

MasterTop 100

Non-Metallic Dry Shake Floor Hardener

MATERIAL DESCRIPTION

MasterTop 100 is a dark grey, pre-mixed, non-metallic dry-shake surface hardener made up of a hydraulic binder and specially graded mineral aggregates.

TYPICAL APPLICATION

- Aircraft hangars
- Basements and cellars
- Mechanical workshops
- Garage for light vehicles
- Storage rooms
- Corridors and halls
- Parking areas
- Loading platforms

LIMITATIONS

- Not for use where operating and service conditions dictate the use of a metallic aggregate surface hardener for greater abrasion and impact resistance.
- Not for use in areas exposed to acids and their salts or to materials known to rapidly attack or deteriorate Portland cement concrete.

PACKAGING

MasterTop 100 is packed in 25kg moisture resistant bags.

TYPICAL PROPERTIES*

Hardness (Aggregate):	7 (Mohs scale of hardness)
Average rate of brasion (Dorry Abrasion Machine):	0.24 gms/min
Curing:	Required

TYPICAL COMPARATIVE WEAR TESTS RESULTS

Depth of Wear (Thickness Loss) (mm):

Sample reference	Control average	MasterTop 100 average
5 minutes	0.33	0.20
10 minutes	0.61	0.30
15 minutes	0.77	0.42
20 minutes	0.95	0.50
25 minutes	1.15	0.61
30 minutes	1.34	0.71
35 minutes	1.55	0.81

Weight Loss (gm):

5 minutes	2.87	2.4
10 minutes	5.3	3.8
15 minutes	7.5	5.0
20 minutes	9.7	6.1
25 minutes	11.9	7.3
30 minutes	14.0	8.4
35 minutes	16.1	9.7

Tests results show that **MasterTop 100** significantly reduces the depth of wear. Tests were undertaken using a Dorry Abrasion Machine.

APPLICATION PROCEDURE SINGLE COURSE MONOLITHIC FLOORS:

The Concrete:

Use a placeable and finishable concrete mix of the required mix design with a minimum slump of 75mm and no more than 3% entrained air.

In accordance with ACI 201 - 2R77 & ACI 302-1 R-89 a well-proportioned Concrete Mix Design is essential. The concrete supplier should ensure that cement contents, w:c ratios, slumps are generally in accordance with the following minimum standard:

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Cement (White OPC)	Min 350 kg/m ³
W:C ratio	Max. 0.50 Min. 0.40
Slump	Ideally 75mm
Strength	Min 25 N/mm ²

Concrete should not segregate and bleed or contain more than 3% air. Do not use micro silica in the concrete as this can lead to problems with crusting when the dry shake is applied. MasterRheobuild or MasterPozzolith water reducing admixtures are recommended for concrete placement and optimum performance. Screeds to which **MasterTop 100** is to be applied, should have a minimum thickness of 75mm. Following placement, concrete should be levelled off with a straightedge and then vibrated. The surface is then floated with a wooden float ensuring that it is not closed. Any bleed water should be removed. (Avoid sponge type absorbents). Thereafter sprinkle **MasterTop 100** along edges of bays (approx. 80mm strips) where expansion and construction joints will be located. Float into surface using a wooden float.

MasterTop 100 is ideally applied to a surface which is neither too wet nor too dry. Ambient temperatures will dictate when the material is to be applied. Generally, in temperatures of 35-45°C a waiting period of 30-40 mins is recommended. This may need to be extended in temperatures of less than 35°C.

Using a raised trestle which spans the slab, the material is broadcast by hand onto the wet concrete surface. The application is carried out in two stages.

1. Apply two thirds of the required material to the concrete ensuring uniform distribution.
2. Allow applied material to absorb moisture from the concrete surface; a uniform darker colour will be apparent.
3. Using a wooden float or power float, work **MasterTop 100** into the concrete ensuring material becomes an integral part of the surface.
4. Apply the balance of material. Again wait until material has obtained a darker colour before floating with a wooden float or power float.
5. When surface is sufficiently firm enough to take the weight of a man leaving only minor indentations, **MasterTop 100** should be finished off by means of a power trowel. A smooth slip resistant finish can be

- obtained, but the surface should not be overworked.
6. If manual finishing with steel trowels is to be undertaken, this should take place before concrete becomes firm enough to take foot traffic.

Notes:

- For heavy-duty traffic areas, concrete with a minimum strength of 30N/mm² should be used at 28 days. Thickness of the slab and the type and amount of reinforcement are important design considerations.
- To minimize shrinkage cracking, consider the use of MasterKure Solutions water-reducing admixtures.
- Do not use calcium chloride in concrete over which shakes containing metallic aggregate and/or colouring pigments will be applied.
- At temperatures over 29°C, at low humidity or when placing concrete without protection from wind or sun, erect sunshades or windbreaks; the use of MasterKure curing products is essential.
- Do not use salt water or salt contaminated aggregate in concrete over which shakes containing metallic aggregate or colour will be applied.

Application Rate:

MasterTop 100 shall be applied at the following rates:

Heavy duty	7 kg/m ²
Medium duty	5 kg/m ²
Light duty	3 kg/m ²

Curing:

As soon the surface will not be marred by the application, apply the recommended curing compound for the type of surface and floor use involved: See separate product selection guide for curing compounds.

For Protection:

The area should be barricaded off after the curing compound is applied. As soon as the curing compound has dried, adequately cover the floor surface to prevent staining, discoloration or physical damage which may be difficult to correct. Alert other trades to the need for special protection against rolling or sliding heavy loads across the surface, oil drippings from pipe threaders, spillage of paint, plaster and mortar, acid washing of interior masonry walls, etc. Ensure that the covering is not damaged during the progress of the job.

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Cleaning:

Clean with water as soon as the equipment is no longer used and before the cementitious material starts to harden on the blades, trowels, etc.

Saw Cut Joints:

Saw cut the joints as soon as possible, without damaging the concrete.

STORAGE

Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction. Shelf life is 12 months from date of manufacture in the tightly closed original packages stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult Master Builders Solutions' Technical Services Department.

SAFETY PRECAUTIONS

- Do not apply over concrete containing calcium chloride or aggregate contaminated with salt or saltwater.
- Do not apply over concrete containing microsilica. Do not apply over concrete containing more than 3% entrained air.
- This product contains cement which may cause irritation. Avoid contact with eyes and prolonged contact with skin. If contact occurs wash thoroughly

with water and call a doctor. Keep product out of reach of children.

For further information refer to the material safety data sheet.

NOTE

Technical support, where provided, does not constitute supervisory responsibility. For additional information contact your local MB Construction Chemicals Solutions South Africa (Pty) Ltd representative. MB Construction Chemicals Solutions South Africa (Pty) Ltd shall not be liable for technical advice provided.

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* Properties listed are based on laboratory controlled tests.

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