

RHEOCEM[®] 650

Fast setting microfine binder for injection into rock and soil

Description

RHEOCEM[®] 650 is a microfine cementitious binder for rock and soil injection. Because of 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.

RHEOCEM[®] 650 is well-graded and milled from pure clinker with a Blaine value of 650 m²/kg

The short open time of 1 to 1 ½ hours and a very short setting time of 2 ½ hours reduce the waiting time for the next activity to start to a minimum. (At about 20°C) This increases productivity in a tunnel grouting operation.

Uses

- 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.
- Prepacked injection
- Contact injection

Advantages

- Standard 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

Typical Properties

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

Setting Times

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

Initial set: 60-120 min, final set: 120 – 150 min
(Measured by Vicat needle)

Injection grout properties indicated below, relates to a mix containing 1.5% RHEOBUILD[®] 2000 PF:

Mud Balance: 1.48 -1.50 Kg/l

Water/binder ratio: 1.0

Flow cone: 32-34 s

Bleeding maximum: 1%

Direction for use

RHEOCEM[®] 650 shall always be used with RHEOBUILD[®] 2000 PF water reducing admixture (1.0 – 3.0 % of cement weight.) Water/binder ratio (by weight) shall normally be between 0.5 – 1.0.

Mixing

- Fill the mixer with water
- Add RHEOCEM[®] 650. Mix for 2 minutes.
- Add RHEOBUILD[®] 2000 PF and mix for another minute.
- Transfer to agitator.

It is very important to use an efficient mixer. Colloidal mixers are the best, but high – speed paddle mixers are acceptable.

Minimum rpm. for colloidal mixers : 1500 rpm

Minimum rpm. for paddle mixers : 400 rpm

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

The mix shall 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 Delvo[®] crete Stabiliser hydration control admixture. For much longer open times, an alternative is to use RHEOCEM 650 SR, which gives longer open time.

Hardening

RHEOCEM[®] 650 will have set sufficiently after 2–2 ½ hours to allow drilling to commence for control or blast holes.



The Chemical Company

Packaging

RHEOCEM® 650 is supplied in either 25kg or 1000 Kg bags.

Storage and Shelf life

Shelf life is 6 months when stored in original closed bags in ventilated dry areas.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice please consult BASF's Technical Services Department.

Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet. MSDS available on demand or on BASF construction chemicals web site.

Note

All BASF Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

Field services where provided, does not constitute supervisory responsibility, for additional information contact your local BASF representative.

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