

UltraTech POWERGROUT

NS1

High Performance Precision Grout

Series: PGNS10012 | Month: June 2022
Supersedes all earlier TDS

UltraTech POWERGROUT NS1 is a cement-based, high performance, high strength precision grout. It is developed by using special additives & selected fillers. It is recommended for grouting with design strength as per ASTM C 109 min 95 MPa.

Specification

Technical Parameters complies with the 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.

Areas of Application

UltraTech POWERGROUT NS1 is ideal for precision grouting of heavy machinery base, bearing plates and wherever it is essential to withstand static and dynamic load; structural grouting of steel columns, precast columns, precast beams, coupler grouting, etc.; securing anchor bolts, dowel rods & heavy railings and as a barrier material for building strong rooms and vaults.

Features and Benefits

- Ultimate compressive strength
- Excellent bond strength
- Non-shrink, non-expanding grout
- Enhanced flow properties and pot life
- Self-compacting in nature
- No bleeding and better mix consistency
- Subsequent usage time is 24 hrs depending on ambient conditions
- Single component; easy to use

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.
- Properly check reinforcement and other elements to be grouted as per the structural requirements before placing UltraTech POWERGROUT NS1.
- The shuttering has to be leak-proof and without any gaps or loose material to ensure nil leakage while using UltraTech POWERGROUT NS1.
- 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 NS1 requires 16-17% potable water by weight of material.
- Add UltraTech POWERGROUT NS1 to the measured quantity of water while continuously stirring using a mechanical mixing device min 400 rpm. 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 NS1.
- If required, UltraTech POWERGROUT NS1 can be mixed with up to 12 mm down well graded aggregates in 2:1 ratio by weight (2 part UltraTech POWERGROUT NS1 and 1 part 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 NS1 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 NS1 to the prepared substrate using appropriate pouring/pumping technique within 45 minutes of mixing.
- UltraTech POWERGROUT NS1 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	2250-2400 kg/m ³
Water powder ratio (IS 516 - 1959)	16-17% by weight
Type of mixing	Mechanical mixing
Yield per 40 kg bag @ 16% w/p ratio	19-20 L
Rapid chloride penetration value (ASTM 1202 - 03)	Moderate
Pull out bond strength @ 28 days (IS 2770)	20-22 MPa
Flexural strength @ 28 days (ASTM C 348)	min 15 MPa
Tensile strength @ 28 days (ASTM C 307 2018)	8.5 MPa
Split tensile strength @ 28 days (IS 5816-1999)	> 5 MPa
Moh's hardness no. (IS 13630 Part 13)	6
Modulus of elasticity (ASTM C 469)	min 50 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	Less than 0.001
Bleeding % (ASTM C 940)	Nil
Pot life	min 30 minutes
Subsequent usage time	24 hours
Abrasion resistance mm (IS 1237)	0.40
Dynamic load resistance	No distress observed for stress fluctuation of 50 kg/sq.cm to 250 kg/sq.cm @8.33Hz for 2 million cycles

Table for Compressive Strength MPa @16% w/p

Test Method	ASTM Method	IS Method
Cube Size	50 mm	70.6 mm
1 day	min 40	min 30
3 days	min 60	min 50
7 days	min 80	min 70
28 days	min 95	min 90

Note

- Allow a minimum of 24 hours for the subsequent usage. It is recommended to use UltraTech POWERGROUT NS1 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 sites condition. Consult UltraTech Building Products Division Technical Services Cell for any further technical assistance.

Shelf Life

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

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.



UltraTech Cement Limited

Regd. Office: 2nd Floor, B-Wing, Ahura Centre, Mahakali Caves Road, MIDC, Andheri (East), Mumbai - 400 093. India | Email: ultratech.care@adityabirla.com
Website: www.ultratechcement.com | Toll Free: 1800 210 3311



Packaging

40 kg

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

- 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

Variants

- UltraTech POWERGROUT NS1 FLOWABLE
- UltraTech POWERGROUT NS1 NORMAL