Technical Data Guide

MASTER® BUILDERS SOLUTIONS

3 | 03 35 00
**Concrete Finishing**

# MasterTop® 100

## Colored and natural mineral aggregate dry-shake surface hardener

**FORMERLY MASTERCRON®**

**YIELD**
Primarily for color: 1.5 – 2.0 lb/ft² (7.3 – 9.8 kg/m²)
Consult your Master Builders Solutions 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.

**SHELF LIFE**
18 months when properly stored

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

**VOC CONTENT**
0 g/L less water and exempt solvents

**DESCRIPTION**
MasterTop 100 is a ready-to-use cementitious dry-shake surface hardener incorporating specially sized and graded mineral aggregates. When evenly distributed and finished over freshly leveled and floated concrete, it adds color and improves the wear resistance of concrete floors.

**PRODUCT HIGHLIGHTS**
- Increases wear resistance, providing up to twice the serviceable life of concrete
- Natural option enhances flatness on flat and superflat construction (Ff 25+)
- Size graded aggregates and proprietary admixtures improve finishing and installation ease.
- Available in light-reflective formulations to reduce energy and lighting requirements
- Creates an easy to clean, high-density surface that is more resistant to liquid penetration.
- Built-in permanent color eliminates the cost of periodically painting or staining the floor
- Reduces surface wear and dusting, lowering routine maintenance and repair costs

**APPLICATIONS**
- Where an attractive, surface-colored concrete floor is desired
- Flat and Superflat floors
- 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
- Shipping and receiving areas
- Aisles and turnarounds

## 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 Master Builders Solutions 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 ⅛ – ¼" or 3 - 6 mm impression), float the surface of the slab "open" with a mechanical float fitted with float blades.
3. 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$^2$ (4.9 kg/m$^2$) in 1 pass. An automatic spreader is the most efficient, economical, and precise method of applying a dry shake.
4. 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. They may be used only for final floating to achieve flatter floors. Hand float edges with wood or laminated canvas-resin floats or darbies. Do not use magnesium floats, as this can lead to discoloration.
5. As the floating of the first dry-shake application proceeds, follow immediately with the subsequent shake application.
6. 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.
7. As the floating of the dry shake proceeds, follow immediately with a subsequent shake application, if appropriate.

## 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.
3. Under severe or rapid drying conditions (hot and/or windy), MasterKure ER 50 evaporation reducer or other approved materials may be mist sprayed onto the dry shake according to prevent rapid-moisture loss. MISUSE OF THESE MATERIALS CAN COMPROMISE COLOR AND PERFORMANCE OF THE DRY SHAKE.

## CURING

1. At the completion of final troweling and when the surface will not be marred by foot traffic, apply a Master Builders Solutions-approved membrane curing compound according to directions or fabric backed curing blankets (not burleen). For VOC-compliant requirements on colored floors consult your local Master Builders Solutions representative for recommendations.
2. After drying, protect hardened surface by covering with scuff-proof, non-staining 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, such as MasterSeal CR 190 or MasterSeal CR 100 in all non-dynamic control and saw-cut construction joints. Place the joint filler in compliance with manufacturer's instructions. 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

- To ensure consistent, proper coverage through- out 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 Master Builders Solutions representative to discuss all aspects of the dry-shake application. Give a copy of the proposed mix design and installation plan to your Master Builders Solutions 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 100 ft$^2$ (9.3 m$^2$) 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 MasterTop 100 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.
- Where greater wear dictates a metallic aggregate dry shake surface hardener, consult your Master Builders Solutions representative for more information on MasterTop 200 or MasterTop 210COR.
- 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. Master Builders Solutions always recommends a two-pass process. Apply and float ½ to ⅔ 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 MasterTop 100 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 MasterTop 100 where operating and service conditions require the added performance of a metallic-aggregate surface hardener. (Please refer to the MasterTop 200 or MasterTop 210COR 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 Master Builders Solutions Technical Services Manager.
- Make certain the most current versions of product data sheet and SDS are being used; visit www.master-builders-solutions.Master Builders Solutions.us to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by Master Builders Solutions personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

**HEALTH, SAFETY AND ENVIRONMENTAL**

Health, Safety and Environmental Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.com/en-us, e-mailing your request to mbsbscst@mbcc-group.com or calling 1(800)433-9517. Use only as directed.

**IN CASE OF EMERGENCY: Call CHEMTEL +1 (800) 255-3924 or if outside the US or Canada, +1 (813) 248-0585.**

**LIMITED WARRANTY NOTICE**

Master Builders Solutions Construction Systems US, LLC ("Master Builders") warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. MASTER BUILDERS MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of Master Builders. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. MASTER BUILDERS WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on Master Builders' present knowledge and experience. However, Master Builders assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. Master Builders reserves the right to make any changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.

**FOR PROFESSIONAL USE ONLY. NOT FOR SALE TO OR USE BY THE GENERAL PUBLIC.**

**Master Builders Solutions Construction Systems US, LLC** 889 Valley Park Drive, Shakopee, MN 55379
**www.master-builders-solutions.com/en-us**
**Customer Service** +1 (800) 433-9517
**Technical Service** +1 (800) 243-6739