



INSTALLATION SOLUTIONS

GB-0144-1.1, Rev. 1

V-1 PREMIUM NON-SHRINK GROUT PRODUCT DATA

Unisorb V-1 Premium Non-Shrink Grout is a cement-based, premixed, highly flowable grout that develops extremely high compressive strengths in a very short period of time.

This product is particularly superior for applications where ease of placement and suitability for use under high unit loads are important. Other materials such as concrete or weaker grouts may develop structural flaws when subjected to concentrated loads.

Unisorb V-1 Premium Non-Shrink Grout is uniquely suited for use in high precision and high load applications ranging from turbines and generators to precision machine tools to equipment base plates. This product contains a special proprietary expansion mechanism which eliminates the natural volume loss present in other cement-based products. This unique expansion mechanism causes expansion primarily during the initial mixing and plastic set stages of the cure, yielding a very stable end product.

Contact Unisorb today with your project details to receive customized guidance that will optimize the installation process and maximize the benefit to your equipment.

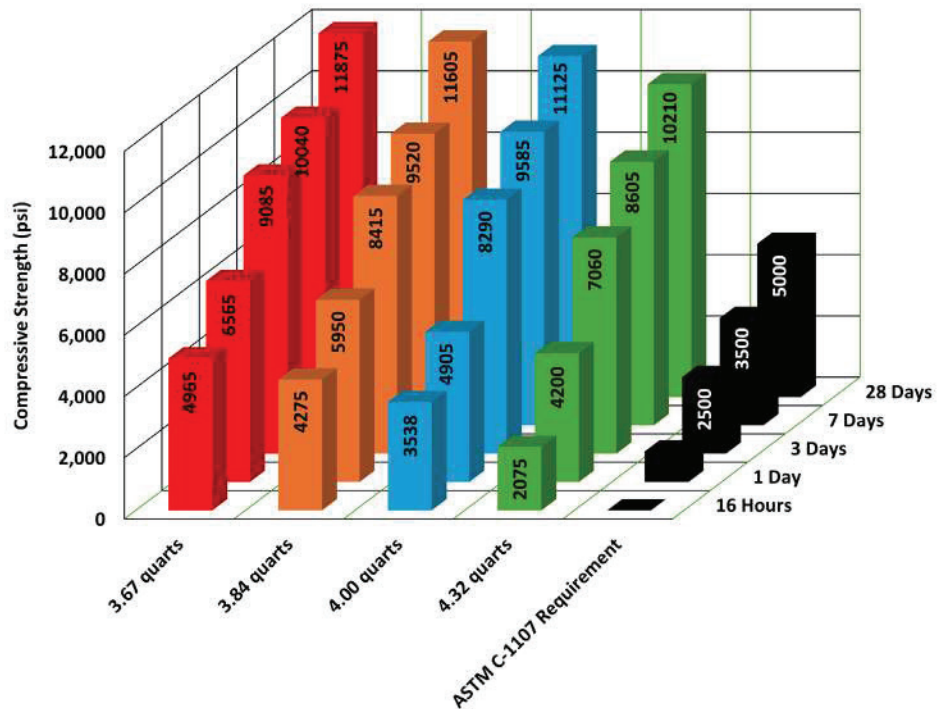


Packaging/Yields: 48# Bag = .40 Cu. Ft. (691 Cu. In.)

Benefits:

- Exceeds ASTM C-1107 Requirements
- Up to 11,875 psi compressive strength
- Excellent for setting turbine and generator base plates.
- Used for setting Vector Bolts and other anchors, supporting Fixators and other leveling wedges, grouting machine bases, and supporting base plates.
- Controlled expansion ensures positive contact with all surfaces and objects.
- Can be pumped and vibrated.
- Maximum service temperature is 1000°F
- Easy mixing and clean up.
- Qualifies for 3 LEED points.

**V-1 Premium Non-Shrink Grout
ASTM C-1107 Test Results**



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Shown below are selected physical properties of V-1 Non-Shrink Grout. Since the physical properties change with the amount of water used, the chart shows properties at four water levels. The four were chosen to show the properties for a plastic, flowable, and fluid consistency, and at maximum water.

