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JULY 2020
(Supersedes November 2017)

CG-86™ N.E.

Construction-Grade Grout

DESCRIPTION

CG-86 N.E. construction-grade grout is a non-gaseous, non-shrink economical grout. It was specifically developed as a high strength, cost-effective, general-purpose grout for use across a broad range of large and small construction projects. CG-86 N.E. will not rust and contains no added chlorides or gypsum. It is furnished premixed and ready to use. CG-86 N.E. may be extended for deep grouting with pea gravel for greater yield and increased economy. CG-86 N.E. is freeze-thaw stable and may be used interiorly or exteriorly, above- or below-grade.

USES

CG-86 N.E. is versatile and designed for base-plate grouting, anchoring, precast wall panels, and bridge seats. CG-86 N.E. is suitable for transportation, industrial, commercial, and municipal applications.

PACKAGING

50 lb. (22.7 kg) Poly-Lined Bags

FEATURES/BENEFITS

- Furnished premixed and ready to use ... just add water.
- Excellent freeze-thaw characteristics ... long-term stability.
- Provides a high strength, non-shrink grout for a broad range of general construction projects.
- Offers the strength and characteristics required for cost-effective, general-purpose grouting.
- Cost reductions are realized when extended with pea gravel for deep grouting.
- Requires no separate bonding agent.
- No site batching required for consistent results.
- Chloride- and gypsum-free.

YIELD

0.43 ft.³ (0.012 m³) per bag.

SHELF LIFE

Store on pallets in a cool, dry location. Do not store product outdoors. Shelf life of properly stored product is 18 months from date of manufacture in unopened, original container.

SPECIFICATIONS

ASTM C1107-13, Grade A, B, C.
Corps of Engineers Spec. CRD-C-621

TECHNICAL DATA

Consistency (ASTM C 827-95A)	Plastic	Flowable
Mix Ratio (per 50 lb.)	2.5 quarts (2.36 L)	3.1 quarts (2.92 L)
Flow (ASTM C 230-90)	100%	120%
Set Time (per C191-92, Initial)	4 - 6 hours	5 - 7 hours
Bond Strength at 28 Days (ASTM C 882 Modified)	2300 psi (15.9 MPa)	2500 psi (17.2 MPa)
Freeze-Thaw Resistance (ASTM C 666, Procedure A, 300 Cycles)	100.7% Relative Dynamic Modulus	100.7% Relative Dynamic Modulus
Compressive Strength (ASTM C 109-93)	3500 (24.1 MPa)	3000 (20.7 MPa)
@ 1 day	4500 (31 MPa)	4000 (27.6 MPa)
@ 3 days	6000 (41.4 MPa)	5500 (37.9 MPa)
@ 7 days	7500 (51.7 MPa)	7000 (48.3 MPa)
@ 28 days		

All technical data is typical information and will vary due to testing methods, site conditions, temperature, curing, procedures, batching, and expected variations in naturally occurring raw materials. Statistical differences in test results should be anticipated. Onsite testing results may not correlate to published laboratory results due to testing variations.

CONTINUED ON THE REVERSE SIDE...

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APPLICATION

Grouting application shall be performed in accordance with American Concrete Institute (ACI) 351.1R: Grouting between Foundations and Bases for Support of Equipment and Machinery and other applicable ACI recommendations. Minimum application thickness is 1/2" (12.7 mm). Do not apply to frost covered concrete. Protect from freezing by use of insulated or electric curing blanket, external heating, or other suitable method for up to three days after application. Follow cold temperature application procedure ACI 306, "Standard on cold weather concreting" if both the daily temperature falls below 40° F (23.9° C) and the air temperature does not rise above 50° F (23.9° C) for more than 12 hours in any 24-hour period for three consecutive days prior to insulation. Also see COLD-WEATHER GUIDELINE: REPAIR MORTARS AND NON-SHRINK GROUTS available at www.wrmeadows.com. Follow ACI 305 – "Standard on hot weather concreting" if conditions existing for rapid water loss which includes high air temperature, high winds, direct sun or low humidity. Also see HOT-WEATHER GUIDELINE: REPAIR MORTARS AND NON-SHRINK GROUTS available at www.wrmeadows.com.

Surface Preparation ... Prepare concrete substrate in accordance with ICRI Technical Guideline No 310.2-1997: Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays. Mechanically roughen or high pressure water-jet the existing concrete substrate to an ICRI concrete surface profile (CSP) of CSP-4 or higher. Remove all unsound concrete and provide a profiled, porous surface. The substrate must also be structurally sound, dust-free, and free of grease, oil, dirt, curing compounds, release agents, or any other surface or penetrated contaminants, coatings, or similar materials that will adversely affect the bond. Sanding or wire-brushing are not approved concrete surface preparation methods. Substrate must be brought to a fully saturated, surface dry (SSD) condition and free of standing water during the entire application of the grout. Abrasive blast the steel base-plates or any steel that will come in contact with the CG-86 N.E. to a white metal finish.

Placement ... Mix only small quantities of CG-86 N.E. by hand until lump-free. Mechanically mix with a high torque, low speed drill (400 - 600 rpm) and paddle or paddle-type mortar mixer. Mix for a minimum of three minutes or until uniform and lump-free. Use the minimum water required to produce desired placement consistency. Do not mix more than can be placed in 15 minutes. Do not re-temper. Use only clean, potable water.

