

### Mixing

The suggested dosage rate of NOOR - G is 10 to 15 kg/m<sup>3</sup> of concrete. It must be added together with the cement and aggregates and then water and other admixtures.

For best results use a colloidal mixer or other type of high shear mixer at approximately 1800 rpm. Mix for approximately 3 minutes after the addition of the last bag or until a homogeneous mix is achieved. Continue to agitate material in the holding hopper to achieve best flow. Alternately, for quantities less than 1 bag, such as when vacuum grouting voids, mechanically mix with high-speed drill (2500 rpm) and NOOR-G jiffy paddle for a minimum of 6 minutes. Method of mixing will significantly affect the material properties, particularly flow. At higher temperatures and/or with higher water amounts, the grout will behave more non-thixotropically. Therefore, it may be more appropriate to measure the flow using the standard flow cone test (ASTM C 939). The preferred efflux time is between 15-30 seconds under these conditions. Project specific testing by the engineer is recommended to ensure that the mixing and placement methods result in the specified requirements. Add appropriate quantity of clean water. Add bag of material to mixing vessel. Start by using 5.45 L (11.5 pt) of water per 22.7 kg (50 lb) bag of material. Add additional water as needed [a total maximum of 6.15 L (13 pt) per 22.7 kg (50 lb) bag] in order to achieve the flow specified on the technical data sheet. Ambient and material temperature should be as close as possible to 21.C (70.F). If higher, use cold water; if colder, use warm water.

### Application

Make sure all forming, mixing, placing, and clean up materials are on hand. The grout shall be used within 60 minutes from the start of mixing. The method of pumping grout shall ensure complete filling of the ducts and complete surrounding of the strand or bar. When grouting post-tensioning, a mock-up should be completed on-site and inspected by the engineer to ensure that the placement means and methods yield the specified results. When grouting ducts or critical elements, it is highly recommended that experienced, certified technicians complete the work.

### Clean up

In case of spill, wear protective equipment (chemical resistant gloves/goggles/clothing). Ventilate area. In the absence of adequate ventilation, use a properly fitted NIOSH respirator. Confine spill. Vacuum or scoop into an appropriate container. Dispose of in accordance with current applicable local, provincial and federal regulations.

### Limitations

Minimum ambient and substrate temperature 5.C (40.F) and rising at time of application. For lower temperatures, refer to the Post-Tensioning Institute (PTI) Guide Specification for Grouting of Post-Tensioned Structures dated February, 2001. Maximum ambient and substrate temperature is 38.C (100.F) at the time of placement. For higher temperatures, refer to the PTI Guide Specification for Grouting of Post-Tensioned Structures dated February, 2001. Minimum application thickness: 3 mm (1/8 in). Maximum application thickness (neat): comply with PTI specification for grouting of post-tensioned structures. Do not use as a patching or overlay mortar or in unconfined areas. Material must be placed within 60 minutes of mixing. As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts, etc. with an appropriate epoxy .

### Precautions

Irritant. Skin/Eye/Respiratory Irritant. Avoid contact. Wear suitable personal, protective equipment (chemical resistant goggles/gloves/clothing). Remove contaminated clothing and launder before reuse. Avoid breathing dust. Dust may cause respiratory track irritation. May cause delayed lung injury (silicosis). Use in presence of adequate ventilation. In the absence of adequate ventilation, wear a properly fitted NIOSH respirator. Uncured material can be removed with water. Cured material can only be removed mechanically. Store in cool, dry area. Keep bag tightly closed. Do not use the product if bag is damaged.

KEEP OUT OF REACH OF CHILDREN  
FOR INDUSTRIAL USE ONLY

# NOOR-G

CHEMICAL GROUT CONFORMS TO ASTM C 845-76 T



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INSTITUTE®**

The information, and in particular, the recommendations relating to the application and end-use of NOOR-G products, are given in good faith based on NOOR-G's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under [www.noorps.com](http://www.noorps.com)

[www.noorprestressing.com](http://www.noorprestressing.com)

Expansive agent for the production of shrinkage-compensating and high strength concrete

**Product Description**

NOOR-G is an inorganic product in powder form to be used in addition to the other components of concrete for producing shrinkage compensating and high strength concrete. It is a special clinker, burnt at high temperature, rich in free lime and whose minor compounds are calcium silicates, aluminates, Ferro-aluminates and sulphates. The use of super plasticizers is particularly recommended when using NOOR - G as they significantly reduce the water content and thus the potential shrinkage of the concrete to be compensated.

**Where to use**

*Hydraulic Works*

- Tanks.
- Reservoirs and swimming-pools.
- Water treatment plants.
- Wharves and structures subject to sea-water attacks.
- Jetties and blocks for sea works.
- Containers for liquids and/or gases.
- Pre-stressed circular structures.
- Sewers, tunnels and canals.
- Injections for sealing of concrete elements.



