

**Application Guide
for
MasterTop[®] dry shakes**

MasterTop[®] 200

Disclaimer

These suggestions may be followed, modified or rejected by the owner, engineer, contractor or their representatives since they, and not BASF Construction Chemicals are responsible for the planning and executing procedures appropriate to a specific installation. However, when the planned procedure differs from that discussed herein, the prospective user of **MasterTop 200** is urged to contact the local BASF Construction Chemicals representative.

Application of MasterTop 200 metallic dry shake

MasterTop 200 is a pre-mixed, ready to use product designed to be applied as a dry shake over freshly placed concrete to provide an iron armoured floor surface.

The concrete

- * Minimum Concrete Compressive strength - 30MPa.
- * Maximum Air Content - 3%.
- * No Chloride Admixtures.
- * Maximum Slump - 80mm.
- * Use BASF Construction Chemicals MasterPozzolith or MasterGlenium Admixtures.
- * Do not use salt water or salt contaminated aggregates.

Application Method

Placing, Vibrating and Screeding:

With the least possible handling, deposit concrete between previously placed screed points. Move concrete into place with square tipped shovels or other solid bladed tools. Do not use rakes. Vibrators when used should be inserted vertically and should not be used to move concrete. A small pencil vibrator helps to consolidate concrete at corners, sides of forms and bulkheads, particularly where keyed joints are involved. Screed off concrete with a true wooden or metal screed bar.

Applying the first shake by hand

Note – the shake can be applied in more than two applications especially if the application rate is high (more than 7Kg per m²)

Transfer the **MasterTop 200** Powder from the bags to pails of a size convenient for handling. Screed back concrete to approximately one arm's length (1-1.5M). Apply the **MasterTop 200** to this freshly screeded area. Once applied screed back another Arm's length and so on. Apply by hand, allow the MasterTop powder to sift through the gloved fingers while moving the hand to obtain a uniformly thick application over the surface. It is important not to allow heavy handfuls to drop onto the surface, these will sink into the surface and cause finishing problems. A light even spread first before the main shake will help to support the MasterTop more. Do not throw the powder or broadcast it with a shovel. Apply the shake as the concrete placement proceeds to areas adjacent to walls, forms, columns, and doorways. Apply $\frac{2}{3}$ of the total amount specified with the first shake. Apply as evenly as possible.

Application using a Mechanical spreader

Transfer the **MasterTop 200** Powder from the bags to the hopper of the spreader (approximately 2-3 bags maximum). The spreader should be pre-calibrated to deliver the correct amount of material per pass to achieve the desired loading. This can be done by setting up a piece of plastic sheet 2 meters long and running the spreader over it. The material on the sheet can be weighed and the application rate adjusted. Follow the screed at a distance of 2-5 meters. Apply the **MasterTop 200** to this freshly screeded area. Apply the shake as the concrete placement proceeds to areas adjacent to walls, forms, columns, and doorways. Apply 2/3 of the total amount specified with the first shake. Apply as evenly as possible.

Bull-floating the First Shake:

As soon as the shake has absorbed moisture from the concrete beneath it, as indicated by darkening of the surface (the surface must be totally dark with no dry patches showing) it can be bull-floated. Use a wooden bull-float or wooden hand float for limited areas. Bull-floating can be done from the edge so as not to slow down the concrete placement. With proper concrete slump and application only one or two passes of the bull-float will be required. Do not over float and bring concrete paste through the MasterTop to the surface, sinking the iron aggregate. This operation must be completed before any free moisture (bleed water) rises to the surface. Most contractors use magnesium bull floats today with these, care must be taken not to close the surface too much. A wooden bull-float is recommended.

Iron armoured joints should be started now –see last paragraph for method.

Edges:

The edges should be worked as soon as possible since they generally set up first. After placement of the concrete and removal of bleed water, float the edges of the slab open with wood hand floats. The working area at this time should be limited to an arm's length, to prevent disturbing the overall slab. After the surface has been opened by the floating procedure, shake 2/3 of the dry shake specified per m² evenly over the opened areas. With wooden float, float in the application by bringing enough moisture through the shake to completely incorporate the shake into the slab surface.

Application of Evaporation Retardant - MasterKure 111

When the first shake and bull-floating are finished and no other working of the surface is required until the finishing process, it might be necessary to protect the freshly placed surface from rapid evaporation of the moisture from the concrete. If the slab is exposed to direct sunlight, wind, low humidity or any other condition that will cause rapid surface drying, a fine spray of **MasterKure 111** should be applied onto the slab surface after bull-floating. The **MasterKure 111** should not be worked into the surface, but must be left untouched on the bull-floated surface, where it will have disappeared by the time of the first floating.

Floating the First Shake:

If there is free bleed water on the surface remove it just prior to floating. A rubber hose dragged slowly over the surface is the best method for removal of bleed water. Concrete adjacent to forms, columns, pits, doorways and walls must be hand wood or machine floated first because it stiffens faster than the concrete in the open areas. Float the open areas as soon as the concrete will bear the weight of a finisher and trowel machine, equipped with float shoes, without digging in or disturbing the level.

