representative to discuss particular needs.

PREPARING THE BASE CONCRETE:

Pump, place or otherwise convey the base concrete at a slump that is not in excess of 5 in. (127 mm) for a slab on grade. (Please contact your local Master Builders Representative for special suspended slab application information.) After the concrete has been placed, immediately “screed”, then “bullfloat/highway straightedge” the surface. Allow bleed water to rise to surface.

Early moisture loss and rapid setting around the perimeter of the slab are typical, and should be monitored closely for proper timing of the floating operation. (If excessive bleed water is present, remove standing water by dragging a hose across the surface, use a squeegee or other approved method, and/or wait until the surface has lost its sheen.)

SHAKE APPLICATION:
After the water sheen has disappeared, just prior to initial set (a finisher with knee boards will leave approximately 1/8 to 1/4 in. {3.2 to 6.4 mm} impression), float the surface of the slab "open" with a mechanical float fitted with float shoes.

Master Builders always recommends a minimum two-pass process: Two-thirds to one-half of the total amount is applied and floated on the first application, and the remaining amount(s) on the succeeding applications. It is recommended that for more than a two-pass applications, apply dry shake proportionately (i.e.: three-pass application would be 1/3, 1/3 and 1/3. **Do not apply the dry shake into the bleed water.**

Apply the first application of the dry shake so that a uniform distribution of the surface hardener is obtained. (The most efficient, economical, and precise method of applying a dry shake is through the use of an automatic spreader. When the application of the surface hardener will be conducted by hand or square-tip shovel, apply each pass perpendicular to the previous application to better ensure complete coverage.)

Once the shake has absorbed sufficient moisture (the surface will somewhat darken), float (incorporate the dry shake into) the surface with a floating machine equipped with float shoes, or with a wooden bullfloat. (A heavy wood float is preferable as it tends to open the slab rather than closing it off and possibly trapping bleed water under the dry shake layer.) Hand float edges with wood floats and/or darbys.

As the floating of the first application of the dry shake proceeds, follow immediately behind this floating operation with the subsequent shake application.

Once the shake has absorbed sufficient moisture (the surface will somewhat darken), float the surface with a floating machine equipped with float shoes, or a wooden bullfloat. Hand float edges with wood floats and/or darbys.

If applicable, as the floating of the dry shake proceeds, follow immediately with the subsequent shake application.

> **NOTE:** When more than 1.0 lb/ft^2 (4.9 kg/m^2) 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, and should be monitored closely for proper timing of the floating operation.

TROWELING:
When appropriate, conduct 2 to 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.

As the surface "tightens" further, the trowel blades may be gradually raised to produce the desired surface. Remove all marks and pinholes in the final raised trowel application.

> **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, the use of CONFILM® evaporation reducer, or other Master Builders specifically approved materials, may be mist-sprayed onto the dry shake according to current installation instructions to prevent rapid moisture loss. MISUSE OF THESE MATERIALS CAN COMPROMISE COLOR AND PERFORMANCE OF DRY SHAKE.

CURING:
At the completion of final troweling and when the surface will not be marred, apply a Master Builders approved membrane curing compound, such as MASTERKURE® or MASTERKURE 200W curing compounds, according to directions.

After drying, protect hardened surface by covering with scuff-proof, non-staining builder paper or polyethylene.

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

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

> **NOTE: Colored floors require extra care during construction. Furthermore, the newly constructed floor must be protected from staining and damage until the structure goes into service. Many factors, including jobsite conditions and applicator experience, can affect the final shade, color and appearance of a colored concrete floor. Refer to Master Builders Floor Products Standard Color Card.**

JOINTS:
OPTION 1: Semi-Rigid Epoxy Joint Filler
After a minimum of 30 days*, apply a semi-rigid epoxy joint filler (i.e. MASTERFILL® 300 joint filler), or other joint filler material approved by surface hardener Manufacturer, in all non-dynamic control and saw cut construction joints. Place joint filler in a method complying with Manufacturer's instructions.

> ***NOTE:** Please refer to ACI 302R-96, Chapter 9.10. It is strongly recommended that the installation of the joint filler material be delayed as long as possible. Allowing the slab(s) to cure as long as possible prior to installing joint filler will reduce the amount of separation between the slab and the joint filler.

OPTION 2: Iron Armored Joints
For iron armored joints, use the following recommended procedure.

The concrete at the joints to be armored should be removed to a depth of 1/2 in. (13 mm) at the joint line and tapered back to the surface level over 4 in. (10.2 cm) width. Mix the MASTERPLATE 200 surface hardener with enough water to produce a stiff mortar. Hand float the area where the concrete has been removed, working up sufficient paste at the surface to assure an integral bond. Immediately place the MASTERPLATE 200 mortar into the prepared joint, then rescreed the area to level. Use 4.50 lb (2.0 kg) per lineal foot, which is 2.25 lb (1.0 kg) per foot for each side of the joint.

SUPPLEMENTAL INFORMATION:
- Do not install over concrete containing calcium chloride or concrete containing aggregate that has been saturated with salt water.
- Do not install over concrete containing more than 3% air content per ASTM C 138, ASTM C 173 or ASTM C 231.
- Do not install over superplasticized concrete unless carefully reviewed by a Master Builders Representative.
- Do not install where operating or service conditions dictate the use of a metallic aggregate surface hardener (i.e.: greater wear and impact resistance, spark resistance).
- Wood hand floats are preferred over magnesium floats.
- During the finishing operation, if any blistering occurs, flatten trowel blades immediately. Refloat to "open" floor and remove blisters. Delay raised troweling until no blisters occur.

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