

Technical Data Sheet

Capcem® 4/4 F Pumpable Grout



Encapsulated Cementitious Pumpable Anchoring Grout.

Uses

For fast grouting of rock anchors, particularly of overhead roof bolts as encountered in mining and tunnelling applications, where rapid strength development is required, and where rock temperature may exceed 35°C.

Advantages

- **Fast Strength Development**
A fast rate of grout strength gain ensures rapid development of anchor pull-out strength.
- **Encapsulated**
 - Controlled water: powder ratio.
 - Eliminates mixing equipment.
 - Minimises wastage of grout.
- **Non-shrink**
Expansion agents counteract shrinkage and ensure effective contact.
- **Chloride-free**
Rapid strength development without the use of chlorides promotes absence of corrosion.
- **Thixotropic**
Minimum loss of grout even from overhead holes due to the thixotropic nature of the grout. The grout meets Durabar yielding bolt specifications of >15MPa after 24 hours and > 25MPa after 28 days.

Description

Capcem 4/4 F Pumpable Grout is supplied as a ready to use dry powder encapsulated in a water permeable skin, 2 or 3 capsules per bag. When required for use, the capsules are soaked in water, which is absorbed through the skin, to form a thixotropic non-shrink grout which has a fast rate of strength gain.

Capcem 4/4 F Pumpable Grout capsules are best used with a purpose-made Minova SS1 Grout Pump. Optionally, the grout can be supplied in 10 kg bulk bags for manual mixing.

Grout Performance (typical)		30°C
Pump Life (minutes, minimum):		31
Grout Set Time (minutes) :		34
Pull Strength * 250mm bond		
1Hour (tonnes) :		4.4
4 Hours (tonnes) :		7.0
24Hours (tonnes) :		9.0

It must be noted that rock temperatures will influence rate of set and strength gain; the higher the temperature within the recommended rock temperature range, the faster the set and more rapid the strength gain.

Packaging

Capcem 4/4 F Pumpable Grout capsules are available in soakable capsules or bulk packed for direct mixing with water.

Packaging	Capsule mass	Capsules / bag	Wetted Yield (l)
90 mm x 480 mm capsules	4 kg	2	4.2
65 mm x 430 mm capsules	3 kg	3	3.3
10 kg bag	-	-	5.2

Application instructions

The required number of Capcem 4/4 F Pumpable Grout capsules are removed from their packaging and soaked in clean water for a minimum of 5 minutes then removed from the water and the grout emptied into the Pump. For optimum results it is recommended that the capsule be used immediately after soaking. For full application instructions, refer to the data sheet of the specified Minova Pump.

Alternatively, the grout may be mixed with the correct volume of water (2.6 l per 10 kg bag)

Grout Yield

See table above

Storage/Shelf life

Capcem Pumpable Grout capsules have a shelf life of 12 months when stored in cool, dry conditions in the original packaging.

Precautions

Health and safety

Capcem Pumpable Grout is non-toxic, but like all cements, is alkaline in nature. The use of gloves and goggles is recommended. Splashes should be removed from skin and eyes by washing with plenty of clean water. In the case of splashes in the eyes, medical attention should be sought immediately. Refer to Material Safety Data Sheet.

Technical Support

Minova RSA provides a technical advisory service supported by a team of specialists in the field. The service includes on site assistance and advice on evaluation trials and laboratory work.

Additional information

Minova RSA is a market leader specialising in the supply of high performance chemical products for the mining and tunneling industries.

Minova RSA range of mining products includes anchoring and backfill systems, bagged cement products, high yield grouts, mine sealants, equipment and accessories.

Important note

Minova RSA products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Minova RSA endeavours to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation or information given by it.

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