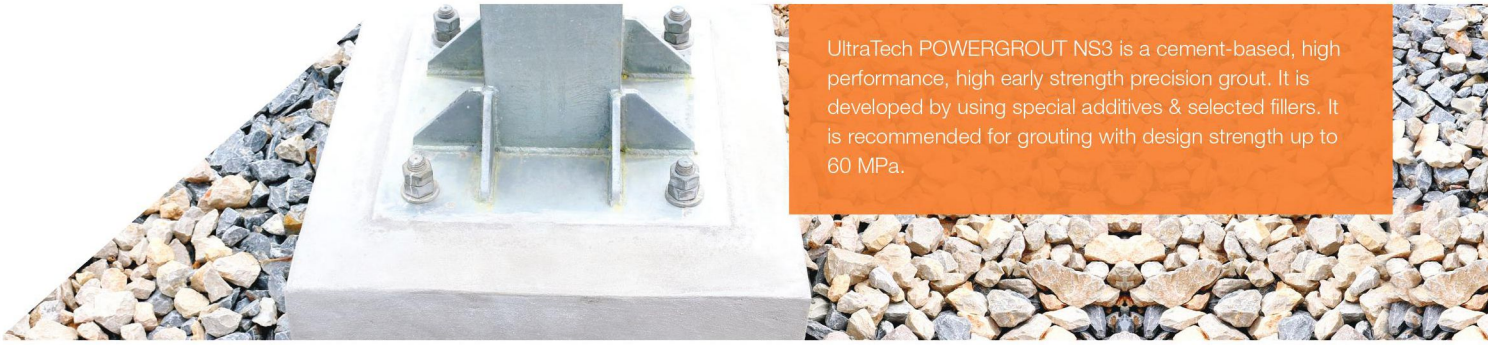
UltraTech POWERGROUT NS3

High Performance Precision Grout

Series: PGNS30012 | Month: February 2021
Supersedes all earlier TDS



UltraTech POWERGROUT NS3 is a cement-based, high performance, high early strength precision grout. It is developed by using special additives & selected fillers. It is recommended for grouting with design strength up to 60 MPa.

Specification

Technical Parameters complies with the following Standards: ASTM C1107, ASTM C 109, ASTM 190, ASTM C 940, ASTM C 469, ASTM C 348, IS 4031, IS 5816.

Areas of Application

UltraTech POWERGROUT NS3 is ideal for grouting of micropiles, pile caps, shear wall bond beams, light industrial foundation; fixing and anchoring of precast elements, fasteners, rails, etc.; core-cutting applications and manufacturing of high strength pavers & blocks.

Features and Benefits

- High compressive strength
- Excellent bond strength
- Non-shrink, non-expanding
- Single component; easy to use
- Enhanced flow properties and pot life
- Self-compacting in nature
- Economical with coarse aggregates for higher volume applications
- Subsequent usage time is 24 hrs depending on ambient conditions

Method of Application



Surface Preparation

- Prepare the surface 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.
- Properly check reinforcement and other elements to be grouted as per the structural requirements before placing UltraTech POWERGROUT NS3.
- The shuttering has to be leak-proof and without any gaps or loose material to ensure nil leakage while using UltraTech POWERGROUT NS3.
- It is recommended to apply UltraTech SEAL & DRY 5 PLUS over the old and new reinforcement bars, metal areas and over old-new concrete joints before grouting.



Mixing

- UltraTech POWERGROUT NS3 requires 14-15% potable water by weight of material.
- Add UltraTech POWERGROUT NS3 to the measured quantity of water while continuously stirring using a mechanical mixing device. Mix until a thick lump free consistency is achieved.
- Allow the mix to stand for 2 minutes to mature and then mix it again before use.
- Do not add more water to alter the mix, consistency or to extend the pot life. Further water addition will hamper the strength and adhesion properties of UltraTech POWERGROUT NS3.
- If required, UltraTech POWERGROUT NS3 can be mixed with up to 12 mm down well graded aggregates in 2:1 ratio by weight (2 part UltraTech POWERGROUT NS3 and 1 part 12 mm down well graded aggregates).
- For specific high volume applications, addition up to 20 mm down well graded aggregates can also be done in 2:1 ratio by weight (2 part UltraTech POWERGROUT NS3 and 1 part well graded aggregates).



Application

- Ensure that there is no standing water before the grout is poured and the surface is in SSD condition.
- Pour/pump the mixed UltraTech POWERGROUT NS3 to the prepared substrate using appropriate pouring/pumping techniques within 60 minutes of mixing.
- UltraTech POWERGROUT NS3 should not be vibrated with any mechanical vibrator as it is self-compacting. Any external vibration will segregate the mix and might impact the product performance from the designed properties.
- Curing is required only for exposed areas.

Technical data as per relevant IS and ASTM Standards

Fresh wet density	2250-2350 kg/m^3
Max size of aggregates	Well graded up to 20 mm
Percentage of coarse aggregates which can be blended	2 part of UltraTech POWERGROUT NS3 and 1 part of well graded up to 20 mm coarse aggregates by weight
Water powder ratio (IS 516 - 1959)	14-15% without coarse aggregates; 9-10% with coarse aggregates
Type of mixing	Mechanical mixing
Yield per 40 kg bag @ 15% w/p ratio	19-20 L
Rapid chloride penetration value (ASTM 1202 - 03)	Moderate
Flexural strength @ 28 days (ASTM C 348)	9-10 MPa
Tensile strength @ 28 days (ASTM 190)	4.5 MPa
Split tensile strength @ 28 days (IS 5816-1999)	2.5 MPa
Moh's hardness no. (IS 13630 Part 13)	6-7
Modulus of elasticity (ASTM C 469)	30-32 GPa
Linear co-efficient of thermal expansion mm/mm/Deg C (ASTM C 531)	1 to 2x10^{-6}
Expansion % (ASTM C 940)	Nil
Chloride content	Nil
Bleeding % (ASTM C 940)	Nil
Pot life	60 minutes
Subsequent usage time	24 hours
Abrasion resistance mm (IS 1237)	0.30

Table for Compressive Strength MPa @ 15% 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	55-60	45-55

Packaging

40 kg

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.

Note

- Allow a minimum of 24 hours for the subsequent usage. It is recommended to use UltraTech POWERGROUT NS3 when temperature is between 20°C to 35°C. For temperature below 20°C, cold weather concreting guidelines and above 35°C, hot weather concreting guidelines to be followed.
- The technical data provided in this technical data sheet is as per lab testing conditions 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.

Other Product Categories

- Waterproofing - SEAL & DRY and WEATHER PRO
- Tile Adhesive & Tile Grout - TILEFIXO and TILEFIXO GROUT
- Plaster & Jointing Mortar - SUPER STUCCO, READIPLAST, BASEKRETE and FIXOBLOCK
- Repair & Rehabilitation - MICROKRETE, MYKROFILL and BASEKRETE
- Flooring - FLOORKRETE
- Autoclaved Aerated Lightweight Concrete Blocks - XTRALITE

Shelf Life

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

Variants

- UltraTech POWERGROUT - NS3 FLOWABLE

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

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