

MasterEmaco® T 545

Rapid setting trafficable repair mortar

DESCRIPTION

MasterEmaco T 545 is a one component concrete repair and anchoring material which sets in 15 minutes and will accommodate rubber-tyre traffic 45 minutes after placement. This product bonds to both concrete and masonry and can be used indoors and outdoors for highway and heavy industrial repair jobs.

RECOMMENDED USES

- Bridge deck and highway overlays
- Concrete pavement joint repairs
- Airport runway light installations
- Full depth structural repairs
- Expansion device nosings
- Anchoring steel bridge and balcony railings
- Commercial freezer room repairs
- Loading dock repairs
- Parking deck and ramp repairs
- Heavy industrial repairs

FEATURES AND BENEFITS

- **Wide temperature application range** – Suitable for Asia Pacific climates from very hot to very cold
- **Rapid strength gain** – Fast return to service only 45 minutes
- **Chemically bonds to concrete** – long life of patches in trafficked areas
- **Chemically resistant** – Unaffected by deicing salts
- **Thermal expansion/contraction rate similar to concrete** – Suitable for freeze thaw conditions
- **Minimal drying shrinkage** – Long term volume stability and stability of patch
- **Cement color** - Patches have texture and look of concrete

PERFORMANCE DATA

Compressive Strength (ASTM C 109 Mod)	@ 2°C	@22°C
@ 1 Hour	-	20 MPa
@ 1 Day	10 MPa	40 MPa
@ 28 Days	48 MPa	48 MPa

Modulus of Elasticity (ASTM C469)	7 D	28 D
	28.8 GPa	31.4 GPa
	33.8 GPa	36.2 GPa

Freeze/Thaw Durability Test (ASTM C 666, Procedure A modified)

Dynamic Modulus after 300 Cycles	> 80%
----------------------------------	-------

Sulfate Resistance (ASTM C 1012)

Length Change after 52 Weeks	0.9%.
------------------------------	-------

Typical Setting Times at 22°C (Gilmore ASTM C 266 modified)

Initial	10-15 Min
Final	12-20 Min

Coefficient of Thermal Expansion (CRD-C 39-81)	12.8 x 10 ⁻⁶ / °C.
--	-------------------------------

Flexural Strength at 1 Day (ASTM C 78 modified) 75mm x 100mm x 406mm Prisms

Plain Mortar	3.8MPa
Mortar with (10mm) pea gravel	4.2MPa
Mortar with (10mm) crushed angular non-calcareous hard aggregate	4.5MPa

The performance data is typical and based upon controlled laboratory conditions. Actual performance on the job site may vary from these values based on actual site conditions

APPLICATION

Surface Preparation

Surfaces should be structurally sound, clean, and free from loose particles, oil, grease, cement laitance, mold release agents, curing membranes, and other contaminants must be removed by wet grit blasting, high pressure water jetting (approx. 150 bars) or such other effective methods.

Surface carbonation inhibits chemical bond. Apply an indicator to the prepared surface to determine if carbonation is present.

To obtain permanent type repairs the edge of the patch should be square cut and to a depth of not less than 10mm.

MasterEmaco® T 545

Mixing Instructions

Add all the water to a clean bucket and add the **MasterEmaco T 545** and mix for approximately 1 to 1½ minutes and place. Use neat material for patches less than 25mm in depth or width. For deeper patches, 20kg bag **MasterEmaco T 545** must be extended by adding up to 12kg of properly graded, dust-free, hard, rounded aggregate. (Do not use calcareous aggregate made from soft limestone. Test aggregate for fizzing with 10% HCl. If fizzing occurs, aggregate is unsuitable for use with **MasterEmaco T 545**).

MasterEmaco T 545 will not freeze at temperatures above -7°C.

ESTIMATING DATA

Note: WATER CONTENT IS CRITICAL.

A 20kg bag of **MasterEmaco T 545** mixed with a maximum 1.4 litres of water produces a volume of approximately 0.01m³(10L). A 60% extension (12kg/bag) using 14mm, rounded, sound aggregate produces a volume of approximately 0.014m³(14L).

CURING

MasterEmaco T 545 should air dry for proper cure. **Never** wet cure **MasterEmaco T 545**.

CLEANING

Clean tools and equipment with water, before the **MasterEmaco T 545** hardens.

PACKAGING

MasterEmaco T 545 is packaged in 20kg moisture resistant bags.

SHELF LIFE

MasterEmaco T 545 has a shelf life of 12 months. Store out of direct sunlight, clear of the ground on pallets protected from rainfall.

PRECAUTIONS

- Do not add sand, fine aggregate or Portland cement to **MasterEmaco T 545** concrete.
- Do not use **MasterEmaco T 545** for patches less than 13mm deep. WATER CONTENT IS CRITICAL. Do not deviate from the recommended water content printed on the bag.
- When mixing or placing **MasterEmaco T 545** in a closed area, provide adequate ventilation.
- Do not use **MasterEmaco T 545** as a precision, non-shrink grout.
- Never featheredge. For best results, always sawcut the edges of a patch.
- Moisture loss during the first three hours after placement must be avoided. Protect **MasterEmaco T 545** with plastic sheeting or curing compound in the event of rapid evaporation conditions. Do NOT wet cure.
- Do not place **MasterEmaco T 545** on a hot (32°C) dry substrate.
- When used in contact with galvanized steel or aluminum, consult your local Master Builders Solutions technical representative.

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

® = registered trademark of a MBCC Group member in many countries of the world

MAP# MasterEmaco T 545 v2-12.2020

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are 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 law. The user 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 orally 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.

MB Solutions Singapore Pte Ltd

1 Harbourfront Avenue #07-07/08
Keppel Bay Tower, Singapore 098632
Tel : +65 6232 4888