

**SOFT ROCK MINING / HARD ROCK MINING**

**FB400+**

**THIXOTROPIC ANCHORING GROUT, PUMPABLE TO 100 METRES**

**DESCRIPTION**

FB400+ is supplied as a ready to use, free flowing, blended cementitious powder. It requires only the addition of water in a high shear mixer, to produce a highly thixotropic grout. Grout can be pumped up to 100 metres.

**APPLICATION AND USES**

- Top down cable bolt grouting
- Grouting of long tendons

**ADVANTAGES**

- High early strength, reduces the likelihood of bed separation or slippage of strata
- Thixotropic, can be used in badly broken ground
- Non-shrink, unique expansion system compensates for shrinkage
- High ultimate strength and low porosity ensures long term durability
- Excellent pumpability up to 100m
- Chloride free

**TECHNICAL DATA**

Typical properties using potable water:

<b>Pumping life @ 20°C (minutes)</b>	120
<b>Set time @ 20°C (minutes)</b>	420
<b>Liters water per bag</b>	6-8L
<b>Compressive strength</b>	
<b>Age (days)</b>	<b>(MPa)</b>
1 day	20-25
7 days	45-60
28 days	65-85
<b>Wet Density (kg/m<sup>3</sup>)</b>	1,867-2,030
<b>Max. pumping distance (m)</b>	100



Figure 1: FB400+ Bag 20kg

**APPLICATION METHOD**

**Preparation**

- Drill hole to desired depth, ensuring it is free and clear of loose matter for entire length.
- Position tendon in the hole. Ensure grout tube is at the top of the hole.
- Attach plate and tighten nut, then connect pumping hose.

**Mixing**

Water requirements are as follows:

	<b>Litres/20kg bag</b>
Stage 1	6.0L
Stage 2	1.0L
Total	7.0L
Maximum	8.0L

- Fill mixer with water as per Stage 1
- Start mixer, then slowly add FB400+ powder. If powder addition is too fast, large lumps will form and final mix will be slow reaching uniformity.
- Add remainder of water as per Stage 2 and mix until lump free.
- Use a high shear mechanical mixer of approved design.

**Placing**

- Continuous flow of grout is essential, therefore prepare enough grout for the job prior to placement. Do not try to mix and place grout at the same time.
- Connect the pump to the grout filling tube
- Pump the grout into the bolt hole until the grout emerges from the bottom of the hole.
- The recommended maximum pumping distance is 100 m

**Cleaning**

FB400+ should be removed from tools and equipment immediately after use with clean water.

**SAFETY INSTRUCTIONS AND LIMITATIONS**

At the recommended consistency, the approximate grout yield is as follows:

Yield / 20kg bag
15L

**PACKAGING AND TRANSPORTATION**

FB400+ is supplied in 20kg bags. All bags are packed on stretch wrapped wooden pallets, 60 bags per pallet.

**STORAGE AND SHELF LIFE**

FB400+ has a shelf life of 12 months.

**STORAGE CONDITIONS**

FB400+ should be stored in original packing under dry warehouse conditions. High temperature and high humidity may reduce the shelf life.

**HEALTH AND SAFETY**

For further information see the relevant material safety data sheet on [www.minovaglobal.com.au](http://www.minovaglobal.com.au)

**TECHNICAL SUPPORT**

We provide technical advisory service by a team of specialists in the field. The service includes on site assistance and advice on evaluation trials and laboratory work.

**MANUFACTURER**

Minova Australia Pty Ltd  
George Booth Drive Kurri Kurri, NSW 2327

An ISO 9001:2015 Quality Management  
Certificated Company



FS 603747

**CUSTOMER SERVICE**

**Minova Australia**  
George Booth Drive  
Kurri Kurri NSW 2327 AUSTRALIA

(1800 Minova) 1800 646 682  
(1300 Minova) 1300 646 682  
+61 2 4939 5159 (international)

Email: [sales\\_au@minovaglobal.com](mailto:sales_au@minovaglobal.com)  
Website: [www.minovaglobal.com/apac](http://www.minovaglobal.com/apac)

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