THIS METHOD STATEMENT COVERS THE PREPARATION AND INSTALLATION OF **MasterEmaco S 496** AS A CAST-IN-PLACE REPAIR.

METHOD STATEMENT: MasterEmaco S 496

1. GENERAL:

1.1. If required, the area to be repaired should be marked on the structure and should be subject to revision based on conditions found as breaking out proceeds.

1.2. All areas of concrete identified as defective or contaminated should be removed.

2. PREPARATION:

2.1. After identification, the edges of all repairs should be cut by diamond blade to produce an edge depth of 20mm. There should be no feather edges. Minimum thickness of repair should be 50mm.

2.2. Loose concrete within the cut-out areas shall be removed.

2.3. Removal of loose concrete should be undertaken using suitable mechanical means or by high pressure water jetting. Removal of concrete should continue until sound; dense concrete is encountered or as instructed by the Engineer.

2.4. The substrate should be prepared to a rough surface where the aggregate is showing ICRI CSP 9-10.

2.5. The prepared surface should be sound, free of all oil, grease, loose aggregate or other contaminants that could impair adhesion.

2.6. Exposed steel should be cleaned by high pressure water jetting, mechanical abrasion or grit blasting, and should be washed down with potable water to remove any residual contaminated rust. Steel reinforcement should be fully exposed to allow the repair material to fully envelop it and create a mechanical anchor for the repair.

2.7. If reinforcement has deteriorated, this should be removed and replaced as directed by the Engineer.

3. COATING OF STEEL:

3.1. Generally, there should be no need to coat the reinforcement.

4. PRIMING / FORMWORK:

4.1. Formwork shall be erected, ensuring it is firmly in place, sealed to be “watertight”, and to provide at least 20mm cover to steel.

4.2. Provision must be made for drainage outlets at the lowest points of the sealed formwork.

4.3. A 45°birds mouth shall be constructed at the top of the formwork to ensure ease of placement of the **MasterEmaco S 496**.

4.4. The shuttered repair shall be saturated for 3-4 hours with potable water prior to placement of **MasterEmaco S 496.**

5. TEMPERATURE CONDITIONS:

5.1. **MasterEmaco S 496** shall be used when the ambient temperature is between +5°C and 50°C. Chilled water shall be utilised to prevent mixed material temperatures exceeding ± 35°C.

5.2. Substrate temperatures should not be less than 5°C. In hot weather areas to be repaired should be shaded from direct sunlight.

6. MIXING:

6.1. **MasterEmaco S 496** should be mixed using a heavy-duty drill and paddle, a forced action paddle mixer or a modified free fall mixer.

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. Steadily pour the powder whilst the mixing drum is rotating.

6.4. Mixing shall be for approximately 3 minutes during which time the remaining mix water shall be added, if required, until a uniform free flowing consistency is achieved.

6.5. Water addition shall be 3.25 – 3.75 L (max.) of potable water per 25kg bag depending upon consistency / strength required.

7. APPLICATION:

7.1. Ensure all free water is drained from the formwork and the drain holes are plugged before mixing the **MasterEmaco S 496**.

7.2. The mixed **MasterEmaco S 496** 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.

7.3. Alternatively, the **MasterEmaco S 496** shall be placed by pouring into a funnel attached to a flexible pipe of 50mm diameter, the pipe is initially placed near the bottom of the formwork. The pipe is then raised as the pour continues.

7.4. **MasterEmaco S 496** shall be placed continuously, minimizing the amount of time between successive batches.

7.5. For large scale repairs of extended volume, the **MasterEmaco S 496** is best placed using a Putzmeister P13 mixer - pump as this enables continuous mixing and pumping to take place.

7.6. **MasterEmaco S 496** is self-compacting and does not require external vibration. Tapping the formwork lightly with a hammer during placement will contribute towards effective consolidation of the material.

8. CURING:

8.1. Leave the shuttering in place for at least 48 hours and longer if possible.

8.2. Do not strip supporting formwork until the required strength has been developed - as confirmed / approved by the Engineers.

8.3. Apply **MasterKure 181 or MasterKure 101** curing compound, to all surfaces, by spray, immediately upon removal of formwork. Ensure this extend at least 10cm onto the adjacent concrete around the periphery of the repair.

8.4. Protect from wind, rain and direct sunlight for at least 72 hours.

8.5. Alternatively, upon removal of the shuttering wrap in wet hessian and plastic sheeting. Keep the hessian continuously wet and the plastic sheeting in place for at least 7 days.

8.6. As this material contains high levels of GGBS curing is extremely critical and should be carried out for as long as practically possible with a minimum requirement of 7 days.