PRODUCT DATA

W. R. MEADOWS SEALTIGHT

DATA SHEET NO. 3600-101

V-1®
Premium Grout

DESCRIPTION
V-1 grout is composed of graded sieve sizes of pure silica sand and 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-1 becomes completely stable, neither shrinking nor expanding. The limited expansion and internal pressure development are achieved by a high-density crystal formation during hydration.

USES
Grouting of turbines, generators, compressors, diesel engines, etc. requiring high strength and vibration dampening. 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, crane way rails, transmission towers, unbolted leveling plate, and shims. Applications subject to repeated freeze/thaw cycles, de-icing salts, or water saturation; rock crevices, cracks and seams.

FEATURES/BENEFITS
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-1 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 parging.
Totally Non-Corrosive … V-1 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-1 attains compressive strength of over 40 MPa (5800 psi) in 24 hours. The unique formulation of V-1 grout results in an increase of compressive strength under vibrating and dynamic load conditions. The fineness modulus of V-1 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-1 grout. Handle as a "performance" concrete.

PACKAGING
22.7 kg (50 Lb.) Bag

COVERAGE
22.7 kg (50 lb.) bag yields 12,176 cm^3 (0.43 $ft.^3$) of in-place grout, when using the median water ratio level.

SHELF LIFE
One year from date of manufacture when stored indoors on pallets in a dry, cool area. Do not store product outside.

SPECIFICATIONS
- Agriculture and Agri-Food Canada accepted

Continued over …

W. R. MEADOWS® OF CANADA
70 Hannant Court, Milton, ON L9T 5C1
38 Rayborn Crescent, St. Albert, AB T8N 4B1
(800) 342-5976
Montreal Sales: (877) 405-5186

Hampshire, IL / Cartersville, GA / York, PA / Fort Worth, TX
Benicia, CA / Pomona, CA / Goodyear, AZ / Milton, ON
St. Albert, AB
www.wrmeadows.com

TECHNICAL DATA

PROPERTIES (Typical for pourable consistency)

PROPERTY		V-1 GROUT	
Compressive Strength* (ASTM C109 70T)		MPa	psi
Elapsed Time	24 hours	40	5,800
	3 days	60	8,500
	7 days	73	10,300
	28 days	82.7	12,000
	915 days	82.7	12,000
Controlled Expansion		Up to 1.0%	
Controlled Internal Pressure Development		7 kPa (1.0 psi)	
Tensile Strength (after 28 days)		4.3 MPa (625 psi)	
Pull Out Resistance 25 mm (1") re-bar grouted to 119 mm (4.7") depth		12 363 kg (27,200 lb.)	
Flow Index (10 drops)		90	
Initial Set Time (Laboratory Tests)		3h	
Final Set Time (Laboratory Tests)		4h	

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

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

Freeze/Thaw Resistance: Density of V-1 allows little water absorption resulting in only slight surface scaling after 180 cycles from -51° C - 4° C (-60° F - 40° F).

APPLICATION

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 - 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, such as DUOGARD® from W. R. MEADOWS. 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 initial 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 "PRECAUTIONS.")

Temperature … V-1 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-1 may be extended by adding up to 50% by weight of washed pea gravel [sizes up to 9.5 mm (3/8")]. 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. (Contact W. R. MEADOWS Technical Services for details on pumping.) 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-CLEAR from W. R. MEADOWS as membrane cure.

PRECAUTIONS

V-1 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 are 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 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 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. Contact W. R. MEADOWS for details.

MASTERFORMAT NUMBER AND TITLE

03 62 13 - Non-Metallic Non-Shrink Grouting

LEED INFORMATION

May help contribute to LEED credits:

- MR Credit 2: Construction Waste Management
- MR Credit 5: Regional Material

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

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