

POR-ROK®

Anchoring Cement Non Shrink Grout

Sets in 15 minutes — Expands as it Sets — Stronger Than Concrete in 1 Hour

ANCHORS

Bolts — Dowels — Railings —
Reinforcing Rods — Ceramic Fixtures —
Machinery — Pipes in Concrete

GROUTS

Heavy Machinery — Structural Columns —
Bearing Plates — Precast Columns

PATCHES

Floors — Walls — Cracks in Concrete
Structures — Caulking Foundations/
Wall Voids



POR-ROK CEMENT FACTS

Compressive Strength --- 9,254 psi
Bond Strength --- 72,000 Lbs. Pullout
Reinforcing Rod Bond Strength --- #8
Reinforcing Rod --- 43,000 Lbs. Pullout
Non Shrinking --- Non Rusting
Controlled Expansion --- .3%
Coverage: 100 Lbs. 1 Cubic Foot

POR-ROK^(R) ANCHORING CEMENT

"OVER 100 MILLION POUNDS SOLD"

Sets in 15 minutes

Expands as it Sets

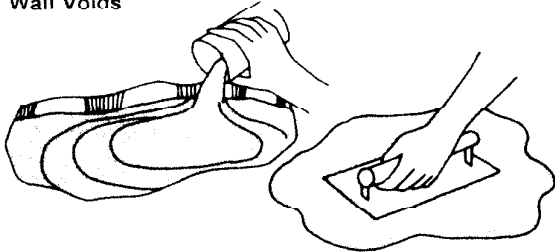
Stronger Than Concrete
in 1 Hour

POURS LIKE PANCAKE BATTER

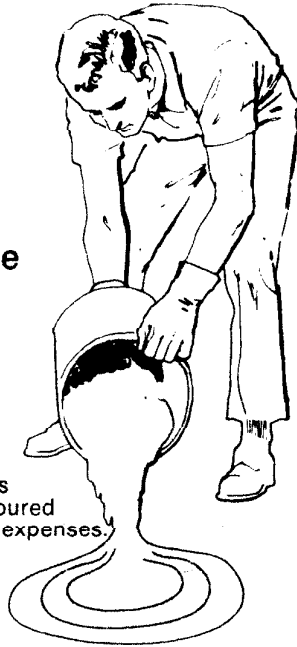
No rodding, chaining or vibrating is necessary with POR-ROK — it's poured into place reducing time and labor expenses.

PATCHES

Floors — Walls — Cracks in Concrete
Structures — Caulking Foundations/
Wall Voids



The fast setting characteristics of POR-ROK — Initial set 15 minutes — Final set 1 hour and compressive strength after 1 hour 5090 + psi, makes it ideal for patching concrete floors and walls. POR-ROK pours into place — needs no trowelling nor water curing.



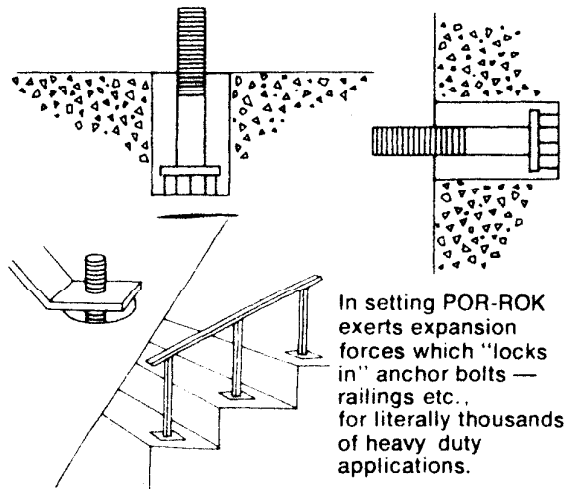
VERSATILE MULTI-PURPOSE

Por-Rok Cement is a non-shrink anchoring cement/grout with almost unlimited field applications.

POR-ROK Anchoring Cement is used in the anchoring of heavy machinery, railings, guard rails, bannisters, 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.

ANCHORS

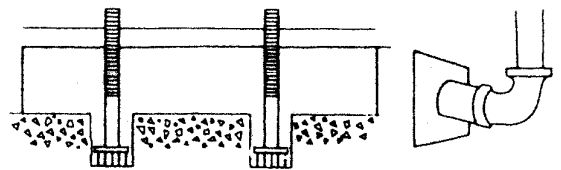
Bolts — Dowels — Railings —
Reinforcing Rods — Ceramic Fixtures —
Machinery — Pipes in Concrete



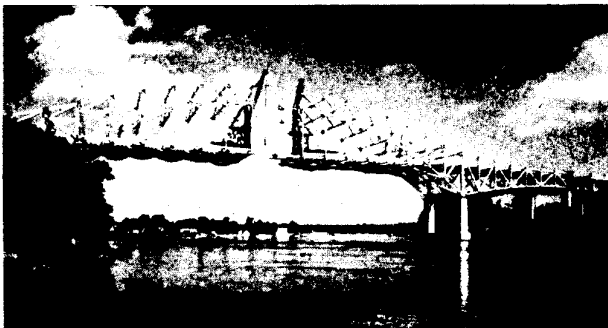
In setting POR-ROK exerts expansion forces which "locks in" anchor bolts — railings etc. for literally thousands of heavy duty applications.

