

# MasterEmaco® T 545

## NOTES TO SPECIFIERS:

THE PURPOSE OF THIS GUIDE SPECIFICATION IS TO ASSIST THE SPECIFIER IN DEVELOPING A PROJECT SPECIFICATION FOR THE USE OF BASF COSTRUCTIONS SYSTEMS PRODUCTS.

THIS GUIDE SPECIFICATION WILL NEED TO BE CAREFULLY REVIEWED FOR APPROPRIATENESS FOR THE GIVEN PROJECT AND EDITED ACCORDINGLY TO COMPLY WITH PROJECT-SPECIFIC REQUIREMENTS.

## PART 1 - GENERAL

### 1.1 SUMMARY

#### A. Section Includes:

1. Application of 1-component, shrinkage-compensated, cement-based micro concrete with extended working time, designed for repairing horizontal concrete surfaces.

### 1.2 SUBMITTALS

#### A. Product Data: Submit manufacturer's technical data sheets and Safety datasheet information for each product.

#### B. Quality Control Submittals:

1. Provide protection plan of surrounding areas and non-cementitious surfaces.

### 1.3 QUALITY ASSURANCE

#### A. Qualifications:

1. Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products.
2. Manufacturer Qualifications: Company shall be ISO 9001:2000 Certified.



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3. Applicator Qualifications: Company with minimum of 5 years experience in application of specified products on projects of similar size and scope, and is acceptable to product manufacturer.
  - a. Successful completion of a minimum of 5 projects of similar size and complexity to specified Work.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.
- B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Store tightly sealed materials off ground and away from moisture, direct sunlight, extreme heat, and freezing temperatures.

#### 1.5 PROJECT CONDITIONS

- A. Environmental Requirements:
  1. Ensure that substrate surface and ambient air temperature are minimum of -7 C and rising at application time and remain above -7 C for at least 24 hours after application.
  2. Do not apply material if rain, fog, and mist are anticipated within 2 hours after application.
  3. Allow surfaces to attain temperature and conditions specified before proceeding with mortar application.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products from the following manufacturer:

BASF Australia Pty Ltd

Construction Chemicals

11 Stanton Rd

Seven Hills 2147

Customer Service: 1300 227 300

Internet: [www.master-builders-solutions.BASF.com.au](http://www.master-builders-solutions.BASF.com.au)

- B. Specifications and Drawings are based on manufacturer's proprietary literature from BASF.

## 2.2 MATERIALS

- A. One-component, shrinkage-compensated, cement-based mortar with extended working time for repairing horizontal concrete surfaces.

1. Acceptable Product: **MasterEmaco T545** by BASF.

- B. Performance Requirements: Provide mortar material complying with the following requirements:

COMPRESSIVE STRENGTH	20°C	22°C
1 hour	0 Mpa	20 Mpa
1 day	10 Mpa	40 Mpa
28 days	50 Mpa	50 Mpa
Flexural Strength 1days MasterEmaco T 545 neat MasterEmaco T 545 with 10mm pea gravel MasterEmaco T 545 with angular 10 mm non calciferous aggregate		3.8 MPa 4.2 MPa 4.5 MPa
Modulus of Elasticity (ASTM C469)	<b>7 days</b>	<b>28 days</b>
Neat	28.8 GPa	31.4 GPa
Filled	33.8 GPa	36.2 GPa
Layer thickness	25 to 200 mm	
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)	Initial – 10 to 15 minutes	

ASTM C 266 modified) 22°C	Final – 12 to 20 minutes.
Coefficient of Thermal Expansion (CRD-C 39-81)	12.8 x 10 <sup>-6</sup> /°C.
Water addition	1.4 L/20kg bag
Application temperature (ambient and substrate)	-7°C to +35°C

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.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify concrete substrate is structurally sound and fully cured (28 days).

#### 3.2 SURFACE PREPARATION

- A. Protection: Protect adjacent Work areas and finish surfaces from damage during repair mortar application.
- B. Prepare surfaces in accordance with manufacturer's instructions.
- C. Concrete:
  1. Ensure concrete is structurally sound and fully cured (28 days).
  2. Saw cut perimeter of area being patched into square with minimum depth of 10 mm.
  3. Remove unsound concrete and roughen surface to minimum 6 mm profile amplitude CSP 6 and above.
  4. Remove laitance, oil, grease, curing compounds, and other contaminants that could prevent adequate bond.
  5. MasterEmaco T 545 can be applied to dry concret .
- D. Reinforcing Steel:

1. Remove oxidation and scale from exposed reinforcing steel to SA 2.5 and coat with **MasterEmaco P5000AP** to prevent further corrosion

### 3.3 MIXING

- A. Mix materials in accordance with manufacturer's instructions.
- B. Mix continuously at slow speed to avoid air entrainment.
- C. Mix for minimum of 1-2 minutes until fully homogeneous.
- D. Add aggregate extension, if required, in accordance with manufacturer's instructions.
- E. Mix no more material than can be placed in 5 minutes at 20 degrees C and 50 percent relative humidity.

### 3.4 APPLICATION

- A. Place and cure mortar in accordance with manufacturer's instructions.
- B. Placement:
  1. Place mortar into freshly prepared hole.
  2. Ensure proper consolidation of mortar and compaction around reinforcing steel.
  3. Apply **MasterEmaco T545** into the hole to be filled and ensure it completely fills the void.
  4. Finish completed repair, as required, taking care not to overwork surface.
- C. Curing:
  1. No curing is necessary.

END OF SECTION

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