



**Manufacturers of
Professional Grade Cement &
Construction Products Since 1967**

POR-ROK PRODUCTS ARE LICENSED THROUGH NOVEX SYSTEMS INTERNATIONAL THEY ARE MANUFACTURED AND DISTRIBUTED BY CGM, INC.

PR-20120119

POR-ROK®

ANCHORING CEMENT—NON SHRINK GROUT

Sets in 15 minutes – Expands as it sets – Stronger than Concrete in 1 Hour

DESCRIPTION:

POR-ROK ANCHORING CEMENT is used in the anchoring of heavy machinery, railings, guard rails, banisters, repairing of cracks on damaged concrete substrate. It is a non-shrink, hydraulic, controlled expansion cement in a ready to use preparation. Water is added at the job site to provide a pourable, durable anchoring or patching compound.

POR-ROK ANCHORING CEMENT has almost unlimited field applications.

USES & APPLICATIONS:

- Anchors-- Bolts, Dowels, Railings, Reinforcing Rods, Ceramic Fixtures, Machinery, Pipes in Concrete
- Grouts—Heavy Machinery, Structural Columns, Bearing Plates, Pre-cast Columns
- In setting, exerts expansion forces which “locks in”
- Anchor bolts, railings, etc.

ADVANTAGES:

1. No rodding, chaining or vibrating
2. Pourable
3. Ideal for patching floors, walls, crack in concrete structures, caulking foundations/wall voids
4. Easy to use-mix with water
5. No heating or two component mixing needed
6. Quick Setting—Sets in 15 minutes
7. Expands as it sets
8. Stronger than concrete in 1 hour

POR-ROK Specifications for Maximum Anchoring Strengths:

The following table specifies the recommended opening to be drilled so that the strength of the setting will approximate the tensile strength of a mild steel bolt of the diameter shown or cause concrete failure.

All bolts must have a washer. The washer should be large enough to fit the diameter of the opening with only enough tolerance so that the washer will be free to reach and rest snugly against the head of the bolt at the bottom of the opening.

If the washer is slightly too large, it is better to widen the opening than to reduce the size of the washer.

In the case of weaker concrete, the depth should be increased to provide a greater purchase to the concrete slab. This will minimize the danger of failure due to fracture of the concrete in the presence of extreme strains.

<u>Diameter of Bolt to be fastened</u>	<u>Diameter of Opening</u>	<u>Minimum Depth of Opening</u>
1/4"	3/4"	3"
3/8"	1 1/4"	4"
1/2"	1 1/2"	4"
5/8"	1 3/4"	6"
3/4"	1 3/4"	6"
1"	2"	8"
1 3/4"	2 1/2"	12"

*The minimum depths shown are based on openings drilled in sound concrete of at least 3,000 lbs. per square inch compression strength.

POR-ROK CEMENT STEEL REINFORCING ROD PULLOUT TESTS

An independent testing laboratory recently tested POR-ROK Cement as an anchoring medium for steel reinforcing rods.

Note: Pull-out tests were performed on a specially prepared concrete slab, varying in thickness from 24" to 8" thick, 16 ft. wide X 16 ft. long. The compressive strength of the concrete at 28 days was 4620 psi. The concrete was over one year old when tests were performed.

Holes up to and including 1" diameter were drilled with a carbide bit and a Roto-hammer drill. Holes 1/2" diameter on up were drilled with a diamond core bit.

Compressive Strength: POR-ROK was poured into 2" cube molds, set 40-45 minutes, Compression test made on Baldwin Southwark Machine – 60,000 pound capacity in accordance with ASTM specification C29-70T cured either under ambient conditions or to constant weight.

<u>Age</u>	<u>Average Load at Failure</u>	<u>Average Lbs. Per Sq. In.</u>	<u>Test Method</u>
1 Hr.	20,360	5090	Air dry
24 hrs.	21,360	5340	Air dry
7 days	27,660	6915	Air dry
7 days	37,016	9254	Dry to Constant Wt.

Bond Strength: High strength A325 bolts with washers that rest on head of bolt large enough to fit diameter of the drilled hole – Test slab is 4620 psi concrete.

<u>Bolt Size (in.)</u>	<u>Diameter of Hole (in.)</u>	<u>Depth of Hole (in.)</u>	<u>Average (lbs) Bond Strength</u>
1/4	3/4	2	4900 Nut Failed-Bolt Pulled Out
1/2	1 1/2	4	13500 Concrete Failed
3/4	1 3/4	6	42000 Concrete Failed
1	2	8	68000 Concrete Failed

Set Time: At 70° F initial set, 18 minutes. (± 3) final set 45 minutes. Test: Gilmore Setting Needles.