Machine trowel slowly, with float shoes almost flat. The floating operation must be timed so that the shake has absorbed the surface moisture and has become dark. Putting water on the surface should not be necessary and should be avoided.

Applying the Second Shake:

Immediately after the first floating, while the surface is still moist apply the last 1/3 of the application. This has to be done very quickly and normally requires a second person following behind the trowel machine to apply the product. As soon as the surface has darkened trowel back over. Trowel just enough to bring the moisture through. Apply the second shake at right angles to the first, for a more even application.

Finishing:

When the slab surface loses some of its "Sheen" finishing operations should begin. Once the edges and areas around columns, walls and doorways are trowelled, trowel the slab either by hand or with power finishing machines with finishing blades, not float shoes. Keep all blades as flat as possible. Do **not** add water to aid finishing because adding water will result in a weakened surface and possible delamination of finished surface. It should not be necessary if the timing is correct. Adding water will also result in patchy areas in coloured applications.

Curing:

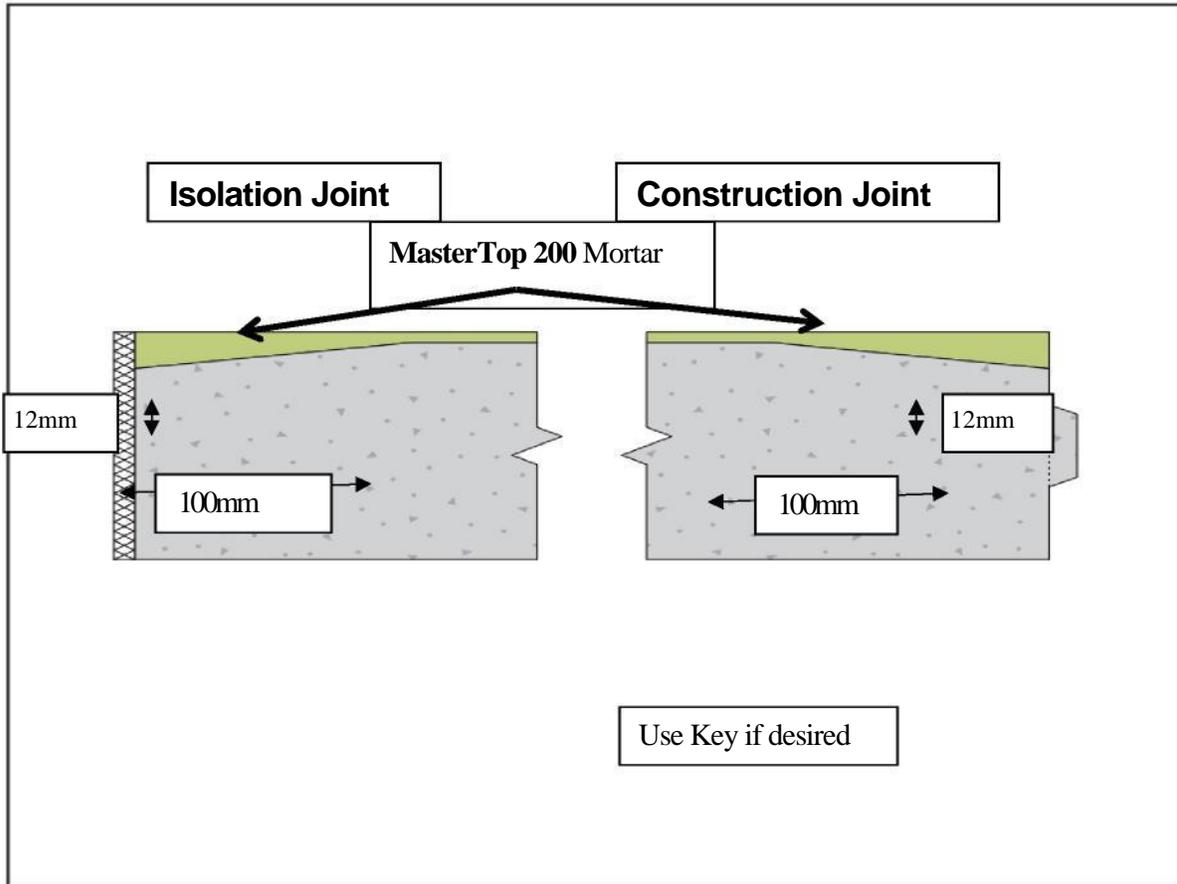
As soon as the surface will not be marred by the application, apply **MasterKure 404** curing compound by spray or roller in accordance with the application directions. Do not cure with water or plastic sheeting.

Method for creating Iron armoured joints:

Remove any bleed water at edges before proceeding with joints. The concrete at the joints to be armoured should be cut down and removed to a depth of 12mm at the joint line or form, tapering back to surface level at 100mm from the joint line. This area should then be floated with a wooden hand float working up sufficient paste at the surface to assure an integral bond of the mortar to the fresh slab. Mix **MasterTop 200** with enough water to obtain a stiff mortar consistency. Place, level off and wood float the mortar while keeping the float perpendicular to the joint at all times. Do not pack the joint, use only enough material to fill the void.

