



Production Description

VIBROPRUF® #11 Grout is a one-part dry, non-metallic, non-shrink cementitious material that requires only the addition of water. The specially blended ingredients are proportioned to provide specific characteristics for consistency, workability, strength and durability. **Vibropruf® #11** grout is designed to reach high compressive strength suitable for use at column bases and bearing plates, for anchoring dowels, rebar and tie rods, and for setting beds for structural precast concrete elements. It is Portland cement based and contains no gypsum or reactive or staining-type aggregates. It will not rust, stain or corrode. **Vibropruf® #11** grout may be used in contact with aluminum or magnesium items.

Installation

General: The following Installation guideline includes, but is not limited to information that addresses several variables that will affect product results. Prior to use, refer to MSDS for proper handling and disposal procedures. Conduct product testing to ascertain suitability for intended use under actual jobsite conditions. Verify health, safety and environmental issues have been considered prior to use. **Vibropruf® #11** is intended to be used by persons knowledgeable with industry practices and for industrial use only. The following Installation guideline includes, but is not limited to information that addresses several variables that will affect product results.

Surface Prep: Clean, coarse but sound substrates provide optimum surfaces for adhesion. Mechanically roughen surfaces where practical. Use compressed air to clean dirt and debris from bolt-holes and anchor-holes. Mechanically clean metal plate surfaces to a "bright metal" condition. Pressure-wash or flush dirt, debris and loose particles from surfaces of concrete slabs. Pre-dampen adjacent edges, underlying and surrounding substrates for 4-to-24 hours, to a point of saturation (without ponding water) prior to placement of non-shrink grout.

Formwork: Forms used to contain grout placements must allow for rapid, continuous and complete filling of the space without leaks. Coat wood forms with a suitable Lambert Form Release. For enclosed spaces such as under base plates, construct forms to allow filling of space from one side and venting of space opposite the filling location.

Mixing: Accurately pre-measure and pour mixing water into mixer prior to adding dry powder of **Vibropruf® #11** grout. For conformance to CRD C-621, use the amount of water indicated in the following table for each unit of **Vibropruf® #11** to reach the consistency desired and indicated:

- Fluid 4.5 qt (4.3-L)
- Flowable 4.0 qt (3.8-L)
- Plastic 3.5 qt (3.3-L)

1-2 Bag Batches: Pour premeasured clean potable water into mixing container. With manual, slow-speed drill-type paddle mixer running, steadily empty grout into container. Mix until lump-free; approximately three to five minutes after all material are in mixer. If mixing one bag of grout by-hand without drill mixer; work vigorously for four-minutes to produce lump-free mixture.

2-30 Bag Batches: Use mechanical mixing methods for any batch larger than 2-bags. Pre-measure and fill mixer with clean potable water. Add each unit of grout to mixer at a rate of ten-seconds per unit, but in a steady and consistent manner without splashing. Attempt to add all dry grout material within five-minutes. Run mixer three minutes after final unit has been added; visually confirm mixed grout is smooth and lump-free. Screen lumpy material over a ½-inch screen.

Dry Packing: Mechanically mix grout to "plastic" consistency. Allow to set five minutes; then forcefully pack spaces to be dry-packed. Uniformly and thoroughly fill spaces, then cover-cure for 24-hrs with wet cloth rags.

Placement

Place mixed grout in formed spaces within five minutes of mixing. Placement must be continuous for the entire space. For placement of larger volumes of grout that utilize multiple batches, consider using a "holding tank" and slow agitation to maintain fluidity or pump-placement that utilizes a diaphragm or progressive-cavity pump.

Machinery & Equipment Placement: Place grout material from one side only, forcing air to escape from opposite side of space. Do not re-temper mixed grout material. Grout anchor bolt holes and keyways first. Use of vibrators is discouraged; tamp material as necessary to move into corners of formed spaces. Fluid mix material is recommended only for less critical applications where strength and aggregate segregation is not detrimental to placement.

Base Place Placement: Follow procedures for machinery placement filling voids completely from one side only. Cut shoulders to 45-deg angle just prior to final set; then apply a curing compound to the cut shoulders.

Patching: Use only plastic mixes for repair patches. Force grout into area; apply uniform pressure to ensure complete contact at surface of repair and to eliminate air entrapment.

Volume Grouting: Grout yields can be increased, but compressive strengths may be reduced by 10% by the addition of washed, dried pea-gravel not passing a 3/8" sieve. When acceptable, use only clean and structurally sound, rounded pea gravel; crushed gravel is not recommended. Limit the amount of pea-gravel to 25-lbs per unit of grout.

