MasterTop® 330

Heavy duty high strength iron aggregate topping

PT. BASF INDONESIA

CONSTRUCTION CHEMICALS
PERFORMANCE FLOORING

APPLICATION GUIDE

MasterTop 330
Heavy Duty Metallic-Aggregate Floor Topping

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1. APPLICATION OF MasterTop 330 HEAVY DUTY METALLIC AGGREGTE FLOOR TOPPING

- Key areas subject to heavy traffic, impact, abrasion and continuous wear
- Loading docks
- Waste transfer facilities
- Truck or heavy equipment repair areas

NOTE:
- Do not add cement, aggregate or admixtures
- Store in a dry place
- Do not use if bag is damaged

2. DIRECTIONS FOR PLACING MasterTop 330

These steps have been found to be an effective method of applying MasterTop 330 to obtain a floor which is highly impact and abrasion resistant. However, ideal characteristic results of these, or any construction product, are highly dependent upon ambient conditions, adequate labour, proper equipment, surface preparation etc.

Arrange to have a pre-job conference with your local BASF Construction Chemicals technical representative to discuss all aspects of the MasterTop 330 application, surface preparation, etc.

NOTE:
Under rapid drying or hot, ambient conditions, use MasterKure 300 CR for evaporation retardant, according to label instructions, to prevent rapid moisture loss from the MasterTop 330. Temporary roof or shelter during construction works might be needed due exposure of weather, rain and wind.

3. ESTIMATING DATA

One 25 kg bag mixed with 2.4 litres of potable water provides approximately 0.0077 m^3; of screedable topping at a 120 mm-150 mm slump. 3 x 25 kg bags will yield 1 m^2 & 23 mm thick approx.

Approximate coverage:

Desired thickness	1 x 25kg bag covers	Quantity required per m
13mm (min.)	0.59 m^2	45 kgs
25mm	0.31 m^2	80 kgs
40mm (max.)	0.19 m^2	130 kgs

4. MIXING

Using a powered mortar mixer, add ¾ of the mixing water followed by the MasterTop 330 in a slow, steady stream, then mix for approximately two to three minutes. Add remaining water and continue mixing for a total of five minutes, for a homogenous mix at the recommended slump.

The use of ice water will reduce the amount of water necessary for a given consistency, and will result in increased working time and strength of the topping. Do not use water in an amount or at a temperature that will cause bleeding or segregation.

Discharge the topping from the mixer for immediate placing and screeding. If lumps are present, remove.

5. SUGGESTED PROCEDURE FOR APPLYING OVER EXISTING, PROPERLY ROUGHENED, HARDENED CONCRETE

To achieve proper bond of MasterTop 330 the surface of the concrete should show a 5 mm amplitude or at least CSP 6 on ICRI surface profiles. All laitance and contaminated areas must be removed; coarse stone and the aggregates shall be exposed. This is best achieved by multiple passes with a shot blast machine with heavy shot, a scabbler or scarifier.

The concrete surface should be tested for tensile bond pull off strengths per BASF Construction Chemicals recommendations. The minimum tensile bond pull off strength shall not be less than 2.00 Mpa and substantial coarse aggregate fracture shall be revealed and minimum compressive strength shall not be less than 35 Mpa.
The test must be performed in several locations on each slab section scheduled for placement of MasterTop 330.

The temperature of the contact surfaces should be such that the bonding material can be applied and cured as per BASF Construction Chemicals recommendations.

Treatment of all joint edges and the perimeter of the pour can be performed in one of two fashions.

i) Fasteners should be staggered 100 mm to 150 mm from the edge, 300 mm to 450 mm on entre, as shown in **Diagram 1**. The anchors shall be tested for solid embedment

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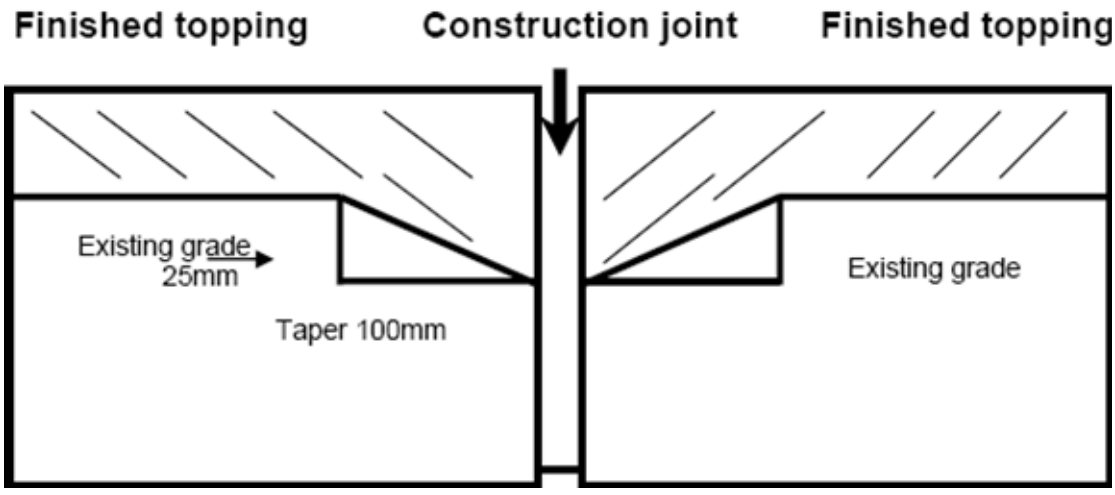
OR

