THIS METHOD STATEMENT COVERS THE PREPARATION AND INSTALLATION OF **MasterEmaco S 443** A CAST-IN-PLACE REPAIR TO REFURBISHMENT OF STRUCTURES.

METHOD STATEMENT: MasterEmaco S 443

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 20 mm. There should be no feather edges.

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

2.3. Removal of loose concrete should be undertaken using suitable mechanical chisels or high pressure water jetting. Removal of concrete should continue until sound, dense concrete is encountered.

2.4. The substrate should be prepared to a rough surface where the aggregate is showing.

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.

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

3. COATING OF STEEL:

3.1. Where **MasterProtect 8500CI** is specified coating of the reinforcing steel is not necessary.

3.2. Where **MasterProtect 8500CI** is not specified and where directed by the Engineer, the prepared 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 with potable water to remove any deposited contamination prior to encapsulation.

4. PRIMING / FORMWORK:

4.1. Formwork shall be erected, ensuring it is firmly in place, sealed to be “grout tight”, 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 443.**

4.4. The shuttered repair shall be saturated for 3-4 hours with potable water prior to placement of **MasterEmaco S 443.**

5. TEMPERATURE CONDITIONS:

5.1. **MasterEmaco S 443** 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 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. **MasterEmaco S 443** 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 a minimum of 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 3.0 to 3.5 litres of potable water per 25kg bag.

7. APPLICATION:

7.1. Ensure all free water is drained from the formwork and the drain holes are plugged before mixing the **MasterEmaco S 443.**

7.2. The mixed **MasterEmaco S 443** 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 443** 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.

7.4. For large scale repairs of extended length, the **MasterEmaco S 443** 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 443** wet on wet.

7.5. **MasterEmaco S 443** shall be placed continuously, minimizing the amount of time between successive batches.

7.6. **MasterEmaco S 443** 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.

7.7. The **MasterEmaco S 443** shall be applied at a minimum thickness of 15 mm and a maximum layer thickness of 200mm.

Additional Aggregate for repairs > 150 mm to 300 mm
For repair areas greater than 150 mm aggregate “bulking” is required. The addition rate for the 5-10mm aggregate should be confirmed by site trials. Typically, the addition rate would be between 20kg of clean dry aggregate **(MasterEmaco FL 100)** per 50kg bag (25kg x 2) of **MasterEmaco S 443.**

8. CURING:

8.1. Good curing is essential. Particular care is required in hot and/or windy conditions. Curing can either be with a product from the **MasterKure** range, and/or by covering the work with a properly secured wet cloth or hessian and plastic sheet.