Cold Weather Grouting: At temperatures below 50-deg F, use warm water for mixing and provide temporary heat for surrounding surfaces. Never place grout on frozen or near-frozen surfaces. Do not allow grout temperature to fall below 50-deg F; maintain temporary heat until grout reaches final set. Cover and protect from low-humidity, wind and premature drying.

Hot Weather Grouting: At temperatures above 90-deg F, use chilled water and ice to maintain lower grout temperature. Place mixed grout in pre-dampened formed spaces (saturated, surface-dry; no puddles). Cover to protect from rapid drying, direct sunlight, hot temperatures and wind. Apply appropriate **Lambert** curing compound after initial set.

Packaging:

50-lbs. (22.7-kg)
Bags
or
Pails



Curing

Protect Vibropruf® #11 grout from premature drying, cracking and delamination by applying a membrane-forming curing compound to exposed surfaces of grout. When "wet cover curing" rags are used during first 24-hrs, apply a membrane cure after removal of cover cure.

Limitations

Avoid placement when temperatures are at or projected to be below 50-deg F within 24-hrs after placement. Set time, compressive strength and expansion properties are adversely affected by excess water and low temperatures.

Vibropruf® #11 is not designed for feather-edge applications; minimum thickness is ¼-inch. Placements over 2-inches in thickness can be modified with course aggregate. Do not re-temper after initial mixing. For large batches, mix rapidly and continuously until ready to place material. Refer to American Concrete Institute's (ACI) recommended practices for cement-based materials. Do not add cement, plasticizers or set accelerators to Vibropruf® #11.

Technical Data

Applicable Standards

ASTM C-1107
 US Army Corps of Engineers CRD C-621
 US Army Corps of Engineers CRD C-588
 Florida Dept of Transportation (FDOT)

Approval: FDOT Section 934
 Approval: S-934-0004

Properties

Flow Cone (ASTM C-611): 16 Seconds (fluid mix)
 Vol. Change (ASTM C-827): 1.67% vol. expansion at time of set

Setting Time (Hours)		ASTM C-191	
	Plastic	Flowable	Fluid
Initial Set	3.0	3.5	4.25
Final Set	5.0	6.0	8.0

Compressive Strength – PSI (MPa) (@73°F / 22.8°C)		ASTM C-109	
Age	Plastic	Flowable	Fluid
1 Day	5300 (36.5)	4600 (31.7)	3700 (25.5)
3 Days	5700 (39.3)	5700 (39.3)	5300 (36.5)
7 Days	6600 (45.5)	6700 (46.2)	5900 (40.7)
28 Days	8000 (55.2)	7900 (54.5)	7000 (48.3)

Flow Table Analysis			ASTM C-230
Plastic	Flowable	Fluid	
110%	132%	N/A	

Flow Cone Analysis			CRD C-611
Plastic	Flowable	Fluid	
N/A	N/A	16 sec – (Fluid Mix)	

Expansion				CRD C-227
	Plastic	Flowable	Fluid	
3 Day	+0.04	+0.02	+0.01	
14 Day	+0.04	+0.03	+0.01	
28 Day	+0.05	+0.03	+0.01	

Pull-Out Test				ASTM E-488
	Rebar	Type of Failure	Max Load in lbs (kg)	
7 Days	#4	Rebar	14300 (6486.4)	
	#6	Rebar	35966 (16313.9)	
	#8	Rebar	64000 (29029.9)	
14 Days	#4	Rebar	13766 (6244.2)	
	#6	Concrete	33566 (15225.3)	
	#8	Concrete	60493 (27439.2)	
28 Days	#4	Rebar	13616 (6176.1)	
	#6	Rebar	44533 (20199.8)	
	#8	Concrete	72200 (32749.4)	

Coverage

Each 50-lb. unit will cover approx. 0.45 cubic feet (0.014m³) or 5.5-ft² at 1-inch thick.

Clean-Up

This product can be swept up in dry form, with attention paid to minimizing the creation of dust. A dustless clean-up system is recommended if possible.

First-Aid

Cement powder or freshly mixed concrete, may cause skin injury. Avoid contact with skin and wash exposed skin areas promptly with water. If any cement powder of mixture gets into eyes, rinse immediately and with water and get prompt medical attention. KEEP OUT OF REACH OF CHILDREN. Product contains some silica sand which can cause SILICOSIS. Avoid over-exposure to the airborne dust. Practice good house-keeping. Any food, drink or chewing product should be protected from the dust.

**KEEP OUT OF REACH OF CHILDREN.
 FOR INDUSTRIAL USE ONLY.**

**CEMENTITIOUS GROUTS &
 ANCHOR PRODUCTS**

VIBROPRUF® #11

MASTER FORMAT: 03 62 00