

SAFE-T-GROUT 120

Temperature activated grout - a pumpable and encapsulated non-shrink rock support grout

Description

SAFE - T - GROUT 120 is a new concept grout that is temperature activated to give the required one hour specified strength. SAFE - T - GROUT 120 is a pre-mixed dry powder composed of blended cements, shrinkage compensating chemicals, plasticizing agents and new concept additives. It is non-toxic and has no added chlorides or nitrates. At ambient temperatures ranging between 25° C and 30° C the product mixed with the specified water will have a pot life of 2-3 hours. At temperatures above 35° C the finished product will give the required one hour strength.

Typical Applications

- * Mining rock support.
- * Grouting of anchor bolts.
- * Tunneling.
- * Cavity filling in pipes and concrete members.

Advantages

- * Extended pot life at ambient temperatures (2-3 hours).
- * Early strength gains at elevated temperatures.
- * Temperature activated above 35° C gives the 1 hour strength required.

* Highly pumpable through small orifices.

* Excellent bonding characteristics.

* Nontoxic.

* Easy application.

* Thixotropic action - no volume loss or slumping of grout from overhead holes.

* Pre-mixed - eliminates mix selection problems and therefore reduces risk of failure.

Typical Properties

SAFE-T-GROUT 120 must be applied in areas where rock face temperatures are greater than 35° C. The product required elevated temperatures in order to perform and give the one hour strength requirements.

Test results of SAFE- T - GROUT 120 is given in the table below. It must be noted that the given results were determined under laboratory conditions. Site adjustments and conditions may alter the final results.

TABLE 1.0 BOND PULL-OUT STRENGTH (TONS)

Supplier	MCC	MCC	MCC	MCC
Product Name	Safe-T-Grout 120	Safe-T-Grout 120	Safe-T-Grout 120	Safe-T-Grout 120
Setting Grade (fast, med, slow)	Med/Fast @ 40° C ACliED	Med/Fast @ 50° C ACliED	Med/Fast @ 60° C ACliED	Med/Fast @ 70° C AC liED
Size of capsules (450mm x 65mm)	4 x 1.5 kg	4 x 1.5 kg	4 x 1.5 kg	4 x 1.5 kg
Pumpable loose	8 kg	8 kg	8 kg	8 kg
Capsule mass (kg)	1.5 kg	1.5 kg	1.5 kg	1.5 kg
Tendon length pulled	200mm x 16mm	200mm x 16mm	200mm x 16mm	200mm x 16mm
Pull load after 1 hour	3 - 3.5 tons	4 - 5 tons	5 - 6 tons	6 - 6.5 tons
Pull load after 2 hours	4 - 5 tons	5 - 6 tons	6 - 7 tons	6.5 - 7.5 tons
Pull load after 4 hours	5 - 6 tons	6 - 6.5 tons	6.5 - 7.5 tons	6.5 - 8 tons
Pull load after 24 hours	6 - 7 tons	6.5 - 7.5 tons	7 - 8 tons	7.5 - 8.5 tons
Compressive strength after 2 hours	8-10 Mpa	9-11Mpa	10-12Mpa	11 - 13 MPa
Compressive strength after 4 hours	10 - 12 Mpa	11 - 13 Mpa	12-14Mpa	13-15MPa
Compressive strength after 24 hours	12 - 16 Mpa	13-18Mpa	14-19Mpa	15-20MPa
Compressive strength after 7 days	16 - 20 Mpa	18-21 Mpa	19-21 Mpa	20- 23 MPa
Compressive strength after 28 days	20 - 25 Mpa	22 - 26 Mpa	22-28 Mpa	23- 28 MPa
Pot life at 25° C	2 - 3 hours	2 - 3 hours	2 - 3 hours	2 - 3 hours
Wetted yield / litres	3.6	3.6	3.6	3.6

Notes: results based on
dipping of capsules

Temperature activated

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Application Procedures

SAFE- T - GROUT 120 is packed and supplied in two different forms, namely:

- * Encapsulated where the product is packed in material capsules (450mm x 65 mm) having a mass of one and a half kilograms.
- * In moisture resistant lined Polypropylene bags having a mass of eight kilograms.

Preparation of material before application

If SAFE - T - GROUT 120 encapsulated is used, the capsules are dipped into potable water and left to soak in water until all the air bubbles have dissipated. The capsules are then removed from the water and left to drain for 2 minutes.

Remove the material by stripping off the one end of the sock and empty the capsule content into a pneumatic pump.

Once the pump is full, clamp down the lid of the pump and apply the necessary air pressure which will push the material into the bolt hole via a discharge hose.

OR

If SAFE - T - GROUT 120 is supplied as a loose powder in a polypropylene bag having a mass of eight kilograms, it then will require the addition of 3 litres of water in order to form a pumpable slurry. In practice, the powdered product is placed into a mixing vessel and the required water is then added. The water and powder is thoroughly mixed until a smooth lump free slurry is obtained. Transfer the mixed slurry into the pneumatic pump and pump the mixed material into the drilled holes.

Yields

- * The encapsulated SAFE - T - GROUT 120 will have a wetted yield of 3,6 litres.
- * The pre-mixed dry powder once mixed with the required amount of water will have a wetted yield of 5,8 litres.

Packaging

SAFE - T - GROUT 120 is packaged into custom designed woven Polypropylene bags with polythene inner liners. The weight per bag is 8 kg or as encapsulated capsules weighing 6kg per bag.

Quality Assurance

MCC LIMPOPO's production and testing programmes comply with local and international standards.

Updates

This data sheet supersedes all previous issues prior to this date:
25/02/2015