

NC GROUT

NON-CORROSIVE NON-SHRINK CEMENTITIOUS GROUT

DESCRIPTION

NC GROUT is a nonshrink, nonstaining grout. Its multi-flow quality allows this product to be used at various consistencies including pumping into inaccessible areas. NC GROUT may be packed, rodded, vibrated, poured or pumped. It has high compressive and flexural strengths and is non-rusting and non-corrosive. For high performance base plate applications, use NS GROUT.

PRIMARY APPLICATIONS

- Interior or exterior
- Machinery base plates
- Structural steel
- Columns
- Post tensioned cables
- Anchor bolts
- Precast structural members
- Tee joints

FEATURES/BENEFITS

- Extended working time for easier placement
- Can be used in wet areas - will not rust
- Above or below grade
- Sets rapidly and uniformly
- Versatile flow capability
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

Material Properties @ 75°F (24°C)

	Plastic	Pourable	Flowable
Mix water/50 lb (22.7 kg) bag, gals (L)	0.9 (3.4)	1 (3.8)	1.2 (4.5)
Flow ASTM C 230 (flow table)	100%	120%	–
CRD C 611 (flow cone)	–	–	30 secs
Setting Time, ASTM C 191, hours			
Initial	1.5 to 2.0	2.5 to 3.5	5.0 to 5.5
Final	3.0 to 4.0	4.0 to 5.0	7.0 to 8.0
Compressive Strength, ASTM C 109 Modified*, psi (MPa)			
3 day	5,500 (38)	4,000 (28)	3,000 (21)
7 day	7,500 (52)	6,000 (41)	4,800 (33)
28 day	8,000 (55)	7,500 (52)	6,000 (41)
Modulus of Elasticity, ASTM C 469 - 4.31×10^6 psi (MPa)			
Flexural Strength, ASTM C 348, psi (MPa)			
7 day	900 (6)		
28 day	1,200 (8)		
Height change of grout expansion % CRD 621			
3 day	0.06	0.08	0.09
28 day	0.08	0.08	0.10

* See ASTM C 1107 Section 11.5 + 11.5.1 - 11.5.3.

Values presented are typical and not necessarily referenced to create specifications.

Note: Normal 28 day compressive strength of portland cement concrete is 3,000 psi. Controlled expansion measures the grout's ability to attain and maintain positive and complete contact with base plates, rebars, bolts, etc. Fluidity and Flowability describes the grout's ability to flow freely into a cavity. Pull out tests are conducted to establish anchoring strength. There are no standard tests for this. NC GROUT was tested by drilling 2" (50mm) diameter holes in fully cured concrete with a compressive strength of 7,520 psi (52 MPa). Pull out test made at 7, 14 and 28 days on NO. 9 grade 60 bars embedded in the holes at depths of 12" (200mm), 15" (380mm), and 18" (460mm) showed that the ultimate failure load exceeded the 60,000 psi (414 MPa) specified minimum yield point of the rebars.

PACKAGING

NC GROUT is packaged in 50 lb (22.7 kg) poly-lined bags.

SHELF LIFE

1 year in original, unopened package.

SPECIFICATIONS/COMPLIANCES

- Corp of Engineer Specifications CRD C 621 and CRD C 588
- ASTM standards: ASTM C 827 and ASTM C 1107



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COVERAGE

One 50 pound (22.7 kg) bag will yield approximately 0.43 ft³ (0.012 m³) of grout.

DIRECTIONS FOR USE

Surface Preparation: Concrete surface must be structurally sound, dry, free of grease, oils, coatings, dust, curing compounds and other contaminants. Edges of concrete to be grouted that are less than 1" (25 mm) thick must be vertically cut to form a uniform butt. Smooth substrates must be abraded to ensure proper bonding. Shim and anchor support elements, to prevent movement. Steel must be free of oils, greases, dirt, old coatings or chemical contaminants. Saturate the prepared area with potable water for 12 to 24 hours before application. Remove excess water from holes and voids just before placement to prevent dilution of the grout. **Mixing:** NC GROUT is factory-proportioned and comes ready to use by adding only potable water. Use 0.9 gal (3.4L) of water per bag of grout for a plastic mix: 1 gal (3.8L) for a pourable mix and 1.2 gal (4.5L) for a high flow mix. For a uniform mix, use a paddle type mortar mixer. Add 2/3 of the water for the mix consistency desired into the mixer. Add the grout and mix partially. Add the remaining water to achieve the final consistency. Thoroughly mix the entire quantity for 2 to 3 minutes. Do not mix more material than can be placed in 30 minutes. **Application:** All grouting should be done using established procedures and recommendations of ACI for placing and curing concrete. The method of forming must provide for rapid continuous pouring of the grout and allow a clearance of at least 3" (76mm) for entry and a "grout head" of 4" to 6" (100 to 152 mm). Avoid air entrapment by providing adequate venting at the high point and by pouring the grout from one side only. Forms should be 1 to 2" (25 to 50 mm) above the base plate. NC GROUT must be placed by pumping, pouring, rodding or vibrating. Lengths of small link chain laid in the form before placing the grout will assist in compacting the grout and eliminating air voids. The grout must be placed and compacted within 30 minutes after mixing. In applications where grout thickness exceeds 2" (50 mm) up to 25 lbs(11.3 kg) of 3/8" (9.5 mm) pea gravel which is washed and surface saturated dry may be added per 50 lb (22.7 kg) bag to extend the mix. After placement, rapid drying must be prevented by covering the grout with wet burlap or by applying a membrane forming curing compound from the Euclid series of products. The forms may be removed after the grout has hardened to an initial set (see material properties). When grouting at higher temperatures, use cool water, shade the area to be grouted and protect the placed grout from direct sunlight for at least 48 hours by covering with wet burlap. When grouting at low temperatures, raise the temperature of foundation bedplate by using steam or infrared heaters. Use warm mixing water and cover the grout to retain warmth. Do not apply heat directly to the grout after its placement. Chloride based set accelerators are not recommended.

CLEAN-UP

Clean tools and equipment with water immediately following. Clean drips with water while still wet. Dried NC GROUT will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Do not add anything but potable water.
- Do not add water in an amount that will cause bleeding or segregation. More or less water may be required to achieve a 25 second flow or the desired placing consistency, depending on temperature and other variables.
- Do not retemper with additional water after the mixture has started to set.
- Admixtures or fluidifiers are not recommended.
- Do not add sand or cement to the grout since this action will change its precision grouting characteristics.
- Do not aerate the mix.
- Proper curing practices must be observed.
- Apply at temperatures 40°F (4°C) and rising.
- Do not use as an overlay in an unconfined application.
- In all cases, consult the Material Safety Data Sheet before use.

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