

# MasterTop 542 ECC

Water based, self smoothing epoxy-cementitious floor topping.

## DESCRIPTION

**MasterTop 542 ECC** is a three-component self-smoothing floor topping based on epoxy-cementitious system, which on mixing yields a breathable, high performance floor topping. The finished topping exhibits temporary moisture barrier.

**MasterTop 542 ECC** is formulated for underlay application as temporary moisture barrier for resin based floor finishes.

## FIELDS OF APPLICATION

- Hospitals, laboratories and medical clinics. Clean rooms and aseptic areas
- Packing and storage areas. Automotive assembly areas & showrooms
- Aircraft hangars & auxiliary areas
- Refurbishing granolithic floor toppings

## FEATURES AND BENEFITS

Water based - no fire hazard nor toxic fumes. Self smoothing - easy to spread and finish. Excellent mechanical strengths. Seamless - can easily maintain hygienic condition. Breathable – excellent adhesion and finish.

## PROPERTIES

Mixed density	: 2.10 kg/litre
Mixing Ratio, by weight	: 1 (B) : 3 (H) : 17 (F)
Pot Life	: 20 minutes at 25°C : 10 minutes at 40°C
Setting time/Foot traffic	: 24 hours at 25°C
Overcoat time	: 24 to 72 hours
Vehicular traffic	: 48 hours at 25°C
Compressive strength (ASTM C579)	: 20 MPa at 1 day : 30 MPa at 3 days : 35 MPa at 7 days : 45 MPa at 28 days
Flexural strength (BS 6319 Part 3)	: 10 MPa at 28 days
Abrasion resistance H22 wheel (ASTM D4060, 1000 cycles) CS17 wheel	: <700 mg : < 70mg
Hardness, Shore D (ASTM D 2240)	: > 80
Adhesive bond strength to Concrete (ASTM D4541)	: 1.5 MPa (concrete failure)

## Specification Clause

The self-smoothing epoxy-cementitious topping shall be **MasterTop 542 ECC**, water based, 3 component system consisting of graded fillers to provide the toughness. The system shall consist of MasterTop P642 ECC, water based epoxy primer and top coat of **MasterTop 542 ECC**. Overall the system shall be able to offer good abrasion resistance; shall not exceeding wear loss of 0.7 mg/cycle when subjected to H22 test wheel on Taber apparatus as per ASTM C501. Also product shall have compressive strength minimum of 35 MPa at 7 Days, 45 MPa at 28 Days and Flexural strength minimum of 10 MPa at 28 Days. The system shall offer minimum adhesive bond strength to concrete substrate of 1.5 MPa, when tested to ASTM D4541 test method.

## Directions for use

Temperature Requirements:

Substrate temperatures : 15°C - 35°C

Material temperatures: 15°C - 30°C

Very low or very hot temperatures will make application more difficult and careful consideration should be given to storage of materials. In the cold weather conditions, pre-condition materials by keeping it in a heated room. In hot weather conditions, some form of air-conditioned storage is required. Pre-conditioned materials at 20- 25°C will reduce the possibilities of flash/slow setting and other defects.

## APPLICATION

### Surface Preparation

Floor surface should be sound and clean. Remove all surface laitance, oil, grease or any defective/weak concrete that will reduce the bond of the **MasterTop 542 ECC** to the substrate.

Grind down the surface high points and fill in the pits with **MasterBrace 1438**.

Prepare the surface to a texture similar to medium grit sand paper using shot blasting, grinding or high pressure water jetting. Vacuum clean the surface. For blemish free finish prime the surface to completely seal it using MasterTop P642 ECC.

Priming is a must on porous/absorbent surface.

Pour the base completely into the Hardener. Mix using a slow-speed drilling machine fitted with a wing paddle or paint stirrer. Apply onto the prepared surface is

# MasterTop 542 ECC

absorbent with a stiff brush in a circular motion forcing the primer into the substrate. Allow it to dry. If the surface looks patchy due to absorption, apply one more coat of the primer.

## Mixing

Mix mechanically, using a slow-speed drilling machine fitted with appropriate paddle – wing paddle or paint stirrer for mixing plain resin system and helical paddle for resin system with Aggregate component. During all mixing operations, ensure that the mixing head is totally immersed. Add the Base to Hardener and mix for 1-2 minutes. Then add the Aggregate component, whilst continuing to mix for 4 - 5 minutes or until the mixed material is lump free.

## Placing

Apply the mixed **MasterTop 542 ECC** within 2 – 4 hours of priming and before primer becomes tack-free.

**MasterTop 542 ECC** can be applied to a thickness of 2mm to 4mm to a self-smoothing finish. When applied on to the freshly placed concrete, the texture will replicate that of concrete finish.

To achieve a smooth finish, it is necessary to have a flat, smooth substrate. Pour the mixed **MasterTop 542 ECC** over the substrate and spread with a notched trowel or a pin screed to the desired thickness (2mm to 4mm). Roll the coating with spiked roller to expel air and achieve a smooth finish. Ensure the applicator is wearing spiked shoes until the completion of the job. Rolling should continue until all air is released and a uniform finish is obtained.

**Note:** *To get more liquid consistency, 1kg of filler can be reduced at the time of mixing. Removal of maximum 1kg filler will not adversely affect the physical & mechanical properties of the product.*

In low humid and hot climate, dry-shake sprinkling of MasterTop SRA No. 1 (0.1 ~ 0.3 mm graded Quartz filler) shall prevent rapid drying.

**MasterTop 542 ECC** should be top coated within 1 – 3 days of time with MasterTop P642 ECC & MasterTop toppings.

## Cleaning

Remove uncured **MasterTop 542 ECC** from tools and equipment using water before it sets.

## ESTIMATING DATA

MasterTop P642 ECC: 4-8 m<sup>2</sup>/kg, depending on condition of substrate. One 21kg pack of **MasterTop 542 ECC**, on mixing, yields 9.75 litres volume and shall cover 4.75 m<sup>2</sup> at 2mm average thickness. Consumption depends on the finish required and the substrate texture.

## PACKAGING

MasterTop P642 ECC is supplied in 4 kg pack consisting of Base & Hardener.

**MasterTop 542 ECC** is supplied in 21 kg pack consisting of Base, Hardener & Filler.

## SELF LIFE

Store under cover, out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment.

Shelf life is 6 months when 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 please consult your local Master Builders Solutions Construction Chemicals representative.

## PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website

## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication is based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by commonwealth or State legislation. The owner, his representative or the contractor is responsible for checking the suitability of products for their intended use.

## NOTE

Field service where provided, does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions are responsible for carrying out procedures appropriate to a specific application.