When armouring control joints, it is imperative that the placement of the mortar be on the centre line of the designed joint location. Once the exact location of the joint centre line is marked either by string or chalk line, remove the concrete down to about 12mm in the middle and feather to about 150mm from the centre. Apply the mortar made from the **MasterTop 200** to both sides of the control joint and wood float off. Continue with the dry shaking as required. The application rate is 3.3kgs per lineal metre per one side of joint. Two sides (as shown below) are 6.6kgs per lineal metre

Detail of iron armoured isolation & construction joints



Summary MasterTop 200 application

- Set out bags the day before (use 3 bag piles) to calculated grid.
- Concrete delivered at nominal 80mm slump.
- Place and compact concrete (do not use rakes).
- Screed concrete to levels.
- Guarantee no bleed water.
- Iron armoured joint commence after bull float.
- Apply first bag of **MasterTop 200** by transferring shake into buckets and applying even over the concrete generally in the same direction by allowing the powder to sift through fingers.
- Apply first around doors, forms etc. and wood float where moisture has been absorbed (between 30 seconds & 3 minutes).
- Bull float after shake has been applied and has absorbed moisture (observed by darkening).
- If required immediately after floating spray surface with **MasterKure 111** (diluted 1:9 with water at 50/100 m²/litre). This can be done up to several times in extreme conditions.
- When concrete will take weight of finisher trowel the surface with blades set flat (use float shoes).
- Immediately behind trowel apply final application of dry shake at right angles to original application.
- Trowel again after shake has darkened due to absorption of moisture (do not spray on water or **MasterKure 111**).
- Finish trowel.
- Cure.
- Protect.



Figure 1: Screeding the concrete



Figure 2: Screeded concrete prior to application of the shake



Figure 3: Applying the shake into the freshly screeded concrete



Figure 4: See how the shake soaks up the moisture from the fresh concrete



Figure 5: Allow the shake to fall onto the surface from above



Figure 6: Ensure that the correct amount is applied per square meter.



Figure 7: try to keep the amount even across the slab



Figure 8: Fill in the areas which have less shake



Figure 9: apply using the "feeding the chooks" method



Figure 10: shake prior to trowelling notice the colour is uniformly dark.



Figure 11: Using a bull float to flatten and bring the moisture to the surface.



Figure 12: hand trowelling to work the shake in



Figure 13: after bull floating power trowel the shake



Figure 14: Keep the blades flat to consolidate the shake



Figure 15: Work till you get a dense smooth surface.



Figure 16: finished floor prior to curing.



Figure 17: set out bags prior to delivery of concrete



Figure 18: Apply shake directly behind the screed



Figure 21: Spreader applying the shake

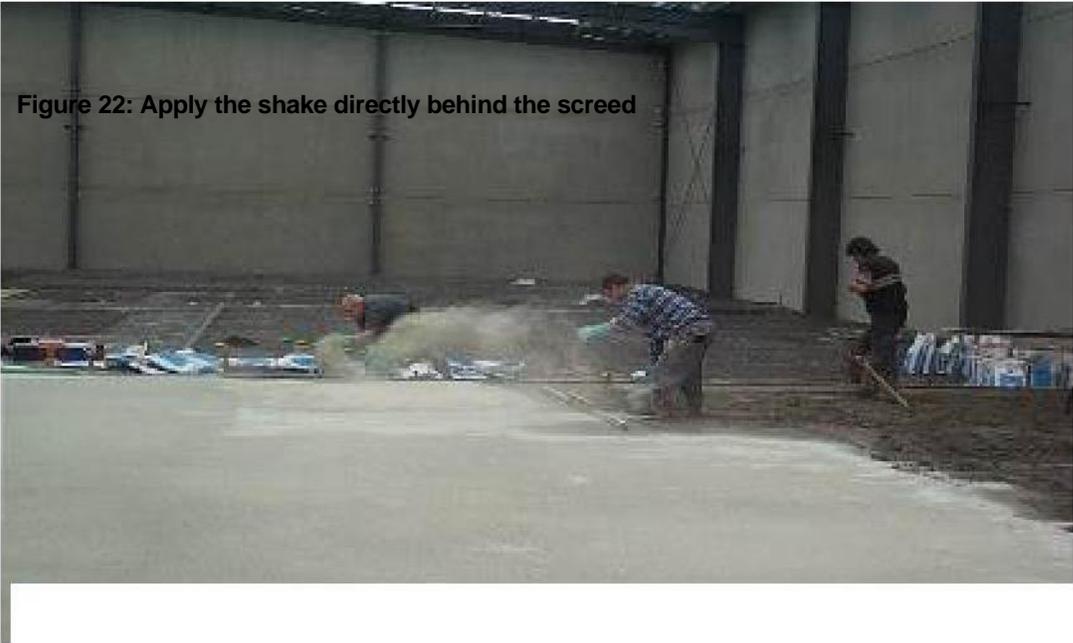


Figure 23: Applying the shake in the "feeding the Chooks " method



Figure 24: Once the concrete will not be marred use the helicopter to smooth the shake



Figure 25: Working the dry shake in

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RESPONSIBILITY**

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