



## V-3® GROUT

DATA SHEET NO. 3600-111

### DESCRIPTION

V-3 Grout is composed of graded sieve sizes of pure silica sand, high early cement, plus natural inorganic and synthetic materials, blended under strict quality control standards for consistent, uniform, high quality. Finished appearance is similar to concrete.

Volumetric expansion occurs within 24 hours after mixing with water. Thereafter V-3 becomes completely stable, neither shrinking nor expanding. The limited expansion and internal pressure development are achieved by a high-density crystal formation during hydration.

### USE

#### Grouting of:

Anchor bolts, sole plates, bridge bearings, conduit, dowels, sleeves, hangers, pipes, lighting standards and communication towers, signs and highway posts, tanks, guard rails, etc.

Lathes, cranes, rolling mills, ball mills, paper, rubber and chemical processing equipment, where high early strength and reduced down time is important.

Equipment subject to wide temperature variations, application in contact with aluminum or magnesium or subject to stray electrical currents.

Structural steel columns, bridge beams and seats, craneway rails, transmission towers, unbolted leveling plates and shims.

Post-tensioned concrete and in the manufacture of prestressed concrete structurals. Underpinning, jointing of precast columns, walls and concrete pipes.

Applications subject to repeated freeze/thaw cycles, de-icing salts, or water saturation; rock crevices, cracks and seams.

### FEATURES

#### Controlled Expansion

The controlled volumetric expansion and internal pressure development prevents the formation of harmful internal stresses and ensures a rigid, monolithic bond between the surfaces being grouted.

V-3 Grout is formulated to prevent shrinkage below mixed volume from the time the specified amount of water is added to produce any consistency from fluid to damp pack. No shrinkage during the initial set - after hardening - after days or years.

**Truly non-metallic** (not just non-ferrous). Contains no cast iron borings or aluminum particles and therefore can be used in areas where products containing these elements cannot be employed. Successfully withstands fluctuations of moisture, dryness, heat and cold and may be used inside or out without unsightly rusting or the necessity of painting.

**Totally non-corrosive** V-3 does not contain chlorides, sulphides or similarly harmful chemicals which produce corrosive action and which are present in many other grouting compounds. It is also free from carbon, coke, fly ash or argillaceous materials.

**High compressive, adhesive and pullout strengths.** The compressive, adhesive and pullout strengths of a grout determine when loads may be applied to structural members or machinery which has been grouted. Early grout strength depends on the amount of mixing water used, the temperature during curing and the elapsed time after placement. Even at the highest recommended fluidity V-3 attains compressive strength of over 30 MPa (4500 psi) in 24 hours. The unique formulation of V-3 Grout results in an increase of compressive strength under vibrating and dynamic load conditions. The fineness modulus of V-3 Grout contributes to its strength and flow characteristics and enables the addition of selected aggregates which do not segregate nor reduce these characteristics.

**Ease of installation.** No special equipment or personnel are required for the installation of V-3 Grout. Handle as a "performance" concrete.

### CAUTION

V-3 Grout is not normally recommended where the space under a base plate or around an anchor bolt is less than 12.7 mm (1/2"). However, where only dead loads and little stress is involved, 12.7 mm (1/2") may be sufficient.

Similarly, less than 12.7 mm (1/2") annular space but with compensating increased depth may be satisfactory for anchor bolt grouting where a shallow depth would not suffice. If in doubt, consult W. R. Meadows of Canada for technical assistance. Do not employ extending aggregate for 12.7 mm (1/2") thickness or less. The basic rule is that aggregate size should be no greater than 20% of grout depth.

Do not use sand as an extender under any circumstances.

Use crushed stone as an extender only in damp pack mixes or other placements where flowability is not a consideration, since the angular shape of this aggregate is not conducive to flowability.

Consult W. R. Meadows of Canada for information on extending aggregates for specific installations.

Where grout may be exposed to sulphuric, nitric, hydrochloric or other acids corrosive to concrete, a seal coat may be required. Consider the use of CS-309™, HIAC™ or REZI-WELD™ 1000 by W. R. MEADOWS depending on acid strength and temperature (see Data Sheets 3300-301, 3300-241, 3700-632).

continued over

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## STANDARDS

Agriculture and Agri-Food Canada accepted.

## DATA

**Coverage/Packaging** 26.3 kg (58 lb.) bag yields 14,158 cm<sup>3</sup> (0.5 ft.<sup>3</sup>) of in-place grout, when using the median water ratio level.

