

Flo-Grout UW

Non-shrink cementitious grout for underwater application



Description

Flo-Grout UW is a cementitious, pre-mixed, pre-packed, high flow, pourable and pumpable grout which when mixed with water will provide a flowing grout with high resistance to cement washout when placed in tidal zone or under water.

Applications

Flo-Grout UW is ideally designed for use in the following applications:

- ▲ Under water micro concrete repair and grouting.
- ▲ Bridge column and jetty piers.
- ▲ Repair to concrete piles.
- ▲ General strengthening by jacketing.
- ▲ Repair and grouting of dams.

Advantages

- ▲ Excellent non-shrinkage characteristics.
- ▲ No risk of cement washout when placed underwater.
- ▲ High early strength.
- ▲ Extremely dense and low permeability.
- ▲ High bond strength.
- ▲ Free flowing.
- ▲ Chloride free.

Method of Use

Substrate Preparation

- ▲ The Substrate should be sound, clean and free from contamination.
- ▲ Surface laitance curing compound and other contaminations should be removed by sand/grit blasting or manually by wire brush or any effective method.

Mixing

To ensure proper mixing, a mechanically powered mixer or drill fitted with suitable paddle should be used. Depending on the consistency required, the addition of 4.5 litre (Flowable) of clean water should be added to a clean container.

The 25 kg powder is then added slowly to the water while mixing continuously with a low speed mixer/drill (400 - 600 rpm).

Technical Properties:

Compressive strength:	≥ 22 MPa @ 1 day
ASTM C109/109M-11	≥ 34 MPa @ 3 days
	≥ 38 MPa @ 7 days
	≥ 45 MPa @ 28 days
Tensile bond strength:	≥ 2.5 MPa
Colour:	Grey
Setting time:	
Initial	≈ 5 – 6 hr
Final	≈ 6 – 7 hr
Expansion characteristics:	1 - 4%
ASTM C827/C827M-10	
Fresh wet density:	≈ 1.92 g/cm ³
Flow:	≥ 20 cm
BS 890	

Note: Compressive cubes were tested under water and restraintment to simulate site conditions. Also typical properties are @ 4.5 litre water/25 kg @ 25°C.

Mixing should be continued for 3 minutes until a uniform consistency is obtained.

Formwork:

As the mixed grout possesses high fluidity characteristics, all formwork and shutters should be water tight. This can be obtained by sealing underneath the formwork by using Flo-Grout UW mixed to a stiff consistency or any other suitable mean.

Also for casting under water, adequate gap between formwork and substrate should be allowed for tremmie pipe while casting vertically.

Curing

Curing is not needed for fully sub-merged conditions. However, when cast above water, it should be treated in a manner similar to concrete. Curing can be conducted by either using concrete curing compound such as Setseal 22 or by using wet hessian and polyethylene.

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Notes:

- ▲ At low temperatures (below 8°C), warm water is recommended to achieve the early strength. And the formwork is recommended to be kept longer time.
- ▲ At high temperatures (35°C and above), cold water (less than 20°C) must be used for mixing.

Cleaning

All tools should be cleaned immediately after finishing with water. Hardened materials can be cleaned mechanically.

Packaging

Flo-Grout UW is available in 25 kg bags.

Thicknesses and Size Limitations

Flo-Grout UW can be applied in a single layer at thicknesses between 10 – 100 mm when poured above water. When poured under water, thicknesses up to 200 mm can be placed in a single layer. For a greater thicknesses, a washed aggregate between 5 - 12 mm should be added at a maximum ratio of 1:1 by weight.

Yield

Approximately 14.5 – 15 litre/25 kg bag depending on consistency.

Storage

Flo-Grout UW has a shelf life of 12 months from date of manufacture if stored at temperatures between 2°C and 50°C.

If these conditions are exceeded, DCP Technical Department should be contacted for advice.

Cautions

Health and Safety

As Flo-Grout UW contains Portland cement and sand, Flo-Grout UW may cause irritation to skin or eyes.

In case of accidental contact with eyes, immediately flush with plenty of water for at least 10 minutes and seek medical advice if necessary.

For further information refer to the Material Safety Data Sheet.

Fire

Flo-Grout UW is nonflammable.

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Note:

We endeavour to ensure that any information, advice or recommendation we may give in product literature is accurate and correct. However, because we have no control over where and how products are applied, we cannot accept any liability arising from the use of the products.

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