Linear Movement: Non Shrink – Expansion not more than .003 inches per linear inch of POR-ROK.

Coverage: One cubic foot, 100 lbs. of POR-ROK Cement mixed with 2 1/3 gallons of water shall fill one cubic foot.

Weight per Cubic Foot: Weight after setting up not to exceed 125 pounds per cubic foot. Based on 100 lbs. of POR-ROK mixed with 2 1/3 gallons of water.

Test Results:

The following results were reported:

<u>Size of Rod</u>	<u>#4 (1/2")</u>	<u>#6 (3/4")</u>	<u>#8 (1")</u>
Type of Rod	Deformed	Deformed	Deformed
Diameter of Hole (in.)	1	1 3/4	2
Depth of Hole (in.)	8	12	16
Yield Load of Rod (Lbs.)	-	42,500	43,000
Load Req. to Pull Out Rod	16,200	Rod or Concrete Failed	Rod Failed Weld to Bolt

GENERAL INFORMATION:

Please contact CGM, Inc. at any of the following numbers for customer service or technical assistance

Voice: 215-638-4400
 Fax: 215-638-7949
 Toll Free: 800-523-6570
 E-mail: info@cgmcement.com
 On the web @ www.cgmbuildingproducts.com

SHELF LIFE:

When stored in original, un-opened container, one year. Rotate your stock.

PACKAGING:

POR-ROK is packaged in a 50 lb., 25lb, 10lb and 5lb containers.

APPLICATION:

1. Pro-Rok must be mixed with water to a flowable (pouring) consistency.
2. Correct water ratio is 3.0 ounces of water to one pound of POR-ROK or 15 ounces of water to 5 lbs. of POR-ROK.
3. The hole must be free of particles and debris. Fill hole with water-scrub sides and bottom with stiff scrub brush. Remove excess water. The hole must be clean and uniformly damp. Always use the appropriate flat washer or the size bolt you are anchoring. Place bolt in hole with head down and washer resting on the head.
4. Pour the POR-ROK mixture into the space around the bolt.

NOTE: POR-ROK will erode and/or exhibit strength loss if left exposed to water. Where these conditions exist, consider use of SUPER POR-ROK or coat POR-ROK with an industrial coating after POR-ROK Cement has cured for a minimum of seven days.

Table for estimating quantity of POR-ROK cement needed for anchoring

NOTE: Settings less than 2" deep are not recommended.

