



Series: PGNS10009
Month: December 2017
Supersedes all earlier TDS

POWERGROUT-NS1

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ULTRATECH

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Description

UltraTech **POWERGROUT-NS1** is a cement based non-shrink, 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.

Variants

POWERGROUT - NS1 FLOWABLE
POWERGROUT - NS1 NORMAL

Specification

Technical Parameters complies with following Standards: **ASTM C1107, ASTM 190, ASTM C 109, ASTM C 157, ASTM C 940, ASTM C 469, ASTM C 348, IS 4031, IS 2770, IS 5816, IS 1237, IS 13630**

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 100 MPa for foundation base plates, machine foundations and beds which demand high early strength, as barrier material for strong rooms and vaults.

Suitable for harbors and airports for concrete area repairs & maintenance. Highly recommended for high strength precast element manufacturing.

METHOD OF APPLICATION

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 leak proof without any gaps or loose materials to ensure nil leakages during usage of UltraTech **POWERGROUT-NS1**
- Appropriate anti corrosion and bonding agents to be applied over the old and renewed reinforcement bars and metal areas and old-new concrete joints before grouting

Mixing



- UltraTech **POWERGROUT-NS1** requires 16-17% 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**
- Addition of up to 12 mm down well graded aggregate in 1:1 ratio by weight can be done as per the site requirement
- For specific high volume applications addition up to 20 mm down well graded aggregates can also be used at 1:1 ratio

Application



- Use the mixed UltraTech **POWERGROUT-NS1** to the prepared substrate using the appropriate pouring technique
- 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
- Curing is required only for extreme climatic condition of application

TECHNICAL DATA AS PER RELEVANT IS AND ASTM STANDARDS

Wet density	2250-2350 Kg/m ³
Max size of aggregates suggested along with UltraTech POWERGROUT-NS1	Well graded up to 20 mm
Flowable consistency water ratio (IS 516 -1959)	16-17% without coarse aggregates 8-9% with coarse aggregates
Percentage of coarse aggregates which can be blended	1 part of well graded up to 12 mm 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 @ 16% w/p ratio	19-20 litres
Flexural Strength @ 28 Days MPa (ASTM C 348)	12-14
Linear co-efficient of Thermal expansion mm/mm/Deg C (ASTM C 531)	1 to 2 x 10 ⁻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

Table for Compressive Strength MPa @16% w/p

Test Method	ASTM Method	IS Method
Cube Size	50 mm	70.6 mm
1 day	40-45	30-35
3 day	60-65	50-55
7 day	80-85	70-75
28 day	Up to 100	90-95

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. Consult UltraTech Building Products Division Technical Services Cell for any further technical assistance.

Packaging

40 Kg bags

Shelf Life

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

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.

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 immediately. 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

- Tile Adhesives
- Micro Concrete and Repair Mortar
- Industrial/Precision Grout and Anchors
- Plasters and Jointing Mortar
- Floor Screeds
- Autoclaved Aerated Lightweight Concrete Blocks



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