

High Flow Precision Grout

Information

Ultracrete HF is a Dtp 2601 specification high flow precision grout. Suitable for voids from 10–100mm, a very dense low permeability material, which does not suffer damage from frost attack and freeze/thaw conditions.

Preparation

Apply the grout to a sound, clean, uncontaminated, dust free surface. Concrete should be roughened to provide a good key. Metal surfaces must have the rust and scale removed, be free from oil, grease and paint. Removable metal shims should be treated with a light oil coating to prevent damaging the grout when set. Pre-soak the concrete surface with clean water for at least 4 hours (the longer the better) prior to placing. Use an airline to remove surplus water, paying particular attention to anchor pockets and recesses. Do not let the surface dry out before grout application. Formwork shuttering should be of sufficient strength, anchored securely and sealed to prevent any leakages.

Mixing

Mixing is best achieved in a force action grout mixer or by slow speed drill fitted with a paddle attachment. Larger quantities will require a high shear vane mixer.

Flowable mix: Up to 4.5 litres of water.

Fluid mix: Up to 4.8 litres of water.

Measure the amount of water into the mixer to provide the consistency required, slowly adding the **Ultracrete HF** powder to the water. Mix continuously for 5 minutes ensuring a smooth even consistency is obtained. It is essential that machine mixing capacity and labour available is adequate to enable the grouting operation to be carried out continuously. This may require a holding tank with provision for gentle agitation, to maintain fluidity.

Precaution

Ultracrete HF is based on Portland cements and good concreting practice with regard to placing and curing, especially under winter conditions, must be observed.

When the air or contact surface temperatures are 5°C or below on a falling thermometer, warm water (30°–40°C) is recommended to accelerate strength development. For ambient temperatures below +5°C the grout consistency should be flowable. The formwork should be maintained in place for at least 36 hours. At temperatures above 35°C mixed grout should be stored in the shade. Cool water (below 20°C) should be used for mixing the grout.

Specification Performance Clause

All grouting must be carried out with a pre-packaged, non-shrink cementitious grout manufactured and supplied by a registered firm under BS57500: Part 2, ISO 9002, EN 29002 Quality Management System. The grout shall be non-metallic, chloride free and shall contain non-reactive aggregates, and fully comply with clause 2601 for Highways Works.



Features & Benefits

Ultracrete HF is a cementitious high strength flowable grout designed to accommodate depths of 10-100mm.

- High strength.
- High flow.
- Can be pumped or poured.
- Shrinkage compensated.
- Initial set 8 hours: Final set 11 hours 25 minutes.
- Absence of reactive materials eliminates corrosion and staining.
- Suitable for pumping or pouring.
- Complies to specification for "Highways Works" Clause 2601.
- Manufactured under a Quality Management System BS EN ISO 9001: 2000.

Recommended Applications

Bridge bearing grout, stanchion base plates, machine beds and parapet legs.

Related Products

Ultracrete ER-R10s Epoxy Resin Grout.

It shall be mixed with clean water to the required consistency and not exhibit any bleed or segregation. The compressive strength of the grout must exceed 40N/mm² at 7 days, and 60N/mm² at 28 days. The cement content shall not be less than 400kg/m³. The water/cement ratio shall not be more than 0.45. The storage, handling and placement must be in strict accordance with the manufacturers instructions.

Chemical Testing

The following results were obtained from the powdered **Cemflow HF**, tested independently by SGS (UK) Ltd. **Acid Soluble Chloride as Cl** – BS 1881: Part 124: 1983 <0.002% by weight of sample **Acid Soluble Sulphate as SO₃** – BS 1881: Part 124: 1983 **1.9%** by weight of sample **Acid Soluble Total Alkali as Na₂O** – BS 1881: Part 124: 1983 0.31% **by weight of Sample Cement Content** – BS 4551: 1980 Without Lime 44.3% by weight of sample.

Physical Testing – Ultracrete HF (formerly known as Cemflow HF)

The following results were obtained at a fluid consistency (i.e. 4.8L of water per 25kg bag), tested by SGS (UK) Ltd at 20°C. (Report Ref: 6580/910/M). (This product was formerly known as Cemflow HF)

Test Methods	Test Age	N/mm ²
Compressive Strength BS 1881: Part 116: 1993	1 day	29.00
	7 days	59.50
	28 days	70.00
Flexural Strength	7 days	9.25
	28 days	9.55
Initial Setting Time: BS 4550: Part 3: 1978	8 hours	
Final Setting Time: BS 4550: Part 3: 1978	11 hrs 25 min	
Static Modulus of Elasticity	ASTM 469-87A 23kN/mm ²	
Flow Characteristics	(Efflux Time) – ASTM C 939-87 25.25 seconds	
Expansion Characteristics	ASTM C 87 0.35% – 1.1% Unrestrained	
Fresh Wet Density	BS 1881: Part 107: 1983 2160Kg/m ³	

Unit/Packaging	Ultracrete HF is supplied in 25kg polythene lined bags. Deliveries from our factory are on shrink wrapped pallets.
Shelf Life	Store in a dry place at temperatures between 5°C – 35°C. Shelf life in correct conditions for sealed bags is 6 months. High temperatures and high humidity will lead to a reduced shelf life.
Yield	Allowance should be made for wastage when evaluating quantities required. The approximate yield per 25kg bag for different consistencies are:
Flowable	13.25 Litres.
Fluid	13.50 Litres.

For updated Material Safety Data information visit www.instarmac.co.uk

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