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MasterRoc[®] MP 900

Fast setting ultrafine portland cement for injection into rock and soil

Description

MasterRoc MP 900 is a well-graded ultrafine cement milled from pure portland cement clinker and has a Blaine value of 900 m²/kg. Due to its small particle size and a specially adapted admixture system, MasterRoc MP 900 ultrafine cement can penetrate effectively into tight joints, fissures, and pore spaces. This superior penetration provides a water-tight grouted rock or soil mass. Setting time of MasterRoc MP 900 ultrafine cement is much shorter than that for normal and microfine cements, which helps in increased productivity in tunnel grouting operations.

Applications

Recommended for use in:

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

Features

- Ultrafine particle size
- Fast setting
- Durable

Benefits

- Excellent penetration in tight joints, fissures and pore spaces
- Increases productivity and shortens injection down-times
- Economical solution for underground water management
- Permits the use of standard cement injection equipment

Performance Characteristics

Technical Data

Fineness (Blaine)	>900 m ² /kg
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Particle Size Distribution

<40 microns	100%
<30 microns	100%
<20 microns	100%
<15 microns	99%
<10 microns	95%
<5 microns	70%
<2 microns	34%
d95	12 microns
d50	3.5 microns
d25	1.5 microns

Setting Time

The setting times (measured by Vicat needle) at a water-cement ratio of 1.0 (by mass) and at 68 °F (20 °C) are as follows:

Initial Set	60 - 120 min.
Final Set	120 - 150 min.

Injection Grout Properties

Relate to a mix containing 1.5% (by mass of cementitious materials) MasterRheobuild® 1000 admixture:

Mud balance	12.5 lb/gal (1.50 kg/L)
Water-cement ratio	1.0
Flow cone	32s - 34s
Bleeding, maximum	2%

Guidelines for Use

Dosage and Application Procedure: MasterRoc MP 900 ultrafine cement should always be used with MasterRheobuild 1000 high-range water-reducing admixture (1.0% - 3.0% by mass of cementitious materials). The water-cement ratio (by mass) should normally be between 0.5 and 1.0.

Mixing:

- Fill the mixer with water
- Add MasterRoc MP 900 ultrafine cement
- Mix for 2 minutes
- Add MasterRheobuild 1000 admixture and mix for one minute
- Transfer to agitator

It is very important to use an efficient mixer. Colloidal mixers are preferred and give the best results for complete mixing.

Minimum speed for colloidal mixers is 1,500 rpm.

Do not over mix. Mixing longer than recommended may cause the mix temperature to increase and result in setting of the grout in the pump and hoses.

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

Injection: High-pressure piston pumps are normally used to pump the mix into the rock. The mix should be injected within 30 to 40 minutes after mixing to ensure that it keeps penetrating into the fissures. Longer open times can be achieved by using MasterSet® DELVO hydration controlling admixture.

Hardening: MasterRoc MP 900 ultrafine cement will set sufficiently in 2 to 2½ hours to allow drilling to commence for control or blast holes.

Storage and Handling

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

Safety: Direct contact between bare skin and MasterRoc MP 900 ultrafine cement should be avoided as it may cause irritation or burns. If contact does occur, flush the affected area with copious amounts of clean water. In case of eye contact, seek immediate medical advice. For further information, please refer to the Safety Data Sheet or contact your local Master Builders Solutions sales representative.

Packaging

MasterRoc MP 900 ultrafine cement is supplied in 44 lb (20 kg) plastic bags.

Related Documents

Safety Data Sheets: MasterRoc MP 900 ultrafine cement

Additional Information

For additional information on MasterRoc MP 900 ultrafine cement, consult your local sales representative.

Master Builders Solutions creates technologies for the construction industry inspiring people to build better. We are active in ~40 countries and operate 35 production sites with over 1,600 employees. We develop, produce, and market high-quality chemical admixtures, as well as adjacent core technologies, to master the challenges of today and support a decarbonized future. Our people are pivotal and pair leading technologies and a strong brand heritage to surpass our customers' expectations and drive continuous value creation.

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