

# NUGROUT HI SPEC

## Free Flowing Cementitious Grout

### Description

A high strength free flowing cementitious grout based on non-reactive aggregate, low alkaline shrinkage compensated Portland Cements with selected admixtures which produce a chloride free grout, containing no corrosive metallic additives. Nugrout Hi Spec contains a maximum size aggregate of 2mm and is suitable for grouting thicknesses over 5mm. Nugrout Hi Spec complies with the requirements of the Department of Transport Specification For Highway Works Clause 2601.4.

Tested in accordance with BS EN1504.

### Applications

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

### Advantages

- Has controlled expansion and is non-shrink.
- Excellent early compressive and flexural strengths.
- Resistant to vibration and impact.
- Material can be poured, pumped, vibrated or rodded.
- Excellent bond strength to both steel and concrete.
- Requires only addition of clean water.
- Resistant to oil and water.
- Excellent flowability and placement characteristics.

### Technical Information

Typical Compressive Strength Results in N/mm<sup>2</sup> using 100 mm cubes tested in accordance with BS 1881 Part 116.

Age	N/mm <sup>2</sup>
24 hours	30
3 days	51
28 days	75
Initial Set	2-3 hours
Typical Density:	2150 - 2300
Cement Content:	>400 kg/m <sup>3</sup>
Chloride Content:	<0.1%
Free Water/Cement Ratio @ 4 ltr per 25 kg:	0.40
Expansion ASTM C827:	0.3 - 1.0%
Flow Trough:	450mm
DTP Spec cl 2601 (6th Edition):	in 6 secs
Flow Cone:	
DTP Spec cl 2601 (7th Edition):	35-45 seconds
Flexural Strength (BS6319:Pt 3):	5.8 N/mm <sup>2</sup>
Secant Module of Elasticity	
in Flexure:	24 GN/m <sup>2</sup>
Application Thickness:	5mm to 100mm. For application thicknesses above 75mm please refer to technical department.

Note: Strengths based on 4 litre water addition.

### Surface Preparation

Surfaces should be clean and free from loose and unsound material. Oil and grease should be removed using Desolve. 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.

## **Mixing**

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

The contents of each bag of Nugrout Hi Spec requires mixing with clean water only, no other ingredients are required.

The mixer drum is to be clean and free from the remains of previous mixes.

Thoroughly wet inside the mixer drum and drain off any excess water.

Measure out a quantity of clean water into a suitable container 2.75 - 4 litres per 25 kg bag depending upon consistency required, and place two thirds of this in the mixer drum.

With mixer rotating, add full contents of dry mix to drum and allow to mix for 1 minute.

Add remainder of water and allow to mix for up to 4 minutes depending on the type of mixer used.

Pour mix into container(s) and allow to de-aerate for 2-3 minutes.

Use mix as required.

Nugrout Hi Spec may also be mixed into a trowelable consistency although the water addition is critical needing careful control. The addition rate is approximately 2.4 litres per 25 kg bag.

## **Application Instructions**

The mixed material should be placed by pouring or pumping, remembering that flowability decreases with time and temperatures. Always mix sufficient material to complete placing in one uninterrupted pour.

Place the product from one side only so as to avoid entrapped air and ensure continual free flow of the material.

When pumping, the addition of excess water is not necessary as this could cause segregation of the mix and inhibit pumping.

Grouting should not take place in temperatures at 5°C or lower unless steps have been taken to protect the concreted areas from these conditions.

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

## **Low Temperature Working**

Grouting should not take place in temperatures below 5°C unless steps have been taken to protect grouted area in these conditions. At temperatures below 10°C the Nugrout Hi Spec should be maintained in a store at 15 to 20°C for a minimum of 24 hours and the mixing water should be between 20 and 25°C.

## **Curing**

The placed material must be cured immediately after finishing using good concrete practice. The preferred method is to apply Nufins Curing Compounds directly onto the grouted area. If this is not possible then the grout should be protected with polythene sheeting which is taped down to form a draught proof area.

## **Packaging**

Nugrout Hi Spec is supplied in 25 kg polythene lined sacks, approximate yield 13 litres.

## **Storage**

Store in cool dry conditions.

## **Health & Safety**

Nugrout Hi Spec does not present any undue hazard and is non-toxic, however, 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 before it dries with clean water.

## **Limitations**

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

Concreting should not take place in temperatures below 5°C unless steps have been taken to protect concreted areas in these conditions.

## **Technical Support**

Through our technical department and laboratories we can offer a comprehensive service to specifiers and contractors.

Technical representatives are available throughout the UK to provide further information and arrange demonstrations.



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