

# MasterEmaco<sup>®</sup> T 2040

Polymer-based, fast-setting traffic repair mortar

## DESCRIPTION

MasterEmaco T 2040 is a fast setting three-component, screedable patching mortar for floors utilizing natural aggregate and binder based on APS polymer technology. MasterEmaco T 2040 consists of a hybrid polymer (Part A), 2 different activators (Part B), and a reactive filler (Part C).

It offers excellent impact, abrasion and scratch resistance as well as an excellent resistance to chemical attack.

## RECOMMENDED FOR

MasterEmaco T 2040 is recommended for concrete repair and patching mortar, e.g. for:

- Fast repair of car parks, production halls, floors in food processing industries, spalled and worn areas on concrete slabs, cold stores (also for food stuff), etc.
- Concrete floors in commercial and industrial plants where a minimum shutdown time is desired and floors must be back in service within a few hours.

## FEATURES AND BENEFITS

- Fast repairs
- No priming required
- No need for post curing treatment
- Hardening at low temperatures down to -25°C
- With official external declaration of compliance for the use in food storage areas
- Minimum traffic shutdown even at very low temperatures.
- Fast early and final strength development (compressive strength > 35 N/mm<sup>2</sup> after only 3 hours at 20°C)
- High final compressive and flexural strength
- Excellent bond to concrete (> 2 N/mm<sup>2</sup>) thus ensuring a durable repair.
- Low modulus of elasticity (to absorb shocks, vibration and other mechanical stresses).
- Excellent workability
- Wide range of application thickness.
- Tolerant to damp.
- Excellent resistance to the most common chemicals (mineral acids, alcohol, etc.) used in the fields of application described above.
- Available in grey only
- Excellent freeze/thaw resistance.
- Impermeable to water and chlorides.

## TYPICAL PERFORMANCE DATA

Chemical Base	acrylate polymer	
Colour	Grey	
Layer Thickness	5 -30 mm	
Fresh Mortar Density	approx. 2.3 kg/m <sup>3</sup>	
Working Time (in all conditions)	approx. 30 minutes	
Application Temperature (ambient and substrate)	-25 - +20 ° C	
Compressive Strength	20 °C	-20 °C
3 hours	35	Not measurable
24 hours	70 MPa	15MPa
7 days	80 MPa	95 MPa
Flexural strength	20 °C	-20 °C
3 hours	17 MPa	Not measurable
24 hours	20MPa	5MPa
7 days	22 MPa	25 MPa
Elasticity Modulus EN 13412	20 °C	-20 °C
7 days	19 kN/mm <sup>2</sup>	35 kN/mm <sup>2</sup>
Adhesion to Concrete (20 °C) 1 day	≥ 3.5 N/mm <sup>2</sup>	
Adhesion to Steel (20 °C) 1 day	≥ 6.0 N/mm <sup>2</sup>	
Thermal Expansion Coefficient 7 days EN 1770	32x10-6 1/K	
Abrasion Resistance EN 13892-4	Class AR 0.5	
Shrinkage EN 12617-1	3.7 mm	
Absorption of Water EN 1062-3	≤0.01 Kg / m <sup>2</sup> · h-0.5	
Impact Resistance EN ISO 6272	≥ IR 8 Nm	

## PROPERTIES

Supply form	3 pack system
Colour	cement grey
Specific gravity (kit)	2.35kg/L
Application temperatures:	
Slow version	+25°C to + 40°C
Rapid version	-25°C to + 5°C
Max.moisture content of substrate	8% by volume
Application thickness	4-5mm minimum

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## APPLICATION

### Substrate conditions

The concrete should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. The concrete surfaces should be chipped and if there is a water leakage it must be drained or properly plugged. Mechanical surface profiling by grit or shot blasting, high-pressure water jetting, grinding or scabbling (including the necessary post-treatment) are the preferred floor preparation methods. Surfaces should be dry. Use vacuum and/or oil free compressed air to remove free standing water. The concrete areas to be repaired should not be primed or sealed.

In applications which are subject to medium to severe mechanical loads and stresses e.g. in flooring and car park deck applications, the tensile strength of the concrete should exceed  $> 2 \text{ N/mm}^2$  (check with an approved pull-off tester at a load rate of 100 N/s) after surface preparation.

