



THE EUCLID CHEMICAL COMPANY

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NS GROUT

NON-SHRINK, NON-STAIN, NON-METALLIC

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NS GROUT is designed for critical use where high strength, non-staining characteristics and positive expansion are required. It contains only natural aggregate and an expansive cementitious binder. It is extremely flowable, and when cured, appears similar in appearance to concrete.

PRIMARY APPLICATIONS

- Pumps
- Fans
- Motors
- Compressors
- Generators
- Machine bases of all types
- Anchor bolts
- Column baseplates

FEATURES/BENEFITS

- Non-staining natural aggregate for better appearance
- Non-shrink performance provides excellent bearing
- Flowable and self-leveling
- High strength
- Appearance of plain concrete
- Does not contain any added chloride ions

SPECIFICATION/COMPLIANCES

- Meets the requirements of CRD C-621, Corps of Engineers Specification for Non-Shrink Grout.
- Shows positive expansion when tested in accordance with ASTM Specification C-1090, Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout.
- Meets the performance requirements of ASTM C-1107, Grades A & B as well as Grade C, "Standard Specification for Packaged Dry, Hydraulic-Cement Grout (non-shrink)."
- Meets ASTM C-827 "Test method for early volume of cementitious mixtures."

TECHNICAL INFORMATION

Typical Engineering Data

The following results were developed under laboratory conditions.

Flowable Consistency

1.0 gal/50 lb (3.8 liter/22.7 kg)

Flow Rate: ASTM C-939 & CRD C-621

120% Flow (flow table)

Compressive Strength

2" (50 mm) cubes (ASTM C-109)

<u>Age</u>	<u>Strength</u>
3 days	5,000 psi (34 MPa)
7 days	7,000 psi (48 MPa)
14 days	8,000 psi (55 MPa)
28 days	9,000 psi (62 MPa)

Expansion

Tested in Accordance with CRD C-621

3 days	.01%
7 days	.06%
14 days	.06%
28 days	.06%

Fluid Consistency

1.2 gal/50 lb (4.5 liter/22.7 kg)

Flow Rate: ASTM C-939 & CRD C-621

20 to 30 seconds (Flow Cone)

Compressive Strength

2" (50 mm) cubes (ASTM C-109)

<u>Age</u>	<u>Strength</u>
3 days	4,000 psi(28 MPa)
7 days	6,000 psi(41 MPa)
14 days	6,500 psi(45 MPa)
28 days	7,000 psi(48 MPa)

Expansion

Tested in Accordance with CRD C-621

3 days	.01%
7 days	.06%
14 days	.06%
28 days	.06%

Setting Time ASTM C-191

Initial Set	3 hrs 5 mins.
Final Set	4 hrs 47 mins

Appearance

NS GROUT is a free flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear much darker than the surrounding concrete. While this color will lighten up substantially as the concrete cures and dries out, the grout may always appear somewhat darker than the surrounding concrete.

PACKAGING/YIELD

NS GROUT is packaged in 50 lb (22.7 kg) bags and yields 0.45 ft³ (0.013 m³) of fluid grout when mixed with 1.2 gal (4.5 liter) of water.

50 lb (22.7 kg) of NS GROUT and 25 lbs (11.3 kg) of 3/8" (9.5 mm) pea gravel will yield approximately 0.60 ft³ (.017 m³) of flowable consistency grout. Use pea gravel for deep fills only.

Shelf life in original unopened package is 2 years.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin "Application Instructions - Cementitious Grouting." The document offers instructions detailing the general installation of Euclid Chemical manufactured cement-based grout products.

Note: If the contractor is not familiar with standard grout placement techniques, a pre-job meeting is suggested to review the project details unique to the particular job. Contact your local Euclid Chemical representative for additional information.

The information given here is offered in particular support to the mixing and placing of NS GROUT. This information should be used in conjunction with the Application Instructions guide mentioned above.

Mixing:

Consistency	Estimated Water Content*
Fluid	1.2 gal/50 lb bag (4.5 liter/22.7 kg)
Flowable	1.0 gal/50 lb bag (3.8 liter/22.7 kg)
Plastic	.9 gal/50 lb bag (3.4 liter/22.7 kg)

* 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 add sand or cement to the grout since this action will change its precision grouting characteristics.

Do not use this product at a flow cone rate of less than 20 seconds if checking flow rates on the job site (see CRD-C-611 of ASTM C-939 for flow cone method).

Where NS GROUT will be placed at a thickness over 2" (50.8 mm), up to 25 lb (11.3 kg) of pea gravel may be added to each bag of grout. Note that the water demand to achieve a certain flow level of the grout will change. Do not add sufficient water to promote bleeding of the grout.

Placing-NS GROUT sets more rapidly than plain mortars; therefore, place quickly and continuously. If placing this product in hot weather, use of cold water will increase the working time.

Curing and Sealing-Proper curing procedures are important to ensure the durability and quality of the grout. Wet cure the grout until the forms are stripped. Then, cure the grout with a high solids curing compound, such as SUPER REZ-SEAL, SUPER FLOOR COAT or SUPER AQUA-CURE VOX as described in the general grouting Application Instructions guide.

Curing Compound must be ordered separately.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not add any admixture or fluidifiers.
- Proper curing is required.
- Employ cold weather or hot weather grouting practices as the temperatures dictates.
- Store materials in a dry place.
- Do not allow to freeze until 4000 psi (27.6 MPa) is attained.
- Do not use as a topping.
- Do not use material at temperatures that may cause premature freezing.
- Rate of strength gain is significantly affected at temperature extremes.

Form NS Grout-6-01

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