

MINING / CONSTRUCTION

Capcem™ UWP

CEMENTITIOUS INJECTION GROUT

DESCRIPTION

Capcem™ UWP is supplied as a ready-to-use dry powder requiring only the addition of water to produce a free flowing, non-shrink grout which exhibits exceptional resistance to ‘washing-out’ of the cement phase when placed in stationary or moving water.

The material is a mixture of specially processed cements. Additives impart controlled expansion, water reduction, non-washout characteristics and aid uniform mixing, minimising segregation and bleeding whilst assisting the flow characteristics.



APPLICATION AND USE

Capcem™ UWP is a non-shrink cementitious underwater pumping and fissure injection grout to seal wet or underwater substrates without significant ‘wash-out’ of the cement phase. Applications include crack and fissure sealing in mining and drilling operations and underwater concrete repair.

ADVANTAGES

- Gaseous expansion system compensates for shrinkage and settlement in the plastic state
- No risk of significant ‘wash-out’ of cement phase when placed underwater
- Displaces water effectively
- Long-distance pumping into narrow gaps
- High early strength facilitates rapid installation and sealing
- Reliable factory controlled pre-packed components. Only the addition of water is required on site
- Composition allows high early strength development without the use of chlorides.
- Non-flammable

TECHNICAL DATA

COMPRESSIVE STRENGTH AT W : P OF 0.36

Grout temperature	1 day	3 days	7 days	28 days
25°C	6 MPa	32 MPa	39 MPa	55 MPa

MECHANICAL DATA

Details	Value
Flexural strength	5 MPa at 28 days
Coefficient of thermal expansion	11 x 10 ⁻⁶ per °C
Fresh wet density	2300 kg/m ³

SETTING TIME

Dependent on temperature

Grout temperature	Setting time (BS 5075)	
	Initial	Final
25°C	4 hours	5 hours
5°C	12 hours	16 hours

EXPANSION CHARACTERISTICS

Controlled expansion occurs in the unset material to ensure that the grout, when cured, will continue to occupy its original volume within the confines of the void in which it was placed.

APPLICATION METHOD

1. Mixing

The quantity of water required to achieve a fluid consistency must be accurately measured for each mix. Each 25 kg bag requires 9.0 litres of clean water.

A mechanically powered grout mixer must be used. Ensure that the machine capacity and the number of operatives are adequate to enable grouting to be carried out as a continuous operation.

Place the specified amount of water in the mixer. Slowly add the contents of the Capcem™ UWP pack, mixing continuously. When all contents are added, mix continuously for a minimum of 5 minutes making sure that a smooth, even mix is obtained. (Fluidity increases with increased mixing).

2. Placing

Place the grout within 15 minutes of mixing to gain the full benefit of the expansion process. Continuous grout flow is essential. The grout pressure must be maintained at all times so that a continuous flow of grout is achieved.

3. Pumping

Capcem™ UWP may be injected using any standard type of grout pump. Diaphragm, piston and screw feed pumps are all suitable. The grouting injection equipment is to be capable of delivering at a constant pressure of at least 1 bar and if possible, should include a re-circulating

system while pumping is not taking place. An internal diameter of at least 25mm is recommended for the injection line.

Injection of the Capcem™ UWP grout should be carried out in one continuous operation until flow of grout from vents is the same consistency as the injected grout. Vents should then be sealed in the direction of flow.

4. Cleaning

Because of its water resisting properties, equipment used for Capcem™ UWP will be harder to wash than with a cementitious grout. Use of hot water greatly reduces the time required for cleaning.

SAFETY INSTRUCTIONS AND LIMITATIONS

Capcem™ UWP is non-toxic but is alkaline in nature. Gloves and eye protection should be worn. Splashes of grout to the skin or eyes should be washed off with clean water. In the event of splashes in the eyes or prolonged irritation, seek medical advice. See Material Safety Data Sheet.

Product should not be applied below 3°C. Do not use water with temperature in excess of 50°C.

At ambient temperatures above 35°C the grout should be stored in the shade and cool water used for mixing.

PACKAGING AND TRANSPORTATION

Capcem™ UWP: 25kg

Capcem™ UWP 25kg yields 14.5 litres of grout once mixed.

STORAGE AND SHELF LIFE

Capcem™ UWP has a shelf life of 12 months. Store unopened in original bags in dry conditions. Storage outside these guide lines may impair shelf life.

DISPOSAL

Follow local regulations.

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