

THIS METHOD STATEMENT COVERS PREPARATION AND APPLICATION OF A CAST-IN PLACE REPAIR, WHERE CHLORIDES ARE KNOWN TO BE PRESENT IN THE HOST CONCRETE.

METHOD STATEMENT: MasterEmaco S 466 - Chlorides

1. GENERAL:

- 1.1. The area to be repaired should be marked on the drawings and on the structure, and subject to revision based on conditions found as breaking out proceeds.
- 1.2. All further repairs will be at the discretion of the Engineer and subject to remeasurement.
- 1.3. All deviations from the original Bill of Quantities or scope of works must be agreed in writing by the Engineer before reinstatement starts.

2. PREPARATION:

- 2.1. The edges of all repairs shall be cut by angle grinder or similar to produce a regular profile with a minimum depth of 20mm. No feather edges will be accepted in any repair work.
- 2.2. All contaminated, decayed and spalled concrete shall be broken out using high pressure water jetting or pointed mechanical chisels. The use of blunt scabbling hammers which can fracture aggregate, but leave it in place, are not permitted.
- 2.3. Where the removal of damaged concrete exposes the steel, further breaking out to expose the full circumference of the steel is essential. A minimum of 20mm behind the steel is required.
- 2.4. Breaking out shall continue beyond the periphery of the damaged area until uncorroded steel is exposed.
- 2.5. Exposed steel should be cleaned by high pressure water jetting, mechanical wire brush or grit blasting, to remove all corrosion products and be washed down with potable water to remove any residual contamination.
- 2.6. If reinforcement has deteriorated, it shall be removed and be replaced as directed by the Engineer.
- 2.7. The prepared surface shall be sound, dense, free of all oil, grease, loose and fractured aggregate or other contaminants that could impair adhesion.

3. COATING OF STEEL:

- 3.1. Where directed by the Engineer, the cleaned steel shall be given a continuous coating of **MasterEmaco 8100 AP**, a single component, active, zinc rich, epoxy primer, and allowed to dry for at least 2 hours. If left exposed the **MasterEmaco 8100 AP** coated steel must be washed down with potable water to remove any deposited contamination prior to encapsulation.

4. PRIMING / FORMWORK:

- 4.1. **MasterBrace ADH 1414**, a two component, solvent free, epoxy bonding agent, shall be applied to surfaces where the migration of chlorides present in the parent concrete is anticipated.
- 4.2. Pour the total contents of the **MasterBrace ADH 1414** (Part B) into the larger base tin (Part A) and stir with a clean dry rod until a uniform and streak free consistency is achieved.
- 4.3. Pour contents into a flat paint tray.
- 4.4. Using a short haired brush **MasterBrace ADH 1414** shall be applied to the prepared surface ensuring total coverage of the substrate and paying special attention to the saw cut edges of the parent concrete.
- 4.5. Formwork shall be erected ensuring it is firmly in place, sealed to be "grout tight" and to provide at least 20mm cover to the steel.
- 4.6. A 45° birds mouth shall be constructed at the top of the formwork to ensure ease of placement of the **MasterEmaco S 466**.
- 4.7. **MasterEmaco S 466**, shall be applied to the primed substrate whilst the primer is still tacky.

5. TEMPERATURE CONDITIONS:

- 5.1. **MasterEmaco S 466** shall be used when the ambient temperature is between +5°C and 50°C. Chilled water shall be used to prevent mixed material temperatures exceeding 32°C.
- 5.2. Substrate temperatures should not be less than 5°C. In hot weather, areas to be repaired shall be shaded from direct sunlight.

6. MIXING:

- 6.1. The mixer shall be capable of imparting sufficient shear throughout the mix to ensure a homogenous, lump free consistency. Mixers such as slow speed drill and mortar mixing paddle or modified free fall mixers are suitable.
- 6.2. Ensure the mixing container is clean and dampened down prior to mixing.
- 6.3. A proportion of the specified amount of water (approx. 90%) to achieve the required flow shall be poured into the mixer. Slowly add the powder whilst the mixing drum is rotating.
- 6.4. Mixing shall be for a minimum of 3 minutes during which time the remaining mix water may be added, if required, until a uniform free flowing consistency is achieved.

7. APPLICATION:

- 7.1. The mixed **MasterEmaco S 466** shall be poured steadily and continuously, through the birds mouth opening at the top of the formwork. A slow steady pouring rate reduces the chances of air entrapment.
- 7.2. Alternatively, the **MasterEmaco S 466** shall be placed by pouring into a funnel attached to a flexible pipe of 30-50mm diameter, the pipe is initially placed near the bottom of the formwork. The pipe is then raised as the pour continues.
- 7.3. For large scale repairs of extended length, the **MasterEmaco S 466** shall be placed in layers, i.e. place from left to right in one layer and then repeated with the successive layers applying the **MasterEmaco S 466** wet on wet.
- 7.4. **MasterEmaco S 466** shall be placed continuously, minimising the amount of time between successive batches.
- 7.5. **MasterEmaco S 466** is self compacting and does not require external vibration. However, tapping the formwork lightly with a hammer during placement will contribute towards effective consolidation of the material.

8. CURING:

- 8.1. Using the appropriate **MasterKure** curing compound, spray surfaces immediately upon removal of formwork and spray at least 10cm onto the adjacent concrete around the periphery of the repair.
- 8.2. Protect from wind, rain and direct sunlight for 24 hours.

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