**Storage** Store in dry, warm 21°C (70°F) area, clear of the ground. Storage life 1 year.

## PROPERTIES (typical for pourable consistency)

PROPERTY	V-3 GROUT	
<b>Compressive Strength*</b> (ASTM C109-70T)	(MPa)	psi
	Elapsed Time	
	24 hours	31 4,500
	3 days	45 6,500
	7 days	54 7,600
	28 days	69 10,000
	915 days	69 10,000
<b>Controlled Expansion</b>	0.4% approx.	
<b>Controlled Internal Pressure Development</b>	3.5 kPa (0.5 psi)	
<b>Tensile Strength</b> (after 28 days)	3.7 MPa (540 psi)	
<b>Flow Index</b> (10 drops)	115	
<b>Initial Set Time</b> (Laboratory Tests)	4h	
<b>Final Set Time</b> (Laboratory Tests)	6h	

\* Plastic mixes up to 10% higher. Damp pack up to 20% higher.

**Chemical Analysis** No metallic elements.  
No evidence of corrosives.

**Dynamic Loading** Increase of 5% in compressive strength to 10 million load plays.

**Freeze/Thaw Resistance** Density of V-3 Grout allows little water absorption resulting in only slight surface scaling after 180 cycles from -51°C to 4°C (-60°F to 40°F).

## APPLICATION INSTRUCTIONS

### Surface Preparation

Clean grout contact surfaces of oil, grease, scale, dirt and other foreign matter. Treat stubborn oil and grease deposits with a caustic solution, then flush all surfaces with clean water. Chip away unsound concrete, leaving the surface level but rough. Prior to placing grout, saturate all surfaces by flooding with water for a period of 3 to 12 hours.

### Forming

Provide for rapid, continuous and complete grout placement. Use forms of sufficient strength, closely fitted with joints sealed to prevent leakage. Coat forms with a form release, (DUOGARD® by W. R. MEADOWS - Data Sheet 3150-112).

Do not form tight to equipment - air may be entrapped.

Slant forms on the pouring side to avoid trapping air. Allow 76 mm (3") clearance for grout entry and up to 152 mm (6") "head". On the opposite side of the entry, allow minimum 12.7 mm (1/2") clearance between form and equipment and provide initially 25.4 mm (1") of grout "head" above the bottom of the equipment base plate. Reduce all grout "heads" to 3 mm (1/8") after initial set.

Provide minimum 19 mm (3/4") grout thickness between foundation and base plate (see "Caution").

## Temperature

V-3 Grout sets faster at high temperatures; slower at lower temperatures. Follow normal winter or summer concreting procedures as appropriate.

## Mixing

Use minimum water necessary to produce mix consistency desired. Detailed instructions are shown on bag.

Mix grout in conventional mortar mixing equipment. First add 2/3 of the amount of water required, mix for a short period (until lump free) and then add the balance of the water. Mix for a further two or three minutes. Smaller quantities may be mixed using a blending propeller on a slow speed drill or may be hand mixed in a mortar box.

For deep grouting V-3 may be extended by adding up to 50% by weight washed pea gravel (sizes up to 9.5 mm - 3/8"). (See information on bag).

Mix only enough grout for immediate use. If mixed grout is not placed immediately, agitate or re-blend just before placing. Re-blending or re-tempering is permissible within one hour after original mixing, depending on temperature.

## Placement

Place by damp-packing, pumping, pouring, rodding, strapping, chaining or vibrating. To prevent voids, place grout from side or corner only, or, alternatively, place excess grout which will be displaced by the weight of the object to be grouted (e.g. leveling plate), to effect full bearing. Larger objects (e.g. large tanks) may require use of shims.

## Curing

Follow normal concrete curing procedures. Do not remove forms until grout is sufficiently hard to avoid sagging.

Cover exposed material with wet burlap during the first 48 hours. Alternatively use #1100, #3100, CS-309 or VOCOMP®-20 by, W. R. MEADOWS, as membrane cure (see Data Sheets 3300-341, 3050-101, 3300-301, 3300 191).

Proper application is the responsibility of the user. Field visits by W. R. MEADOWS' personnel are for the purpose of making technical recommendations only, and are not to supervise or provide quality control on the job-site.

## SPECIFICATION CLAUSE

Section 03 62 13.

**Non-metallic Grout** W. R. MEADOWS V-3 Grout.

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