

MasterRoc[®] MP 650

Fast setting micro fine Portland cement for rock and soil injection

Material Description

MasterRoc MP 650 is a well graded cement milled from pure Portland cement clinker with a Blaine value of 650 m²/kg. Due to its small particle size, it penetrates tight joints, fissures, and pores very well to provide a water-tight grouted rock or soil mass.

It achieves initial and final setting faster than standard micro fine cements. This increases the productivity in injection operations. The short open time of 1 to 1½ hours and a very short setting time of 2½ hours (at about 20° C) reduces the waiting time for the next excavation round to a minimum.

Areas of Application

- Pre-injection in underground structures
- Post injection
- Water ingress reduction
- Ground stabilization
- Contact injection

Characteristics and Benefits

- Excellent penetration in tight joints, fissures, and pores
- Fast setting
- Durable
- Better working environment - no hazardous components
- Economical solution
- Standard cement injection equipment can be used

Packaging

MasterRoc MP 650 is supplied in 20 kg plastic bags and 1000 kg bags.

Technical Data

Fineness (Blaine)	> 625 m ² /kg
Particle size distribution:	
<40 micron	100 %
<30 micron	99 %
<20 micron	97 %
<15 micron	93 %
<10 micron	80 %
< 5 micron	50 %
< 2 micron	23 %

d95	16 microns
d50	5 microns
d25	2 microns

Setting Times

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

Initial set: 60-120 min (Penetration of Vicat needle up to 6 mm +/- 3 mm over ground)

Final set: 120-150 min (1 mm penetration by Vicat needle)

Injection grout properties indicated below, relates to a mix containing a High Range Water Reducing Admixture (e.g., 1.5% MasterRheobuild 2000 PF):

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

Application Procedure

Mixing

MasterRoc MP 650 should always be used with a Master Builders Solutions High Range Water Reducing Admixture (HRWR - MasterGlenium or MasterRheobuild with 0.6 – 2 % of the cement weight). To prove the compatibility, it is recommended to do a pretest in regards of bleeding/segregation. The w/c ratio (by weight) should normally be between 0.6 and 1.0.

- Fill the mixer with water
- Add cement while running the mixer and mix for 2 minutes additional
- Add the Master Builders Solutions High Range Water Reducing Admixture and mix for 1 minute
- 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/or hoses.

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Pot life

The mix should be kept under constant agitation prior to injection. Do not keep the grout in the 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 spreading into the fissures. Longer open times can be achieved by using MasterRoc HCA 10 hydration control stabilizer admixture. For much longer open times MasterRoc MP 650 SR is a real alternative. This product is available upon special request.

Hardening

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

Storage

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

Precautions

Any physical contact (e.g., skin or eyes) with the product should be avoided, as it may cause irritation or burns.

If such a 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 representative.

Disclaimer

The information given here is true, represents our best knowledge and is based not only on laboratory work but also on field experience. However, because of numerous factors affecting results, we offer this information without guarantee and no patent liability is assumed. For additional information or questions, please contact your local representative.

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