

# MasterRoc<sup>®</sup> MP 650 RHEOCEM Formerly RHEOCEM 650

Fast setting microfine Portland cement for injection into rock and soil

## PRODUCT DESCRIPTION

Because of **MasterRoc 650 RHEOCEM**'s small particle size and a specially adapted admixture system, it penetrates very well into tight joints, fissures and pore spaces to provide a water-tight grouted rock or soil mass.

**MasterRoc MP 650 RHEOCEM** is a well-graded cement milled from pure Portland cement clinker with a Blaine value of 650 m<sup>2</sup>/kg.

**MasterRoc MP 650 RHEOCEM** achieves initial and final setting faster than normal and microfine cements. This increases productivity in a tunnel grouting operation. The short open time of 1 to 1½ hours and a very short setting time of 2½ hours reduce the waiting time for the next activity to start to a minimum (at about 20°C).

## FIELDS OF APPLICATION

- Rock injection: Tunnels, caverns, mines, etc., used for pre- and post excavation injection. Ground water sealing and ground stabilisation.
- Soil injection: Ground stabilisation, ground water sealing.
- Pre-packed injection
- Contact injection

## FEATURES AND BENEFITS

- Standard cement injection equipment can be used
- Better penetration in tight joints, fissures and pore spaces
- Greater penetration imparts greater water tightness
- Fast setting
- Better working environment and no hazardous components
- Durable
- Economical solution

## PACKAGING

**MasterRoc MP 650 RHEOCEM** is supplied in either 20 kg plastic bags or 1000 kg bags.

## TECHNICAL DATA

|                                    |                                  |
|------------------------------------|----------------------------------|
| <b>Fineness (Blaine)</b>           | <b>&gt; 625 m<sup>2</sup>/kg</b> |
| <b>Particle size distribution:</b> |                                  |
| <40 micron                         | 100 %                            |
| <30 micron                         | 98 %                             |
| <20 micron                         | 97 %                             |
| <15 micron                         | 94 %                             |
| <10 micron                         | 77 %                             |
| < 5 micron                         | 44 %                             |
| < 2 micron                         | 16%                              |

## SETTING TIME

The setting times, at a 1:1 Water/Cement ratio (by weight) and at 20°C are as follows:

|                                    |             |
|------------------------------------|-------------|
| Initial set:                       | 60-120 min  |
| (Measured by Vicat needle)         |             |
| Final set:                         | 120-150 min |
| (1 mm penetration by Vicat needle) |             |

Injection grout properties indicated below, relates to a mix containing 1.5% MasterRheobuild<sup>®</sup> 2000 PF:

|                    |                  |
|--------------------|------------------|
| Mud balance        | 1.48 - 1.50 kg/l |
| Water/cement ratio | 1.0              |
| Flow cone          | 32 - 34 s        |
| Bleeding maximum   | 2 %              |

## APPLICATION PROCEDURE

**MasterRoc MP 650 RHEOCEM** should always be used with MasterRheobuild 2000PF water reducing admixture (1.0 - 2.0 % of cement weight). Water/cement ratio (by weight) should normally be between 0.5 and 1.0.

## MIXING

- Fill the mixer with water
- Add MasterRheobuild 2000PF
- Add cement and mix for 2 minutes
- Transfer to agitator

It is very important to use an efficient mixer. Colloidal mixers give the best result.

Minimum rpm for colloidal mixers is 1500.

NB: Do not over mix. Mixing longer than recommended may cause the grout temperature to increase and set in the pump and hoses.

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## POT LIFE

The mix should be kept under constant agitation prior to injection. Do not keep grout in agitator longer than 30 – 40 minutes.

## INJECTION

High-pressure piston pumps are normally used to pump the suspension into the rock.

The grout should be injected within 30 - 40 minutes after mixing to ensure that it keeps penetrating into the fissures. Longer open times can be achieved by MasterRoc HCA DELVO<sup>®</sup>CRETE stabiliser hydration control admixture.

For much longer open times, an alternative is to use MasterRoc RHEOCEM 650 SR, which gives longer open time.

## HARDENING

MasterRoc MP 650 RHEOCEM will have set sufficiently after 2 - 2½ hours to allow drilling to commence for control or blast holes.

## STORAGE

MasterRoc MP 650 RHEOCEM has a shelf life of 9 months when stored in original closed bags in ventilated dry areas.

## SAFETY PRECAUTIONS

Any physical contact (e.g. skin or eyes) made with MasterRoc MP 650 RHEOCEM should be avoided, as it may cause irritation or burns.

If such contact occurs, the affected area should be washed with plenty of clean water. In case of eye contact, seek immediate medical advice.

For further information please refer to the Material Safety Data Sheet or contact your local Master Builders Solutions office.

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### STATEMENT OF RESPONSIBILITY

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