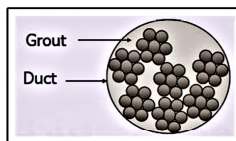
*Reinforced & Pre-stressed Concrete Structures*

- Long structures.
- Thin solid structures.
- Pre-stressed concrete beams.
- Annular beams for sports facilities.
- Floors for cold storage warehouses.
- Bridge decks.
- Filling of cavities.
- Industrial floors.
- Floor for sports centre (skating-rinks, tennis courts, sport tracks, etc).
- Weakly reinforced hyperstatic structures.
- Boats in reinforced concrete.
- Shields for nuclear plants.
- Road and railway tunnel vaults.
- Underwater and underground structure.
- Foundations and underpinning.
- Hyperstatic arc-bridges.
- Box culverts, domes and thin structures in reinforced concrete.
- Roofs and covers in architectural concrete.



*Prefabrications*

- Repairs of vertical structures and loaded pillar.
- Additional members to sustain existing structures.
- Rock consolidation.
- Post tension cable duct grouting.



**Product Advantage**

NOOR-G reduces the drying shrinkage of concrete by reducing the capillary tension of the pore water in concrete. Reductions in drying shrinkage of up to 50% have been obtained. The benefits derived from the reduction in drying shrinkage include:

- Dramatic reduction in crack occurrence.  
*caused by drying shrinkage*
- Increased joint spacing in concrete pavements and slab-on-ground.
- Improved concrete durability.
- Longer service life.
- High impermeability and strength, anti-crack and freeze-thaw resistance concrete.
- Excellent for pumping: Does not segregate...even at high flow. No build-up on equipment hopper.
- Non-corrosive , does not contain chlorides.
- Meets CRD C-621.
- Meets ASTM C-1107 (Grade C).
- Shows positive expansion when tested in accordance with ASTM C-827.

**TECHNICAL DATA**

Packing 16 kg/drum (2bags – 8 kg/bag)

Color Light brown

Yield Approx 35 L of water per 1.5 kg NOOR-G for post tension cable duct grouting or 2.5-3.0 kg NOOR-G for crack repairing with 100 kg cement in order to achieve 70 litres from the proper fluid.

shelf life 13 months in original, unopened bags. Store dry at 4° - 35°C (40° - 95°F). For best results, it is suggested to condition product to 18° - 24°C (65° - 75°F) before using. Properties at 23°C (73°F) and 50% r.h.

Wet Density (ASTM C-138) Approximately 2000 kg/m3 (125 lbs. per cf).

Storage Conditions Store dry at 40°-95°F (4°-35°C). For best results, it is suggested to condition material to 65°-75°F before using.

Fine Aggregate contains none (sand-free)

Volume Change (ASTM C-1090)

24 hours 0.0% shrinkage

28 days between 0 and +0.2% expansion

Expansion (ASTM C-940) 3 hours between 0.0 and +2.0%

Compressive Strength (ASTM C-942)\* (70° F Dry Environment) 0.4 w/c Ratio

3 days 3,000 psi (20.0 MPa)

7 days 5,000 psi (33.3 MPa)

28 days 7,000 psi (46.7 MPa)

Initial Set (ASTM C-953) Approximately 3 to 12 hours

Fluidity Test (ASTM C-939 Modified per FL Dot Section 938 and PTI Section 4.4.5.2)

Immediately after mixing 7-20 seconds

30 minutes after mixing 7-20 seconds

Bleeding (ASTM C-940 Modified per FL Dot Wick Induced Bleed Test) 4 hours 0.0%

Gelmen Pressure Induced bleed test (PTI Specification Section 4.4.6.2 and Table 4-1 Grout Type C) Less than 0.0% bleed at 100 psi for 5 minutes

Permeability (ASTM C-1202 modified per FL DOT section 938 and PTI section 4.4.3)

28 days Less than 2500 Coulombs

90 days In progress

Electrical Resistivity (ASTM C-1202) 28 days Less than 10,000 ohm •cm

W/C Less than 0.40

Accelerated corrosion test (reference FL DOT Specification Section 938-6) Time to Corrosion Control 344 hours NOOR - G greater than 1,000 hrs.

**HOW TO USE**

*surface*

*Preparation*

Ducts - Ensure that ducts, voids, openings, inlets and outlets are clean and free of debris, fuel, oils, other contaminants and site debris at all times.

other grouting applications - Remove all dirt, oil, grease, and other bond-inhibiting materials by mechanical means. Anchor bolts to be grouted must be de-greased with suitable solvent which will not inhibit grout bonding. Follow solvent manufacturer's instructions and warnings. Concrete must be sound and roughened to promote mechanical adhesion. Prior to placing, surface should be brought to a saturated, surface-dry condition.

**FORMING**

Ensure forms and ducts will retain grout without leakage.

**FIRST AID**

In case of skin contact, wash with soap and water. For eye contact flush immediately with plenty of water for at least 15 min. Contact a physician. For respiratory problems, transport victim to fresh air. Remove contaminated clothing and wash before re-use.