GROUTS

Heavy Machinery — Structural Columns —
Bearing Plates — Precast Columns



POR-ROK's pourability makes it well suited for all types of grouting applications. 6500+ psi ultimate compressive strength provides a firm bed for heavy duty grouting applications.



← 3½" rebar anchored 11 feet into bedrock supports bridge.

Carriage bolt → to anchor machine base to floor.



TECHNICAL DATA:

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.

Diameter of Bolt to be fastened	Diameter of Opening	Minimum Depth of Opening*
¼"	¾"	3"
⅜"	1¼"	4"
½"	1½"	4"
⅝"	1¾"	6"
¾"	1¾"	6"
1"	2"	8"
1¼"	2½"	12"

*The minimum depths shown are based on openings drilled in sound concrete of a 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 1½" diameter on up were drilled with a diamond core bit.

Compressive Strength — Por-Rok was poured into 2 inch cube molds — set 40-45 minutes — Compression test made on Baldwin Southwark Machine — 60,000 pound capacity in accordance with ASTM specification C109-70T cured either under ambient conditions or to constant weight.

Age	Average Load at Failure	Average Lbs. Per Sq. In.	Test Method
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 — A 325 bolts with washers that rest on head of bolt large enough to fit diameter of the drilled hole — Test slab is 4620 psi concrete.

Bolt Size (in.)	Diameter of Hole (in.)	Depth of Hole (in.)	Average (lbs.) Bond Strength
¼	¾	2	4900 Nut Failed — Bolt Pulled Out
½	1½	4	13500 Concrete Failed
¾	1¾	6	42000 Concrete Failed
1	2	8	68000 Concrete Failed

Set Time — at 70°F. initial set — 18 min. (±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 2⅓ 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 2⅓ gallons of water.

TEST RESULTS

The following results were reported:

Size of Rod	#4 (½")	#6 (¾")	#8 (1")
Type of Rod	Deformed	Deformed	Deformed
Diameter of Hole (in.)	1	1½	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

APPLICATION:

1. Por-Rok shall be mixed with water to a fluid (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 shall be free of particles and debris. Fill hole with water-scrub sides and bottom with stiff scrub brush. Remove excess water. The hole shall be clean and uniformly damp. Always use the

appropriate flat washer for 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.

