

MasterEmaco T 545

Rapid setting trafficable repair mortar

Material 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.

Areas of Application

- 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

Characteristics and Benefits

- Wide temperature application range – suitable for 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 trafficed areas.
- Thermal expansion/contraction rate similar to concrete – suitable for freeze thaw conditions.
- Minimal drying shrinkage - long term volume stability and stability of patch
- Cement colour - patches have texture and look of concrete.

Properties

Typical Compressive Strengths – MPa AS2073 Part 10 (Modified)		
	2°C	22°C
1 hour	-	20
1 day	10	40
28 days	48	48

	7 days	28 days
Modulus of Elasticity (ASTM C469)	28.8 GPa	31.4 GPa
	33.8 GPa	36.2 GPa
Freeze/Thaw Durability Test (ASTM C 666, Procedure A modified)	Normal Relative Dynamic Modulus greater than 80% after 300 cycles.	
Sulfate Resistance (ASTM C 1012)	Length change after 52 weeks – 0.9%.	
Typical Setting Times (Gilmore ASTM C 266 modified) 22°C	Initial – 10 to 15 minutes Final – 12 to 20 minutes.	
Coefficient of Thermal Expansion (CRD-C 39-81)	12.8 x 10 ⁻⁶ /°C.	

Flexural Strength (ASTM C 78 modified) 75mm x 100mm x 406mm prisms at 1 day strength	
MasterEmaco T 545 mortar	3.8MPa
MasterEmaco T 545 mortar with (10mm) pea gravel	4.2MPa
MasterEmaco T 545 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.

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Application

Surface Preparation

Surfaces should be structurally sound, clean, and free from loose particles, oil, grease, cement laitance, mould 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. A surface profile of CSP 5 or greater is desired.

Surface carbonation inhibits chemical bond. Apply an indicator to the prepared surface to determine if carbonation is present. To obtain permanent repairs the edge of the patch should be square cut to a depth of not less than 10mm.

Mixing

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. Do not use **MasterEmaco T 545** for patches less than 13mm deep. For deeper patches, **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**). Do not add sand, fine aggregate or Portland cement to **MasterEmaco T 545**. **MasterEmaco T 545** gives off ammonia fumes when mixed with water and care should be taken to provide adequate ventilation. **MasterEmaco T 545** is slightly acidic once mixed with water and will mark aluminium, galvanized metals and glass so care should be taken to avoid contact. **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).

MasterEmaco T 545				
L	Thickness in mm /m ²	m ³	bags /m ³	m ² /mm thickness
10	10mm	(0.01)	100	10 m ²

Curing

MasterEmaco T 545 should air dry for proper cure. In hot and dry conditions prevention of moisture loss should be done by covering with plastic sheeting. 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.

Storage & 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

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



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Disclaimer

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