

POWERGROUT - NS1



High Performance Precision Grout

Technical Data Sheet

Series: PGNS10007

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Supersedes all earlier TDS

Description

UltraTech **POWERGROUT-NS1** is a cement based non-expanding polymer enriched high performance, high strength, high quality binder for precision grouting applications. **POWERGROUT-NS1** is developed by using special polymers, additives and selected fillers. Addition of well graded coarse aggregates of up to 20mm size is possible for higher volume applications.

Specification

Technical Parameters complies with following Standards:

ASTM C1107, ASTM 190, ASTM C 940, ASTM C 469, ASTM C 348, IS 4031, IS 2770, IS 5816

Features & Benefits

- ✓ Ready to mix Single component system, no hassles of mixing the ingredients
- ✓ Excellent bond strength
- ✓ Non Shrink; Non Expandable Grout
- ✓ Economical with coarse aggregates for higher volume applications
- ✓ Subsequent usage time in 24 hours
- ✓ Ultimate compressive strength
- ✓ Consistent in quality
- ✓ Enhanced flow properties and pot life
- ✓ Self-Compacting in nature.
- ✓ No bleeding and better consistency.

Areas of Application

UltraTech **POWERGROUT-NS1** is recommended for grouting with design strength of M100 for foundation base plates, machine foundations and beds which demand high early strength, as barrier material for strong rooms and vaults, pot-hole repairs of concrete roads and surfaces. Suitable for harbors and airports for concrete area repairs & maintenance. Highly recommended for high strength precast element manufacturing.

Method of Application:

1. Surface Preparation

- Prepare the surface before the application of UltraTech **POWERGROUT-NS1** by removing oil, bond inhibiting agents, dirt, dust and laitance with suitable methods like by using wire brush, water jetting, mopping etc.
- Proper checking of reinforcement and other elements to be grouted need to be carried out as per the structural requirements before placing UltraTech **POWERGROUT-NS1**. The shuttering has to be proper without any gaps or loose materials to ensure nil leakages during usage of UltraTech **POWERGROUT-NS1**.
- Appropriate anti corrosion agents to be applied over the old and renewed reinforcement bars and metal areas before grouting.

2. Mixing

- UltraTech **POWERGROUT-NS1** requires 16.5-17% of water by weight of material.
- Add UltraTech **POWERGROUT-NS1** to the measure quantity of water with constant stirring using a mechanical mixing device. Mix to a thick lump free consistency.
- Allow to stand for 2 minutes for the mix to mature and then remix to use. Do not add any extra water to alter the mix consistency or to extend the pot life.
- Further water additions will hamper the strength and adhesion properties of UltraTech **POWERGROUT-NS1**.

3. Application

- Use the mixed UltraTech **POWERGROUT-NS1** to the prepared substrate using the appropriate pouring funnels and chutes.
- UltraTech **POWERGROUT-NS1** should not be vibrated with any mechanical vibrators as it is self-compacting by itself.
- Any external vibrations will segregate the mix and there are chances of changes in the product performance from the designed properties.
- No water curing is required for internal area grouting; whereas water curing has to be adopted for 3 days in external conditions and during extreme site conditions.

Height v/s Depth Table (Flowable):

Grout Consistency	Max flow distance in mm		
	50mm	100mm	250mm
Gap Width (mm)	Head	Head	Head
30	350	1000	1500
40	500	1500	2000
50	900	2000	3000+

Technical Data:

Wet density	2250-2350 kg/cum
Max size of aggregates suggested along with UltraTech POWERGROUT - NS1	Well graded up to 20 mm
Flowable consistency water ratio (IS 516-1959)	16.5-17 % without coarse aggregates 8-9 % with coarse aggregates
Size of the cubes to test POWERGROUT - NS1	70.6 mm * 70.6 mm
Size of the cubes to test POWERGROUT - NS1 with coarse aggregates	150 mm * 150 mm
Percentage of coarse aggregates which can be blended	1 part of well graded up to 20mm coarse aggregate and 1 part of POWERGROUT - NS1 by weight.
Type of mixing	Mechanical mixer
Subsequent usage time	24 hours
Expansion % (ASTM C 940)	Nil
Abrasion resistance mm (IS 1237)	0.50
Rapid chloride penetration value (ASTM 1202-03)	Moderate
Bleeding % (ASTM C 940)	Nil
Chloride content	Nil
Pot life	45 minutes
Yield per 40 kg bag	19 - 20 litres @ 13% w/p ratio without aggregates
Flexural Strength @ 28 Days MPa (ASTMC 348)	12-14
Linear co-efficient of Thermal expansion mm/mm/Deg C (ASTM C 531)	1 to 2 x10 ⁻⁶
Modulus of Elasticity GPa (ASTM C 469)	53-55
Pull Out Bond Strength MPa @ 28 days (IS 2770)	8-9
Moh's Hardness No(IS 13630 Part 13)	8-9
Tensile Strength @ 28 days MPa (ASTM 190)	8.5
Split Tensile Strength MPa @28Days (IS 5816-1999):	8

Compressive strength N/mm ² (IS 4031 Part 6)	1 Day	40-45 N/mm ²
	3 Days	65-75 N/mm ²
	7 Days	85-95 N/mm ²
	28 Days	Up to 100 @ 16% water ratio

NOTE

Allow a minimum of 24 hours for the subsequent usage. Do not use if temperatures are likely to drop to below 5°C or exceed 50°C. For temperatures below 20°C allow UltraTech **POWERGROUT-NS1** to harden for an extended period of time.

The technical data provided in this technical data sheet is as per our internal lab testing and may vary as per the actual method of application at sites.

PACKAGING

25 kg WPP bags

40 Kg HDPE Laminated bags

SHELF LIFE

UltraTech **POWERGROUT-NS1** has a shelf life of 6 months from the date of manufacture. Store at cool and dry place.

SAFETY DIRECTIONS

UltraTech **POWERGROUT-NS1** is non-toxic. Use of gloves and goggles recommended. Any splashes to the skin or eyes should be washed off with clean water.

In case of prolonged irritation, medical advice should be sought. UltraTech **POWERGROUT-NS1** is non-flammable.

Other Product Categories available with **UltraTech Building Products Division**

- ✓ Aerated Lightweight Concrete Blocks
- ✓ Jointing mortar, Plasters and repair mortars
- ✓ Waterproofing Solution
- ✓ Tile Adhesives
- ✓ Grouting & Anchors
- ✓ Floor Screeds

DISCLAIMER

Information provided on this data sheet is the guideline for usage. Users are advised to undertake a trial for product suitability prior to its full scale usage. There is no implied guaranty / warranty for the results and the company is not liable for any consequential damages.

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