ii) Mechanically remove the substrate concrete 25 mm deeper than the specified topping thickness, tapered over a 100 mm width as shown in Diagram 2. Rough texture of the substrate must be provided. Anchors to be placed at 450 mm centres and 50 mm from joint edge to prevent thick edges curling.

Diagram 2



Prior to the MasterTop 330 placement the concrete shall be tested in accordance with ASTM D-4263, (Indicating Moisture in concrete by the Plastic Sheet Method). Excessive moisture must be force-dried to produce a condition suitable to where the bonding material will achieve the proper bond strength.

BASF Construction Chemicals MasterTop 1140 liquid epoxy primer and bonding agent shall be used to bond the topping to the existing concrete. Mix according to label instructions and brush or roll on to the concrete surface. Place the topping while the epoxy is still tacky. On rough and dense surfaces MasterTop 1140 consumption will be 0.3-0.5 litre/m^2.

6. PLACING AND FINISHING

Place and screed the MasterTop 330 in sections that will assure that the finished elevation is maintained. Because of the relatively high slump of MasterTop 330, a roller or pipe screed is the preferred method for obtaining a uniformly flat, dense surface without excessive segregation from vibration. Tamp the topping thoroughly with a jitterbug to consolidate and ensure contact with the bond surface. Recommended wide of section is max 2 m and cut every 6 m long according joint spacing; (see sub topic no 7 about Joint)

As soon as the MasterTop 330 will support an operator and machine without leaving impressions on the slab or creating excessive fines at the surface, float with a mechanical trowelling machine equipped with float shoes. For small areas, floating with hand tools is acceptable.

Following one machine floating, proceed with one or two normal trowelling operations to obtain a hard steel trowel or burnished trowel finish. Trowelling operations should be timed and blade angle adjusted to avoid blistering. Periodically measure the topping thickness, especially in the centre of the slab.

7. JOINTS

Joints and proper joint spacing is necessary to limit the cracking tendencies of the product due to shrinkage (contraction joints), movement between the floor and other structural members (isolation joints) and concluding pours from one day to another (construction joints).

Procedures for base slab joint location, spacing, depth etc. should be discussed with BASF Construction Chemicals personnel. Maximum joint spacing should not exceed 6 m. Base slab joints must be matched in the MasterTop 330 topping by forming or other suitable means.

NOTE:
For MasterTop 330 placement on hardened slabs when joint spacing exceeds 6 m, intermediary joints must utilise anchors. See your local BASF Construction Chemicals technical representative for further recommendations.

8. CURING

Moist curing is necessary to attain the design strength, surface impermeability and wear resistance of the MasterTop 330. After finishing is complete and when the surface will not be marred by foot traffic, continuous mist or fog spray the surface of the topping with water and

cover with weighted polyethylene sheeting for a minimum of 7 days. When mist spraying is not possible use soaker hoses with two layers of saturated burlap or similar type material and cover with polyethylene for a minimum of 7 days.

After 7 days of wet curing, and while the MasterTop 330 is still moist, remove excess water with a squeegee. Immediately apply two coats of MasterKure 300 CR in cross directions using a short nap roller with consumption 5 m^2/ltr/coat.
The use of a roller will ensure complete coverage of the MasterTop 330. Do not spray curing compound and do not allow the MasterTop 330 to dry out prior to the application of the curing, because good application of curing compound is essential for future performance of MasterTop 330.

9. SUPPLEMENTAL INFORMATION ON MasterTop 330

During raised trowelling, if any blistering occurs, flatten trowel blades immediately to remove blisters. Wait until raised trowelling does not produce blisters.

For information on applications that would require special considerations, contact your local BASF Construction Chemicals technical representative.

Because MasterTop 330 contains iron aggregate it is an excellent conductor of both hot and cold temperatures. It can vary in dimension much more quickly than the underlying concrete thus causing potential bond failure. For these reasons, including freeze-thaw and potential oxidation of the aggregate, special care should be taken for MasterTop 330 use outdoors. Special precaution must be taken to mitigate these environmental conditions. (See your local BASF Construction Chemicals technical representative for specific details.)

10. CAUTION

MasterTop 330 contains Portland cement, which in combination with water may cause skin irritation, rash and alkali burns. Do not wear contact lenses when working with this product. Remove clothing and wash before reuse. Keep product out of the reach of children.

For information on personnel protective equipment, first aid and emergency procedures, and water disposal methods, refer to the product bag or Material Safety Date Sheet (MSDS) on the job site.

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