### Mixing

MasterEmaco T 2040 is supplied in working packs which are pre-packaged in the exact ratio. Before mixing, precondition products to temperature expected during application, to achieve optimum working time. As temperature drops under  $0^\circ\text{C}$ , the cure time will increase.

The material will stiffen and will be difficult to work in very cold conditions. That's why the material should be stored in the range of  $5^\circ\text{C}$  to  $25^\circ\text{C}$ . Precondition the material in the range of  $+5^\circ\text{C}$  to  $-5^\circ\text{C}$  for application below  $-15^\circ\text{C}$ .

Mixing Ratio	Part A	Part B	Part C
A:B:C	2.4kg	0.4kg	22.5kg

Pour content of Part A in suitable container and add component C. Mix with a mechanical drill and paddle at low speed for approx. 1 minute until a homogeneous, lump-free consistency is achieved. Add Part B to the mix and remix for at least 2 minutes. Transfer mixed material to another container to avoid mixing errors at the edges of the pail. Remix if necessary.

### Application

MasterEmaco T 2040 should be applied outdoors when the ambient temperature is constant or falling as this will decrease the risk of bubble formation due to expansion of air that is enclosed in the concrete. After mixing, MasterEmaco T 2040 is applied to the prepared substrate by spreading with a trowel at the required thickness. The use of screed rails may be of assistance. In instances of repair the edges of the repair have to be square cut to a minimum of 10 mm to avoid feather edging. Compact and form as required. Note: Do not over-trowel!

The curing time of the material is influenced by the ambient, material and substrate temperatures. At low temperatures, the chemical reactions are slowed down; this lengthens the pot life, open time and curing times. High temperatures speed up the chemical reactions thus the time frames mentioned above are shortened accordingly. To fully cure, the material, substrate and application temperature should not fall below the minimum.

Note: Do not use vibrator for placing the mortar!

After application, the material should be protected from direct contact with water. Within this period, contact with water can cause surface tackiness. The temperature of the substrate must be at least 3 K above the dew point both during the application. It is recommended to apply to the whole area in one continuous operation. To reduce the tack free time at temperatures below  $5^\circ\text{C}$ , or to achieve anti-slip finish, the surface can be broadcast with sand, 0.1 – 0.3 mm, when bulk curing has taken place. The excess sand should be removed after 15 minutes. When MasterEmaco T 2040 is applied exposed to direct sunshine, the surface should be completely finished immediately in one pass, avoiding the retouching of the finished surface.

MasterEmaco T 2040 should be allowed to cure for min. 4 – 6 hours during which it should be protected from traffic and spillages.

Depending on the Part B version used, MasterEmaco T 2040 allows application at widely different temperature conditions:

0 –  $20^\circ\text{C}$  MasterEmaco T 2040 Part B normal  
 $-25$  –  $0^\circ\text{C}$  MasterEmaco T 2040 RS Part B fast.

## NOTE

- Do not add any other substance that could affect the properties of the product.
- Do not apply at temperatures below  $-25^\circ\text{C}$  nor above  $+20^\circ\text{C}$ .

in case of thicker applications and complex geometries consult your local Master Builders Solutions representative.

## WORKING TIME

Approximately 30 minutes.

## CURING

Full cure is reached in 7 days after the application at a constant temperature of  $23^\circ\text{C}$ .

## CLEANING

Tools and mixer can be cleaned immediately after use with water. Cured material can only be removed mechanically.

## ESTIMATING DATA

Approx. 23 kg per  $\text{m}^2$  and cm thickness.



The Chemical Company

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## PACKAGING

Part A: 2.4kg  
Part B: 0.4kg  
Part C: 22.5kg  
Yield: ~10.51L

## STORAGE

Store at ambient temperatures (5 – 25°C), out of direct sunlight, in cool, dry warehouse conditions and clear of the ground on pallets protected from rainfall prior to application. Do not expose the material to temperature over 30°C. 6 months for Part A and 12 months for Part B and Part C, if stored at above mentioned storage conditions.

## 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 BASF **Material Safety Data Sheet (MSDS)** from our office or our website.

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### STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this **BASF** 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

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