

MASTERTOP® HPF
*MINERAL AGGREGATE DRY SHAKE SURFACE HARDENER
FOR THE HIGH PERFORMANCE FLOOR SYSTEM*

IMPORTANT: Read This First

- All current Master Builders published literature, concerning MASTERTOP® HPF surface hardener must be adhered to in all respects.
- MASTERTOP HPF mineral aggregate, dry shake surface hardener is specifically developed for the Master Builders High Performance Floor System. MASTERTOP HPF surface hardener is designed to be installed by Installation Partners ONLY. Contact the Master Builders Floor Product Manager for a current list of Installation Partners.
- Proper installation of the High Performance Floor System, by Installation Partners, is essential. Application of material includes a specially developed screening process to condition the floor. How this process is utilized (either a “light” screening which leaves most of the surface paste layer intact or a “heavy” screening which removes the surface paste layer and exposes aggregate) impacts the key benefits of the system, including aesthetics, coefficient of friction values, maintenance, and regeneration and/or replication of surface.
- MASTERTOP HPF 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 the ACI Guide 302 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, water content, aggregate size, aggregate gradation, admixtures, etc. can all affect set time, and the ability of the dry shake to be incorporated into the slab.
- If a 10 ft x 10 ft (3 m x 3 m) test application is specified, use actual jobsite products and installation methods, by installation company, for owner and/or architectural approval prior to beginning installation.
- The following steps have been found to be an effective method of applying MASTERTOP HPF 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.
- Proper timing is essential for successful installation of this product. Care should be taken to follow given procedures at the recommended time.
- Place concrete floors under roof. 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.

RATE OF USE:

Standard MASTERTOP HPF surface hardener application rate is 1.5 to 2.0 lb/ft² (7.3 to 9.7 kg/m²) of floor area. Place and integrate dry shake with a minimum two-pass process.

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 and/or 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. {3.17 to 6.35 mm} impression), open the slab by floating the surface of the slab 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. **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.)

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.

PLEASE NOTE: When more than 1.0 lb/ft² (4.9 kg/m²) 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 two (2) to three (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.

PLEASE 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. (PLEASE NOTE: 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 according to directions.

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

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

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

PLEASE 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.

For best results, keep the floor protected throughout the construction process.

After a minimum of 30 days, but prior to completion, the Installation Partner must return to the project to remove curing compound, and screen the floor, per manufacturer's instructions.

CONDITIONING OF FLOOR SURFACE:

After a minimum of 30 days, the Installation Partner will return to install the joint filler, remove the curing compound, and begin screening the floor to produce the surface appearance specified by the owner. (This stage is done at an average rate of $\pm 12,000 \text{ ft}^2$ {1,100 m²} per day.) Any installation of joint filler or screening that may need to be done prior to 30 days is the responsibility of the Owner (i.e., pre-caulking under cases, cooler, etc.).

As soon as possible after above stage, the regular daily maintenance of the floor should begin in order to achieve the desired floor conditioning required for store opening. This maintenance is the responsibility of the Owner's maintenance team. (Protection of floor surface after initial screening is critical.)

The final screening phase should be scheduled as close as possible to store opening. During this stage, the Installation Partner will return to the project to screen the floor, and address any final patching or "punch-list" work.

JOINT FILLING:

After a minimum of 30 days* apply an approved Master Builders joint filler in non-dynamic control and saw cut construction joints. Place joint filler in a method complying with manufacturer's instructions.

*Please note: 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.

SUPPLEMENTAL INFORMATION:

- MASTERTOP HPF dry shake surface hardener has been specifically developed for Master Builders High Performance Floor System. MASTERTOP HPF surface hardener is designed to be installed by High Performance Floor System Installation Partners ONLY.
- MASTERTOP HPF 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.
- Do not install over concrete containing calcium chloride or concrete containing aggregate that has been saturated with sea 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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