



## Description

UltraTech **POWERGROUT NS3** is a cement-based, non-shrink, non-expanding, polymer enriched, high performance, high early strength and high quality binder for precision grouting applications. **POWERGROUT NS3** is developed by using special polymers, additives and selected fillers.

## Variants

POWERGROUT - NS3 FLOWABLE

## Specification

Technical Parameters complies with the 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

## Areas of Application

UltraTech **POWERGROUT NS3** is recommended for grouting with design strength of 60 MPa for micro piles and pile caps, shear wall bond beams, for fixing and anchoring the precast elements, for manufacturing of high strength pavers and blocks, for fixing rails, anchors, fasteners, etc.

## METHOD OF APPLICATION

### Surface Preparation



- Prepare the surfaces before the application of UltraTech **POWERGROUT NS3** 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 NS3**  
 The shuttering has to be leak-proof without any gaps or loose materials to ensure nil leakages during the usage of UltraTech **POWERGROUT NS3**
- Appropriate anti-corrosion and bonding agents to be applied over the old and renewed reinforcement bars and metal areas and over old-new concrete joints before grouting

### Mixing



- UltraTech **POWERGROUT NS3** requires 14-15% of water by weight of material
- Add UltraTech **POWERGROUT NS3** to the measured 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 NS3**
- Addition of upto 12 mm down well graded aggregate in 1:0.5 ratio by weight can be done as per the site requirement
- For specific high volume applications addition upto 20 mm down well graded aggregates can also be used at 1:0.5 ratio

### Application



- Use the mixed UltraTech **POWERGROUT NS3** to the prepared substrate using the appropriate pouring techniques
- UltraTech **POWERGROUT NS3** should not be vibrated with any mechanical vibrators as it is self-compacting by itself and 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 <sup>3</sup>  |
| Max size of aggregates suggested along with UltraTech POWERGROUT NS3 | Well graded upto 20 mm   |
| Flowable consistency water ratio (IS 516 - 1959)                     | 14-15% without coarse aggregates<br>9-10% with coarse aggregates                           |
| Percentage of coarse aggregates which can be blended (1:0.5)         | 1/2 part of well graded upto 12 mm coarse aggregate and 1 part of POWERGROUT-NS3 by weight |
| Type of mixing   | Mechanical mixing  |
| Subsequent usage time  | 24 hours   |
| Expansion % (ASTM C 940)   | Nil  |
| Abrasion resistance mm (IS 1237)                                     | 0.30   |
| Rapid chloride penetration value (ASTM 1202 - 03)                    | Moderate   |
| Bleeding % (ASTM C 940)  | Nil  |
| Chloride content   | Nil  |
| Pot life   | 60 minutes   |
| Yield per 40 Kg bag @ 15% w/p ratio                                  | 19-20 L  |
| Flexural Strength @ 28 days MPa (ASTMC 348)                          | 9-10   |
| Linear co-efficient of Thermal expansion mm/mm/Deg C (ASTM C 531)    | 1 to 2x10 <sup>-6</sup>  |
| Modulus of Elasticity GPa (ASTM C 469)                               | 30-32  |
| Pull Out Bond Strength MPa @ 28 days (IS 2770)                       | 4-5  |
| Moh's Hardness No. (IS 13630 Part 13)                                | 6-7  |
| Tensile Strength @ 28 days MPa (ASTM 190)                            | 5.5  |
| Split Tensile Strength MPa @ 28 days (IS 5816-1999)                  | 2.5  |

### Table for Compressive Strength MPa @16% w/p

| Test Method | ASTM Method | IS Method |
|-------------|-------------|-----------|
| Cube Size   | 50 mm       | 70.6 mm   |
| 1 day       | 20-25       | 15-20     |
| 3 days      | 30-35       | 25-30     |
| 7 days      | 40-45       | 35-40     |
| 28 days     | Upto 60     | 45-55     |

#### Note

- Allow a minimum of 24 hours for the subsequent usage. Do not use if temperature is likely to drop to below 5°C or exceed 50°C. For temperature below 20°C allow UltraTech POWERGROUT NS3 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

#### Safety Directions

- UltraTech POWERGROUT NS3 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 NS3 is non-flammable

#### Packaging

40 Kg

#### Shelf Life

- UltraTech POWERGROUT NS3 has a shelf life of 6 months from the date of manufacture. Store at a cool and dry place

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

- Tile Adhesives
- Micro Concrete and Repair Mortar
- Waterproofing and Injection Grouting Material
- Plasters and Jointing Mortar
- Floor Screeds & Masonry
- Autoclaved Aerated Lightweight Concrete Blocks

#### 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.



#### UltraTech Cement Limited (Building Products Division)

Regd. Office: 2<sup>nd</sup> Floor, B-Wing, Ahura Centre, Mahakali Caves Road, MIDC, Andheri (East), Mumbai - 400 093. India | Tel.: +91-22 6692 8200 | Email: ultratech.care@adityabirla.com

Website: www.ultratechcement.com | Toll Free: 1800 210 3311

Regional Offices: ● Bangalore: 080 22250748 ● Hyderabad: 040 42024194

● Pune: 020 41486600 ● Ahmedabad: 079 49004545 ● Indore: 0731 2543206

