

Technical Datasheet

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 EN 1504 Part 3 Class R4.

Advantages

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

Applications

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

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	10-80 mm

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Nufins, Kingston House, 3 Walton Road, Pattinson North, District 15, Washington, Tyne & Wear. NE38 8QA 23 0086-CPR-774186	
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

Surface Preparation

Surfaces should be clean and free from loose, unsound material and dust. Oil, grease and other contaminants should be removed.

A saturated, surface dry condition is required before applying Nugrout Superflow. To achieve this, surfaces should be thoroughly saturated with clean water for a minimum period of 2 hours and any surplus water removed before placement.



Technical properties of Nugrout Superflow

Properties	Standard	Performance Requirement	Declared Value
Appearance			Grey powder
Chloride-ion content	EN 1015-17	≤0.05 %	<0.05 %
Maximum aggregate size			2 mm
Layer thickness			10mm to 80 mm*
Working time @ 20°C			45-60 minutes
Hardening time @ 20°C			4-18 hours
Expansion	ASTM C827-01		0.25-2.5 %
Application temperature			5°C to 35°C
Compressive strength @ 20°C	EN 12190	≥45 MPa	30 MPa @ 24 hours 40 MPa @ 3 days 48 MPa @ 7 days 60 MPa @ 28 days
Elastic Modulus in compression	EN 13412	≥20 GPa	20 GPa
Flexural strength	BS 6319-3		8.3 MPa
Elastic Modulus in flexure	BS 6319-3		22 GPa
Tensile strength	BS 6319-7		3.8 MPa
Adhesion to concrete	EN 1542	≥2.0 MPa	≥2.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	EN 13687-1	≥2.0 MPa	≥2.0 MPa
Adhesion after thunder showers (30 cycles)	EN 13687-2	≥2.0 MPa	≥2.0 MPa
Adhesion after dry cycling (30 cycles)	EN 13687-4	≥2.0 MPa	≥2.0 MPa
Skid resistance	EN 13036-4		Class 1
Carbonation resistance	EN 13295	$d_k \leq \text{ref. concrete}$	$d_k < \text{ref. concrete}$
Capillary absorption	EN 13057	$\leq 0.5 \text{ kg/m}^2 \cdot \text{h}^{0.5}$	$\leq 0.5 \text{ kg/m}^2 \cdot \text{h}^{0.5}$
Cracking tendency	Coutinho Ring Test		No cracking after 180 days

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

Note: Strengths are based on 4.0 litres water addition, cured at 20°C unless otherwise stated.

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

Tolerances are those described in appropriate performance standards.

Mixing

Part mixing of bags is not recommended. The mixer should be of a type that will thoroughly blend the material and water, without leaving residual unmixed material or cause 'balling'. Mixing may be undertaken with a forced action mixer or pan type paddle mixer, the size of which should be suitable for the quantity to be prepared for use at any one time. The use of an appropriate high torque slow speed drill and paddle may be considered as an alternative, taking care not to entrain excess air.

Nugrout Superflow requires mixing with clean water only. No other additives are required. The mixer drum should be clean and free from the remains of previous mixes.

1. Thoroughly wet out the mixer drum and discard excess water.
2. Measure out mixing water; 2.75 - 4 litres per 25kg bag, relevant to intended use.
3. Place two thirds of the required water into the drum.
4. With the drum rotating, add the full contents of the bag and allow to mix for one minute.
5. Add all or part of the remainder of the water and allow to mix for up to a further 4 minutes (depending on the type of mixer used), until a lump-free homogenous mix is achieved.
6. Pour the mixed grout into a suitable container and allow this to de-aerate for 2 - 3 minutes. Agitate before pouring in case of settlement.

Application Instructions

Nugrout Superflow is placed by pouring, remembering that the flowability decreases with increases in temperature and time. Always mix sufficient material to complete placing in one uninterrupted pour to achieve a monolithic body of material.

Place the product from one side only to avoid air inclusions and to ensure a continuous free flow of the grout.

Grouting work should not proceed in temperatures of 5°C or below, unless measures are taken to protect material and adjacent areas.

Where formwork is involved, it is essential that all gaps are well sealed to prevent grout loss. Formwork should be coated with *Chemlease* to obtain an easier strike.

Cleaning

Mixing equipment and tools should be cleaned regularly through the day to avoid product build up, using clean water.

Curing

Curing should be employed immediately after finishing, as work progresses. Nugrout Superflow should be protected from rapid drying out, using normal methods of curing such as taped down polythene sheeting, and wet hessian if required, in line with good concreting practise. A UV degradable resin based curing membrane such as *Chemcure R90* may be used, but this must be fully removed by mechanical equipment if the surface is going to receive subsequent treatments.

Packaging

Nugrout Superflow is available in 25kg polythene lined bags (yield approximate 12.5 litres).

Storage

The shelf life is 6 months when stored unopened in dry, normal conditions and away from direct sunlight. Protect from frost.

Health & Safety

Product Safety Data Sheets (SDS) are available from Nufins. SDS sheets are provided to help customers satisfy their safe handling, use and disposal needs as well as assist with any conformance requirements made locally by health and safety regulations.

SDS are continually updated to provide the latest information to our customers. We therefore recommend contacting our head office to obtain the most recent and accurate SDS before handling and using any product.

Limitations

Grout should not be installed in temperature below 5°C unless measures have been taken to protect materials in storage and prior to use. It is recommended that materials are stored above 10°C and mixing water is warmed at 10-20°C.

In addition, materials should not be installed in temperatures of 3°C or below on a falling scale, without frost protection measures.

Protect installed material from adverse weather and frost. If it is necessary, the work area should be tented and heated during and after placement.

Please contact Nufins technical department for further advice.

Disclaimer

The information contained herein is to the best of our knowledge true and accurate and is given in good faith but without warranty. The user will be deemed to have satisfied themselves independently as to the suitability of our products for their own particular purpose. In no event shall Nufins be liable for consequential or incidental damages.

Users must always refer to the most recent issue of the Technical Datasheets, copies of which will be supplied on request.

Technical Support

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