Physical properties at maximum water are compared to the ASTM C-1107 requirements in the far right column. ASTM C-1107 includes testing and acceptance criteria for most physical properties of non-shrink cement based grouts. Unisorb V-1 Non-Shrink Grout meets or exceeds the requirements of ASTM C-1107.

The minimum section for V-1 Non-Shrink Grout is 1". The maximum section range is 2" to 3" without pea gravel. V-1 can be extended by using 50% (by weight) pea gravel to fill larger sections.

The compressive strengths at 1, 3, 7, and 28 days are determined in accordance with the specification outlined in ASTM C-109, "Standard Test Method for Compressive Strength of Hydraulic Cement Mortars". Additional cubes were tested at 16 hours to show early strength development. The results summarized in the chart below show that the 28 day strength requirement of ASTM C-1107, 5000 psi, is met in 3 days even at the high water level. These values are shown in graphic form in the chart on the previous page.

Unisorb V-1 Non-Shrink Grout is packaged in a moisture resistant bag. Always store V-1 in a climate controlled environment that is protected from the elements.

Physical Properties (ASTM C-1107)					
Mix Ratio	3.67 Quarts	3.84 Quarts	4.00 Quarts	4.32 Quarts	ASTM C-1107 Requirements
Water per 48 lb. bag					
Flow Consistency	Plastic	Flowable	Fluid	Fluid	Plastic 100-125
Flow Table (5 Drops) ASTM C-230	109	135	150	—	Flowable 125-145
Flow Cone (5 Min.) ASTM C-939	—	—	42 Sec.	27 Sec.	Fluid 10-30 Sec.
Flow Cone (30 Min.) ASTM C-939	—	—	—	28 Sec.	
Flow Cone (60 Min.) ASTM C-939	—	—	—	35 Sec.	
Compressive Strength (psi) per ASTM C-109					Minimum
Test Age					
16 Hours	4,965	4,275	3,538	2,075	—
1 Day	6,565	5,950	4,905	4,200	1,000
3 Days	9,085	8,415	8,290	7,060	2,500
7 Days	10,040	9,520	9,585	8,605	3,500
28 Days	11,875	11,605	11,125	10,210	5,000
Vicat Needle Test per ASTM C-191					
Initial Set	5 hrs. 3 min.	5 hrs. 22 min.	6 hrs. 17 min.	6 hrs. 30 min.	—
Final Set	5 hrs. 41 min.	6 hrs. 26 min.	7 hrs. 0 min.	7 hrs. 28 min.	—
Change in Height (%) at Early Ages ASTM C-827					
At Final Set	+0.55	+1.49	+1.43	+1.23	0.0-4.0
Change in Height (%) ASTM C-1090					
Test Age					
1 Day	+0.04	+0.01	+0.01	+0.00	0.0-0.3
3 Days	+0.04	+0.02	+0.01	+0.00	0.0-0.3
14 Days	+0.05	+0.03	+0.01	+0.00	0.0-0.3
28 Days	+0.05	+0.03	+0.01	+0.00	0.0-0.3
Flexural Strength		Tensile Strength			
7 Days	1,670 psi	7 Days	535 psi		
28 Days	1,700 psi	28 Days	568 psi		
High Temperature Evaluation		Youngs Modulus of Elasticity			
Compressive Strength		6 x 10 ⁶ psi			
70°F	11,000 psi	Expansion and Bleeding of Freshly Mixed Grouts			
800°F	11,000 psi	@ Maximum Water (ASTM C-940)			
900°F	9,700 psi	Volume Expansion	+1.00%		
1000°F	8,400 psi	Bleed	0.00%		

Physical properties shown are the result of laboratory testing performed per industry recognized test procedures. Laboratory properties aid in determining suitability of the product for the intended application. Field testing results may vary due to procedures or ambient conditions such as temperature and humidity. Laboratory reports are available on request.

Consult the specific Safety Data Sheets (SDS) for all safety data. Contact Unisorb for all application questions and grouting support.



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