

THIS METHOD STATEMENT COVERS THE PREPARATION & INSTALLATION OF **MasterFlow 928HF** FOR USE IN BEDDING, GROUTING & PRECISION BEARING OPERATIONS. DEVIATIONS FROM THE FOLLOWING PROCEDURES MUST BE AGREED WITH THE ENGINEER

## **METHOD STATEMENT: MasterFlow 928HF**

REFER TO THE GROUT MANUFACTURERS TECHNICAL DATA SHEET & OBSERVE WATER ADDITION RATES DETAILED FOR THE CONSISTENCY REQUIRED

### **1. FOUNDATION PREPARATION:**

- 1.1. Preparation of the concrete surface to which the grout will bond should be carried out before the base plate is installed.
- 1.2. Prepare the concrete surface using a chipping hammer, grit blasting or high pressure water jetting, to leave a roughly textured, clean surface, free from all forms of contamination. Bush hammering or similar method which can fracture aggregate but leave it in place is not permitted.
- 1.3. Preparation should cover the full extent of the surface which is intended to be in contact with the grout.
- 1.4. Where it is indicated that bolts are to be anchored within the grout, bolt pocket formers should be shaped to form a cone, helping to ensure stresses that build up when the bolts are tightened are transmitted to the foundation.
- 1.5. Bolt pocket formers should be made from materials that are easy to remove but leave a rough concrete surface texture when stripped.
- 1.6. All surfaces and bolt pockets to receive grout must be clean and free of oil, dust, dirt, paint and residual curing compound.
- 1.7. All baseplates, holding down bolts etc., are to be free of rust, oil, dirt or contaminants that could impair bond.

### **2. FORMWORK:**

- 2.1. Before fixing formwork, ensure the foundation area and bolt holes are clean.
- 2.2. Formwork fitted around the base plate to contain the grout must be as watertight as is practical, to prevent grout loss.
- 2.3. The top of the formwork should be a minimum of 2.5cm above the underside of the base plate.
- 2.4. For large base plate pours or when the gap between base plate and foundation concrete is of less than 2.5cm depth, the formwork should be higher to allow a pressure head to build up.
- 2.5. On the pouring side, which should be the shortest distance across the base plate, a 'hopper' should be constructed to allow a pressure head sufficient to enable grout to flow to the full width of the pour. The form should be fixed with the top sloping away from the base

plate at a 45° angle to form a slope down which the grout can be poured.

- 2.6. The formwork should be fixed to allow easy stripping without causing damage or stress to the grout, if the formwork is to be removed when the grout is still green.
- 2.7. If grout is to be pumped under pressure, formwork should be constructed to withstand the additional localised pressure.

### **3. PREPARATION FOR GROUTING:**

- 3.1. Before final fixing of the formwork, remove all dirt and debris from within the area to be grouted.
- 3.2. Saturate the concrete within the formwork with water for 24 hours prior to grouting to ensure a saturated but surface dry condition at the time of grouting.
- 3.3. Ensure sufficient grout is available on hand to complete the intended pour in a continuous process.
- 3.4. Prior to the grout installation mixing equipment must be demonstrated to be suitable and in good working order. Back up mixing equipment should always be available in case of breakdown.
- 3.5. Drum type concrete mixers will only be permitted when modified by fixing wire mesh with a mesh size of 12-15mm over blades inside the drum, to assist in breaking up balls of grout should these occur.
- 3.6. Ensure adequate potable water is available for mixing.

#### **Hot weather grouting**

- 3.7. If grouting is to take place in the open, store bags of grout under shade. Shade the mixing area and the location to be grouted and ensure that a supply of cool or chilled water is available to produce a maximum mixed grout temperature of 32°C., when placed.
- 3.8. A thermometer should be available to monitor 'as-mixed' grout temperatures

#### **Cold weather grouting**

- 3.9. If the temperature of the base concrete cannot be maintained at or above 5°C whilst the grout hydrates, delay grouting until this can be achieved.
- 3.10. Use warm water to bring the mixed temperature of the grout above 5°C.
- 3.11. If the ambient temperature will fall below 5°C after placing the grout, make sure materials are available to insulate the installation.
- 3.12. Adjacent machinery should be shut down if causing vibrations in the pour site.

### **4. MIXING:**

- 4.1. Prior to mixing operations, ensure that all standing water is removed from bolt pockets and surrounding areas.
- 4.2. Individual bags may be mixed with a slow speed (300-500 RPM), heavy duty drill fitted with a suitable mixing paddle. Multiple bag mixes shall employ dedicated grout mixers or modified drum mixers.

- 4.3. The mixing set-up must be able to produce a continuous supply of freshly mixed grout once the pour starts.
- 4.4. Place 90% of the mixing water required to achieve the desired consistency into the pail or mixer before adding the bagged grout. Maintain water addition within the range given in the appropriate Technical Data Sheet.
- 4.5. When the mixed grout is lump free, add the remaining mix water to bring to the desired consistency.
- 4.6. Mixing time with drill and paddle will be a minimum of 3 minutes and 4-5 minutes with a drum mixer.

## 5. PLACING:

- 5.1. All bolt pockets must be filled with grout before pouring the rest of the underplate grout, to prevent voids being formed.
- 5.2. Start at one end of the base plate, pouring grout down the slope of the formwork. When the grout reaches the far side formwork and rises above the bottom of the base plate, move the pouring point slowly along the length of the base plate, always ensuring that the grout has risen up on the opposite side of the base plate before moving along.
- 5.3. Pour the grout steadily down the slope of the formwork to reduce the possibility of entrapping air.
- 5.4. Do not pour from different sides of the base plate as this can cause voids which reduce the effective bearing area.

## 6. CURING:

- 6.1. Immediately the grout is placed, cover exposed edges with wet rags (cloth retains moisture more effectively than hessian) keeping them wet for 24 hours. After 24 hours remove the formwork.
- 6.2. After removing the formwork, brush on **MasterKure 181** curing membrane (2 coats), brushing the curing membrane onto the concrete for at least 25 mm from the edge of the grout. Allow the curing membrane to dry, then cover the exposed edges of grout with cloth and keep wet for a minimum of 7 days.
- 6.3. NOTE:

Wet curing is the preferred curing method, but it is very rare for the grout to be kept wet 24 hours a day unless very strict supervision is maintained.

**7. SHOULDERS:**

- 7.1. If finishing work is required on shoulders, it should be kept to a minimum to avoid increasing the risk of cracks forming.
- 7.2. When finishing work is complete, the curing regime must be reinstated.
- 7.3. Shoulders formed from grout should be kept to a minimum, to avoid future problems with cracks forming in the hardened material.

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