Aggregate Extension ... When grouting large areas, extend CG-86 N.E. with washed, dried, well-graded, non-reactive, dense pea gravel. For thicknesses 2 - 4" (50.8 - 101.6 mm), add up to 25% 3/8" (9.5 mm) pea gravel. For medium-flow mixes, 4" (50.8 mm) and over, add up to 50% 3/8" (9.5 mm) pea gravel. The addition of pea gravel is based on percentage of the weight of the dry grout. The use of aggregate to extend the CG-86 N.E. will reduce flow and pumping characteristics. A well graded aggregate conforming to table 2 of ASTM C33, Size Number 8 will help to minimize loss of flow and pumping characteristics.

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Mixing ... Small quantities of CG-86 N.E. may be hand mixed in a concrete mixing pan until lump-free. For large quantities and continuous pours, use a mortar mixer with rubber-tipped blades. Mix for a minimum of three minutes or until uniform and lump-free. Use minimum water required to produce desired placement consistency. Do not mix more than can be placed in 15 minutes. Do not re-temper. Use only clean, potable water.

To achieve a plastic consistency, mix 2.5 quarts (2.36 L) of cool, potable water per bag. For a flowable consistency, mix 3.1 quarts (2.92 L) of cool, potable water per bag. Always add 2/3 of the required mixing water for desired consistency to the mixing vessel prior to adding the powder. Slowly add the powder and mix for 2 - 3 minutes and adjust the consistency using the remaining 1/3 allowable water. Continue mixing until homogenous and lump free.

Forming ... Standard hard wood, exterior grade wood or metal forming may be used. The forms should be coated with form release agent for easy removal. The form edges should be caulked and sealed to a liquid-tight condition. Forms must be designed to provide a hydraulic head. Forming must also ensure adequate venting to avoid air entrapment. Do not make close fitting forms; allow 1/2" (12.7 mm) clearance and 1" (25.4 mm) for head. The forms should be placed between 2 - 6" (50.8 - 152.4 mm) away from the perimeter of the machine base to allow for air to escape and to provide for a grout shoulder around the base plate.

CG-86 N.E. is easily placed by pouring or pumping and compaction can be accomplished by rodding or tapping. Place grout on one side, flowing to opposite and adjacent sides, to avoid entrapment of air. Grout head and excess grout may be removed after initial set. Remove the forms after the grout has sufficiently hardened (4 - 10 hours depending on temperature) to avoid damaging and trim edges to desired profile.

Pumping ... CG-86 N.E., when mixed to a flowable to fluid consistency without the addition of aggregate, can be pumped using a suitable grout/mortar pump such as QuickSpray, Inc. (www.quikspray.com) Carrousel Pump 15023 GR3 and UB3 U-Blend Mixer® Combination with a minimum 1.5" (38.1 mm) diameter hose. Air compressor requirement is a minimum 125 LFM and 90 psi. Consult pump manufacturer for details on specific pumping instructions for their particular equipment.

If CG-86 N.E. has been extended with aggregate, ensure that the pump type is designed to handle the size and characteristics of the coarse aggregate. Ensure that the pump is equipped with a suitable Rock Valve™ or S-Valve or similar style pump designed to process coarse aggregate. Mortar or standard-type grout pumps should not be used to pump CG-86 N.E. that has been extended with aggregate, since these types of pumps are not designed to process aggregates.

Curing ... Immediately following application, cure CG-86 N.E. using a suitable curing compound from W. R. MEADOWS or in accordance with ACI 308. W. R. MEADOWS recommends VOCOMP-30, 2200-WHITE series, or 1130-CLEAR. When conditions exist for rapid early water loss, the use of EVAPRE™, an evaporation retarder from W. R. MEADOWS, is also recommended.

PRECAUTIONS

Do not use as a repair mortar, overlay or underlayment. Please contact W. R. MEADOWS for specific repair mortar recommendations. Set time, flow and strength development are highly dependent on temperature. Colder temperatures will increase set time and delay compressive strength gain. Generally, set time will increase for every 10° F difference from 75° F in grout temperature by 30%. For example, at 65° F, CG-86 mixed to flowable consistency will have an approximate set time of 6.5 - 9 hours as compared to 5 - 7 hours stated for 75° F.

Compressive strength development will be delayed up to 60% in cold temperatures versus 75° F at a given cure time and mix ratio. Grouting should be done using established concreting procedures according to ACI recommendations. Read and follow application information, precautions and Safety Data Sheet information. As with all cement-based materials, avoid direct contact with aluminum or similar type reactive metals. If contact must occur, coat the aluminum or other reactive metals with REZI-WELD 1000 or REZI-WELD LV from W. R. MEADOWS.

This data sheet provides a summary of the factors, precautions, limitations, and design theories that should be considered when designing a grouting application, but is not stand alone or complete; project, environmental, and application specific requirements must be considered before drafting a guide specification, determining suitability or application of material. The suitability and/or functionality of the product are the direct and sole responsibility of the licensed design professional, applicator, and/or installer of the product. W. R. MEADOWS is not directly or indirectly acting in any manner as the project licensed design professional, such as, but not limited to, a professional engineer, a licensed architect, and/or a consultant.

LEED INFORMATION

May help contribute to LEED credits:

- MRc9: Construction and Demolition Waste Management

For most current data sheet, further LEED information, and SDS, visit www.wrmeadows.com.



LIMITED WARRANTY

W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. Read complete warranty. Copy furnished upon request.

Disclaimer

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