Dia. of Bolt or Post to be Fastened	Dia. of Drilled Opening	Depth of Drilled Opening							
		2"	3"	4"	5"	6"	8"	10"	12"
1/4"	1/2"	.33 oz.	.4 oz.	.5 oz.	.7 oz.	.9 oz.	1.1 oz.	1.3 oz.	1.6 oz.
	3/4"	.8 oz.	1.1 oz.	1.4 oz.	1.8 oz.	2.2 oz.	2.9 oz.	3.6 oz.	4.3 oz.
3/8"	3/8"	.3 oz.	.5 oz.	.8 oz.	.9 oz.	1.1 oz.	1.4 oz.	1.8 oz.	2.2 oz.
	3/4"	.7 oz.	.9 oz.	1.2 oz.	1.5 oz.	1.8 oz.	2.5 oz.	3.0 oz.	3.7 oz.
	1"	1.1 oz.	1.8 oz.	2.5 oz.	3.1 oz.	3.7 oz.	5.0 oz.	6.2 oz.	7.5 oz.
	1 1/4"	2.1 oz.	3.2 oz.	4.1 oz.	5.2 oz.	6.2 oz.	8.3 oz.	10.3 oz.	12.4 oz.
1/2"	3/4"	.4 oz.	.6 oz.	.9 oz.	1.1 oz.	1.4 oz.	1.8 oz.	2.3 oz.	2.7 oz.
	1"	1.1 oz.	1.6 oz.	2.2 oz.	2.7 oz.	3.3 oz.	4.3 oz.	5.4 oz.	6.5 oz.
	1 1/4"	1.8 oz.	2.8 oz.	3.8 oz.	4.8 oz.	5.8 oz.	7.6 oz.	9.6 oz.	11.4 oz.
	1 3/4"	4.1 oz.	6.1 oz.	8.2 oz.	10.2 oz.	12.3 oz.	15.9 oz.	19.9 oz.	24.4 oz.
5/8"	1"	.9 oz.	1.3 oz.	1.7 oz.	2.2 oz.	2.6 oz.	3.5 oz.	4.3 oz.	5.3 oz.
	1 1/4"	1.7 oz.	2.6 oz.	3.4 oz.	4.2 oz.	5.1 oz.	6.8 oz.	8.5 oz.	10.2 oz.
	1 3/4"	3.9 oz.	5.9 oz.	7.8 oz.	9.7 oz.	11.6 oz.	15.5 oz.	19.4 oz.	24.3 oz.
	2"	5.2 oz.	7.8 oz.	10.5 oz.	13.2 oz.	15.8 oz.	21.3 oz.	26.8 oz.	33.4 oz.
3/4"	1"	.7 oz.	1.0 oz.	1.3 oz.	1.6 oz.	2.0 oz.	2.5 oz.	3.2 oz.	3.8 oz.
	1 1/4"	1.4 oz.	2.2 oz.	2.9 oz.	3.6 oz.	4.4 oz.	5.9 oz.	7.3 oz.	8.7 oz.
	1 1/2"	2.5 oz.	3.7 oz.	4.9 oz.	6.1 oz.	7.4 oz.	9.8 oz.	12.3 oz.	14.7 oz.
	2"	5.0 oz.	7.5 oz.	10.0 oz.	12.5 oz.	15.0 oz.	19.9 oz.	24.8 oz.	30.7 oz.
	2 1/2"	8.3 oz.	12.4 oz.	16.5 oz.	20.6 oz.	24.7 oz.	32.9 oz.	41.0 oz.	50.1 oz.
1"	1 1/2"	1.8 oz.	2.7 oz.	3.6 oz.	4.6 oz.	5.4 oz.	7.3 oz.	9.1 oz.	10.8 oz.
	2"	4.4 oz.	6.5 oz.	8.7 oz.	11.0 oz.	13.0 oz.	17.4 oz.	21.8 oz.	26.2 oz.
	2 1/2"	7.6 oz.	11.4 oz.	15.2 oz.	19.0 oz.	22.8 oz.	30.7 oz.	38.6 oz.	46.5 oz.
	3 1/2"	1.1 lb.	1.5 lb.	2.1 lb.	2.6 lb.	3.0 lb.	4.1 lb.	5.1 lb.	6.1 lb.
1 1/4"	1 1/2"	1.0 oz.	1.5 oz.	1.9 oz.	2.5 oz.	3.0 oz.	4.0 oz.	5.0 oz.	6.0 oz.
	2"	3.5 oz.	5.3 oz.	7.1 oz.	8.9 oz.	10.7 oz.	14.0 oz.	17.3 oz.	20.6 oz.
	2 1/2"	6.8 oz.	10.2 oz.	13.6 oz.	17.0 oz.	20.4 oz.	27.3 oz.	34.2 oz.	41.1 oz.
	3"	11.0 oz.	16.5 oz.	22.0 oz.	27.5 oz.	33.0 oz.	43.4 oz.	53.8 oz.	64.2 oz.
	4 1/4"	1.5 lb.	2.3 lb.	3.0 lb.	3.7 lb.	4.5 lb.	6.0 lb.	7.5 lb.	9.0 lb.
1 1/2"	2"	2.5 oz.	3.8 oz.	5.1 oz.	6.4 oz.	8.0 oz.	10.2 oz.	12.7 oz.	15.2 oz.
	2 1/2"	5.9 oz.	8.7 oz.	11.6 oz.	14.5 oz.	18.1 oz.	22.8 oz.	28.5 oz.	34.2 oz.
	3"	9.8 oz.	14.7 oz.	19.6 oz.	24.5 oz.	30.4 oz.	39.5 oz.	49.0 oz.	58.5 oz.
	4"	1.2 lb.	1.8 lb.	2.5 lb.	3.2 lb.	3.7 lb.	5.0 lb.	6.2 lb.	7.5 lb.
2"	2 1/2"	3.3 oz.	4.9 oz.	6.5 oz.	8.2 oz.	9.8 oz.	13.0 oz.	16.0 oz.	19.0 oz.
	3"	7.3 oz.	11.0 oz.	14.6 oz.	18.3 oz.	22.0 oz.	28.5 oz.	35.0 oz.	41.5 oz.
	4"	1.1 lb.	1.6 lb.	2.2 lb.	2.7 lb.	3.3 lb.	4.3 lb.	5.4 lb.	6.5 lb.
2 1/2"	3"	4.0 oz.	6.0 oz.	8.0 oz.	10.0 oz.	12.0 oz.	16.0 oz.	20.0 oz.	24.0 oz.
	4"	14.1 oz.	21.1 oz.	28.1 oz.	35.1 oz.	42.1 oz.	55.1 oz.	68.1 oz.	81.1 oz.
3"	4"	10.2 oz.	15.2 oz.	20.2 oz.	25.2 oz.	30.2 oz.	39.2 oz.	48.2 oz.	57.2 oz.

Table for Estimating Quantity of POR-ROK Cement Needed for Anchoring

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.

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

FEATURES AND ADVANTAGES

- **Quick Setting** — Less machinery down time — POR-ROK sets in 15-20 minutes — after 60 minutes attains 5,090 psi compression strength.
- **Controlled Expansion** — POR-ROK eliminates one of the major causes of anchor set failure — shrinkage. POR-ROK's controlled expansion (.003" per linear inch of POR-ROK) mechanically locks the bolt in place.
- **Pourable** — When mixed according to directions, POR-ROK becomes pourable and will seep into pores and crevices.
- **Easy to Use** — POR-ROK is job site mixed with water. No heating or two component mixing is needed.
- **Non-Rusting** — There are no ferrous metals or rust-promoting agents in POR-ROK.