Nugrout Superflow

Free Flowing Cementitious Grout

Description

A high strength free flowing cementitious grout based on non-reactive aggregates, shrinkage compensated Portland cements and selected admixtures which produce a chloride free grout, containing no corrosive metallic additives. Nugrout Superflow contains a maximum nominal size aggregate of 2mm and is suitable for many different grouting, bedding and void filling applications. Nugrout Superflow has been formulated to comply with the requirements of EN1504 Part 3 Class R4.

Advantages

- Non-shrink through controlled expansion.
- High early compressive and flexural strengths.
- Resistant to vibration and impact.
- Excellent bond strength to reinforcement steel and concrete.
- Contains no corrosive metallic additives.
- Tolerant to freeze/thaw cycles.
- Excellent flowability and placement characteristics.

Applications

- Production of bearing plinths.
- Crane rail bedding and alignment.
- Grouting of starter bars, holding down bolts, etc.
- Bedding of pre-cast concrete beams.
- Repair to spalled and cracked concrete.
- Grouting of machinery and turbines etc.

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EN 1504-3
Concrete repair product for structural repair
CC Mortar (based on hydraulic cement)

Compressive strength	Class R4 (>45 MPa)
Chloride ion content	≤0.05 %
Adhesive bond strength	>2.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	>2.0 MPa
Carbonation resistance	Passes
Elastic modulus	>20 GPa
Reaction to fire	Class A1
Dangerous substances	Complies with 5.4

Technical Information

Water Addition (Per 25kg pack)	2.75-4.0 Litres
Typical Density	2150-2300 kg/m^3
Efflux test/Flow Cone (ASTM C939-02)	20-35 Seconds
Application Thickness	10mm to 80mm

Surface Preparation

Surfaces should be clean and free from loose and unsound material. Any oil and grease should be removed using *Desolve*. Concrete should be roughened and all laitance removed.

Surfaces should be thoroughly wetted for a period of 2 hours and any surplus water removed before placement. Allow to become surface dry thus obtaining a saturated, surface dry condition.

Technical Datasheet

Technical properties of Nugrout Superflow.

Properties	Standard	Performance Requirement	Declared Value
Appearance			Grey Powder
Chloride-ion content	EN1015-17	≤0.05%	<0.05%
Maximum aggregate size			2mm
Layer thickness Minimum/maximum			10mm-80mm*
Working time			45-60 Minutes
Hardening Time			4-18 Hours
Expansion	ASTM C827-01		0.25-2.5%
Temperature for application			5°C to 35°C
Compressive Strength	EN 12190	≥ 45 MPa	30 MPa @ 24 Hour 40 MPa @ 3 Days 48 MPa @ 7 Days 60 MPa @ 28 Days
Elastic Modulus, in Compression	EN13412	≥ 20 GPa	20 GPa
Flexural Strength	BS6319-3		8.3 MPa
Elastic Modulus, in Flexure	BS6319-3		22 GPa
Tensile Strength	BS6319-7		3.8 MPa
Adhesion - Concrete	EN1542	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	EN13687-1	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after thunder showers (30 cycles)	EN13687-2	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after dry cycling (30 cycles)	EN13687-4	≥ 2.0 MPa	≥ 2.0 MPa
Skid Resistance	EN13036-4		Class 1
Carbonation resistance	EN13295	d_k ≤ ref. concrete	d_k < ref. concrete
Capillary absorption	EN13057	≤ 0.5 kg/m^2/h$^{-0.5}$	≤ 0.5 kg/m^2/h$^{-0.5}$
Cracking tendency	Coutinho Ring Test		No cracking after 180 days

* For applications greater than 80mm please refer to technical department.

Note: Strengths are based on 4.0 litres water addition.

Technical data shown are statistical results and do not correspond to guaranteed minima.

Tolerances are those described in appropriate performance standards.

Mixing

Mixing may be carried out in a forced action or pan type paddle mixer of a size suitable for the quantity to be prepared for use at one time. The part mixing of bags of material is not recommended. The mixer should be of a type that will thoroughly mix the material and water without leaving residual unmixed material, or cause 'balling'.

The contents of each bag of Nugrout Superflow requires mixing with clean water only. The mixer drum is to be clean and free from the remains of previous mixes. Thoroughly wet the inside of mixer drum and drain off excess water. Measure out mixing water 2.75-4.0 Litres per 25kg bag. Add two thirds of the mixing water into the drum. With the mixer rotating add the full contents of the bag and allow to mix for one minute. Add all or part of the remaining water and allow to mix until a homogeneous mix of the correct consistency is produced, up to 4 minutes depending on the type of mixer used. Pour mix into a container and allow to de-air for 2-3 minutes. Use as required.

Application Instructions

Nugrout Superflow may be placed by pouring, remembering that flowability decreases with increases in temperature and time. Always mix sufficient material to complete placing in one uninterrupted pour.

Place the product from one side only so as to avoid air inclusions and ensuring continuous free flow of the grout.

Grouting should not take place in temperatures of 5^{o}C or below, unless steps have been taken to protect the concrete and surrounding areas from these conditions.

Where formwork is involved it is essential that it is well sealed to prevent grout loss and coated with Chemlease to obtain an easier strip.

Curing

The placed material must be cured immediately after finishing, using good concrete practice. The preferred method is to apply one of Nufins curing compounds directly onto the grouted area. These have been designed specifically to maximise the performance of the Nugrout range. If this is not possible then the grout should be protected with polythene sheeting which has been taped down to form a draught proof area.

Packaging

Nugrout Superflow is supplied in 25kg polythene lined sacks, approximate yield is 13.2 litres.

Storage

Store in cool dry conditions.

Health & Safety

Nugrout Superflow does not present any undue hazard and is non-toxic. As with all cementitious materials it is slightly alkaline, therefore gloves and goggles should be worn and any material should be washed from the skin and eyes with clean water before it dries.

Limitations

Excessive water additions will reduce strengths and can cause segregation within the mix which may limit the flow.

Technical Support

Through our technical department and laboratories we can offer a comprehensive service to specifiers and contractors. Technical representatives are available to provide further information and arrange demonstrations.

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