Fast setting high strength thixotropic roadway patching mortar

**DESCRIPTION**

**MasterEmaco S 650** trowelable mortar is a thixotropic high strength formulation for repairs to trafficked concrete.

**MasterEmaco S 650** is suitable for placing in thicknesses of 10 mm to 50 mm horizontally. **MasterEmaco S 650** provides a durable, strong repair fully compatible with host concrete.

**RECOMMENDED USES**

**MasterEmaco S 650** is the ideal material for horizontal repairs where the thickness of repair is more than 10 mm and the patch will be subject to traffic loads. Typical applications are:

- Repairs to bridge decks, concrete road, airport runways or aprons.
- Repair of warehouse floors where rapid return to service is required.

**FEATURES AND BENEFITS**

- **Shrinkage compensated** - Reduced cracking tendency
- **One component, factory made only addition of water** - Uniform predictable performance even in remote situations
- **No bonding agent required** - Simple installation
- **Impermeable to aggressive elements** - Long life repairs
- **Rapid setting** - Able to return to service in 2-3 hours
- **Fast and easy placing** - No formwork required thus reducing time for repairs

**PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Grey powder</td>
</tr>
<tr>
<td>Water powder ratio</td>
<td>0.11</td>
</tr>
<tr>
<td>Compressive strength (ASTM C109 7cm cube)</td>
<td>15 MPa3 hours</td>
</tr>
<tr>
<td></td>
<td>25 MPa 1 Day</td>
</tr>
<tr>
<td></td>
<td>50MPa 28 Days</td>
</tr>
<tr>
<td>Working life</td>
<td>20 minutes @ 25°C</td>
</tr>
<tr>
<td></td>
<td>10 minutes @ 40°C</td>
</tr>
<tr>
<td>Final setting time</td>
<td>120 minutes @ 25°C</td>
</tr>
<tr>
<td>Density</td>
<td>Approx. 1900 kg/m3</td>
</tr>
<tr>
<td>Mixing water per 25kg bag</td>
<td>Approx. 2.75litres</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature for application (substrate and material)</th>
<th>Between +5 and +40°C (+5 and +30°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength (ASTM C496)</td>
<td>3.2 MPa @ 28 Days</td>
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**APPLICATION**

**Surface preparation**

Concrete must be fully cured with a minimum direct tensile strength of 1.5 MPa. All loose traces of concrete or mortar, dust, grease oil, etc. must be removed. Damaged or contaminated concrete shall be removed to obtain a keyed aggregate exposed surface. Non-impact/vibrating cleaning methods, e.g. grit or high pressure water blasting are recommended. Cut the edges of the repair vertically to a minimum depth of 10 mm. Clean all exposed reinforcement to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 2944-4. Ensure back of rebar is also clean. Where reinforcing bars are corroded, cut back the concrete to at least 20mm behind the reinforcing bars. Grit blast around the reinforcing bars to remove corrosion products. Replace and coat the affected part of reinforcing bar with **MasterEmaco P 130** for protection against corrosion if the diameter after grit blasting is found reduced by more than 20% of the original diameter on the advice of the structural engineer responsible for the works.

**Mixing**

Only full bags are mixed. Damaged or opened bags should not be used. Mix **MasterEmaco S 650** in a forced action pan mixer, or with a helical paddle attached to a low speed (300-600rpm) mixer for 3 minutes until a lump free, thixotropic consistency is achieved. Only use clean water. Mixing water needed: 2.75litres per 25kg bag. Allow the mortar to rest for 2 - 3 minutes and then remix briefly before applying. If the temperature is above 30°C use chilled water as the mixing water.

**Priming Concrete**

No special primer is required.

**Mortar application**

The prepared substrate should be pre-soaked, preferably for 2 hours before applying **MasterEmaco S 650**. The surface must be saturated surface dry, but without standing water. Apply **MasterEmaco S 650** directly to the
prepared damp substrate, or wet on wet onto the primed surface. A thin scrape coat or contact layer before building up to the required thickness, wet on wet, will improve adhesion especially in case of hand application. Apply to the desired layer thickness of 10 mm to max 50 mm and level using a screeding bar, trowel or wooden board.

Can be applied in thicker layers in smaller patches or where additional reinforcement is present. Smoothing with a trowel or finishing by float or sponge can be done as soon as the mortar has begun to stiffen.

**CURING**

*MasterEmaco S 650* should be cured with a water mist or wet hessian for as long as possible. Do not use film forming curing compounds.

**ESTIMATING DATA**

Each bag of *MasterEmaco S 650* when mixed with 2.75L of water yields 14.6L.

**PACKAGING**

*MasterEmaco S 650* is available in 25kg bags.

**SHELF LIFE**

*MasterEmaco S 650* has a shelf life of 6 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, please make sure that you obtain a copy of the BASF Material Safety Data Sheet (MSDS) from our office or our website.

*MasterEmaco S 650/01/0313*