

MasterRoc[®] MP 900

Fast setting ultrafine Portland cement for injection into rock and soil

Material Description

MasterRoc MP 900 is a well-graded cement milled from pure Portland cement clinker with a Blaine value of 900 m²/kg. Due to its 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. It 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 (at about 20°C) reduces the waiting time for the next activity to start to a minimum.

Areas of Application

- Pre-injection in all underground structures
- Also possible for post injection
- Water ingress reduction
- Ground stabilization
- Contact injection

Characteristics and Benefits

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

Packaging

20 kg plastic and 1000 kg bags

Technical Data

Particle Size Distribution

<40 micron	100 %
<30 micron	100 %
<20 micron	100 %
<15 micron	99 %
<10 micron	95 %
< 5 micron	70 %
< 2 micron	34 %

d95	12 microns
d50	3.5 microns
d25	1.5 microns

Fineness (Blaine) > 900 m²/kg

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, relate to a mix containing a High Range Water Reducing Admixture (e.g., 1.5% MasterRheobuild 2000PF):

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 900 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.

Mixing

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.

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

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 using MasterRoc HCA 10 hydration control admixture.

For much longer open times, an alternative is to use MasterRoc MP 900 SR. This product is available on special request.

Hardening

MasterRoc MP 900 will have set sufficiently after 2 - 2½ hours to allow drilling to commence for control or blast holes.

Storage

MasterRoc MP 900 has a shelf life of 9 months when stored in original closed bags in ventilated dry areas.

Precautions

Any physical contact (e.g., skin or eyes) made with the product 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 UGC 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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