Dia. of Bolt, Post to be Fastened	Dia. of Drilled Opening	Depth of Opening								
		2"	3"	4"	5"	6"	8"	10"	12"	
1/4"	1/2"	.33oz	.4 oz	.5oz	.7oz	.9oz	1.1oz	1.3oz	1.6oz	
	3/4"	.8oz	1.1oz	1.4oz	1.8oz	2.2oz	2.9oz	3.6oz	4.3oz	
3/8"	5/8"	.3 oz	.5oz	.8oz	.9oz	1.1oz	1.4oz	1.8oz	2.2oz	
	3/4"	.7 oz	.9 oz	1.2oz	1.5oz	1.8oz	2.5oz	3.0oz	3.7oz	
	1"	1.1oz	1.8oz	25.oz	3.1oz	3.7oz	5.0oz	6.2oz	7.5oz	
1/2 "	1 1/4"	2.1oz	3.2oz	4.1oz	5.2oz	6.2oz	8.3oz	10.3oz	12.4oz	
	3/4"	.4oz	.6oz	.9oz	1.1oz	1.4oz	1.8oz	2.3oz	2.7oz	
	1"	1.1oz	1.6oz	2.2oz	2.7oz	3.3oz	4.3oz	5.4oz	6.5oz	
5/8"	1 1/4"	2.8oz	2.8oz	3.8oz	4.8oz	5.8oz	7.6oz	9.6oz	11.4oz	
	1 1/2"	4.1oz	6.1oz	8.2oz	10.2oz	12.3oz	1.0lb	1.3lb	1.5lb	
	1 3/4"									
3/4"	1"	.9oz	1.3oz	1.7oz	2.2oz	2.6oz	3.6oz	4.3oz	5.3oz	
	1 1/4"	1.7oz	2.6oz	3.4oz	4.2oz	5.1oz	6.8oz	8.5oz	10.2oz	
	1 1/2"	3.9oz	5.9oz	7.8oz	9.7oz	11.6oz	15.5oz	1.2lb	1.4lb	
1"	2"	5.2oz	7.8oz	10.5oz	13.2oz	15.8oz	1.3lb	1.6lb	2.0lb	
	1 1/4"	.7oz	1.2oz	1.3oz	1.6oz	2.0oz	2.5oz	3.2oz	3.8oz	
	1 1/2"	1.4oz	2.2oz	2.9oz	3.6oz	4.4oz	5.9oz	7.3oz	8.7oz	
1 1/4"	2"	2.5oz	3.7oz	4.9oz	6.1oz	7.4oz	9.8oz	12.3oz	14.7oz	
	2 1/2"	5.0oz	7.5oz	10.0oz	12.5oz	15.0oz	1.2lb	1.5lb	1.8lb	
	3"	8.3oz	12.4oz	16.5oz	21.1oz	25.1oz	2.1lb	2.6lb	3.2lb	
1 1/2"	1 1/2"	1.8oz	2.7oz	3.6oz	4.6oz	5.4oz	7.3oz	9.1oz	10.8oz	
	2"	4.4oz	6.5oz	8.7oz	11.0oz	13.0oz	1.1oz	1.4lb	1.6lb	
	2 1/2"	7.6oz	11.4oz	15.2oz	1.2lb	1.4oz	2.0 lb	2.4lb	2.8lb	
2"	3 1/2"	1.1lb	1.5lb	2.1lb	2.6lb	3.0lb	4.1lb	5.1lb	6.1lb	
	1 1/4"	1 1/2"	1.0oz	1.5oz	1.9oz	2.5oz	3.0oz	5.0oz	6.0oz	
	2"	3.6oz	5.3oz	7.1oz	8.9oz	10.7oz	14.0oz	1.1lb	1.3lb	
1 1/2"	2 1/2"	6.8oz	10.2oz	13.6oz	1.1lb	1.3lb	1.7lb	2.2lb	2.6lb	
	3"	11.0oz	1.0lb	1.3lb	1.7lb	2.1lb	2.7lb	3.4lb	4.0lb	
	4"	1.5lb	2.3oz	3.0lb	3.7lb	4.5lb	6.0lb	7.5lb	9.0lb	
2"	2"	2.5z	3.8oz	5.1oz	6.4oz	8.0oz	10.2oz	12.7oz	15.2oz	
	1 1/2"	5.9oz	8.7oz	11.6oz	14.6oz	1.1ob	1.4lb	1.8lb	2.2lb	
	3"	9.8oz	14.7oz	1.2oz	1.5lb	1.8ob	2.5lb	3.0lb	3.7lb	
2 1/2"	4"	1.2lb	1.8lb	2.5lb	3.2lb	3.7ob	5.0lb	6.2lb	7.5lb	
	2 1/2"	3.3oz	4.9oz	6.5oz	8.2oz	9.8oz	13oz	1.0lb	1.2lb	
	3"	7.3oz	11.0oz	14.6oz	1.1lb	1.4lb	1.8lb	2.3lb	2.7lb	
3"	4"	1.1oz	1.6lb	2.2lb	2.7lb	3.3lb	4.3lb	5.4lb	6.5lb	
	2 1/2"	4.0oz	6.0oz	8.0oz	10.0oz	12.0oz	1.0lb	1.2lb	1.5lb	
	4"	14.1oz	1.3lb	1.7lb	2.2lb	2.6lb	3.6lb	4.5lb	5.3lb	
3"	4"	10.2oz	15.2oz	1.3ob	1.6lb	2.0lb	2.5lb	3.2lb	3.8lb	

The above data estimates the approximate amount of POR-ROK required to anchor one bolt or post, of the size given, in an opening of the dimensions specified in each case.

All bolts should be equipped with a washer. The opening must be drilled large enough so that the washer will be free to reach and rest snugly against the head of the bolt at the bottom of the opening.

WARRANTY:

CGM INC. warrants this product to be free of manufacturing defects. The sole responsibility and maximum liability of CGM under this warranty shall be at CGM's option, either (1) to replace the defective product in the form the product was purchased but not in the form the product was installed or used, or (2) to refund the purchase price of the product. In no event shall CGM be liable to the purchaser or to any third party for any loss or damage, of any type, including but not limited to incidental and/or consequential damage, resulting from the purchase or use of this product. In the event of any claim under this warranty, written notice must be given by registered mail. This warranty is in lieu of all other warranties, expressed or implied, including but not limited to warranties of merchantability and fitness for a particular purpose. Information contained herein is for evaluation purposes only. While CGM believes this information to be true and accurate as of this printing of this material, CGM shall have no obligation to notify purchasers of any error which is subsequently discovered in this information. CGM reserves the right to modify or improve any of its products, at any time without prior notice.