

PC-Concrete™

Injectable Concrete Anchoring and Repair System

DESCRIPTION: PC-Concrete™ is a two component (1:1 ratio), 100% solids, high modulus, structural epoxy paste. PC-Concrete™ is a solvent free, no odor, high strength, moisture insensitive, non-sag epoxy system. The resin and hardener are uniformly dispensed from a cartridge system and mixed through a mixing nozzle using a standard caulking gun. PC-Concrete™, unlike many other anchoring and concrete repair systems, can be used vertically to fill cracks and can also be shaped and molded to rebuild missing areas of masonry. PC-Concrete™ will NOT SHRINK.

FEATURES: High strength anchoring and setting pins and rods (doweling) - Bonds to: (metal, concrete, brick, wood, stone, block etc...)- Pick proof sealant - windows, doors, locks, etc..i.e. Correctional Facilities or wrought iron security gates and fencing.

DIRECTIONS: 1. Unscrew cap from the cartridge and remove plug. Insert into standard caulking gun. 2. Screw on mixing nozzle to cartridge. Make sure that the nozzle and cartridge assembly is secure. 3. Dispense the epoxy with cartridge gun. DO NOT APPLY TOO MUCH PRESSURE TO GUN HANDLE. Note: The cartridge seals only move half way down the cartridge.

ANCHORING & DOWELING: In order to achieve the desired results, carefully follow these procedures. 1. Drill hole to proper diameter and depth. Blow out dust from the bottom of the hole. 2. Unscrew cap from bottom of cartridge and remove plug. Insert into a standard caulking gun. 3. Dispense a small amount of adhesive into a disposable container until you get an even flow of gray and white material. 4. Screw on mixing nozzle to cartridge. Dispense 1 2"-3" bead of adhesive into a disposable container, until the color becomes a consistent gray with no streaks. 5. Dispense the material from the bottom of the hole. Fill approximately 1/2 of the hole depth while slowly withdrawing the nozzle. 6. Insert the thread rod or rebar to the bottom of the hole while turning clockwise. Do not disturb or bolt-up until minimum bolt-up time has passed.

CAUTION: Do not attempt to force adhesive out of a hardened mixing nozzle. In cold weather, below 65°F (18°C), warm the cartridge to 85°F (29°C) prior to dispensing.

APPLICATIONS: * Highest strength adhesive and one of the strongest in the industry. * Moisture insensitive - May be used in damp or UNDERWATER environments. * May be used in concrete, hollow block, brick, clay and stone. * Perfect for vertical, horizontal, overhead and screen applications. * Seismic anchoring and bracing. * Surface crack repair.

PROPERTIES:

Tension Load (1/2") 22,338 lbs. (153Mpa)

Working Time: 75°F (24°C) - 20 Minutes

Cure Time: 75°F (24°C) - 4 Hours

Temperature Range: 35°F (1.7°C) - 115°F (46°C)

Mix Ratio: 1:1

Color: Gray

Shelf Life: 2 Years

Storage: Below 95°F (35°C)

Size: 250 ml / 600 ml / 102 oz. /10 gallon

LIMITED WARRANTY

Recommendations concerning the performance or use of this product are upon independent test reports believed to be reliable. If the product is proven to be defective, at the option of the manufacturer, it will be replaced or the purchase price refunded. The manufacturer will not be liable for personal injury, loss or damage in excess of the purchase price. The user will be responsible for deciding if the product is suitable for their application and will assume all risks associated with the use of the product. This warranty is in lieu of any other warranty, expressed or implied, including, but not limited to, an implied warranty of merchantability or an implied warranty of fitness for a particular use.

Independent ASTM C881-99 Technical Data

Properties	ASTM	Results
Compressive Yield Strength	D695	9,900 psi (69 Mpa) (7 day)
Compressive Modulus	D695	191,280 psi (1319 Mpa) (7 day)
Tensile Strength	D638	6,790 psi (47 Mpa) (7 day)
Elongation	D638	1.9% (7 day)
Bond Strength	C882	1,100 psi (7.5 Mpa) (2 day) – 1,640 psi (11.3 Mpa) (14 day)
Consistency	C881	Non – Sag Paste
Heat Deflection	D648	134°F (57° C) (7 day)
Water Absorption	D570	0.40% (24 hours)
Linear Coefficient of Shrinkage	D2566	0.003

**Approvals / Listings: ICC – ER – 4996 SBCCI Report No. 2055 COLA RR – 25265 Miami Dade Product Control
Independent Laboratory Tested: Meets ASTM C881-99: Type I, II and V, Grade 3, Class B and C**

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PC-Concrete™ has been tested in accordance with the ICC / Acceptance Criteria for Adhesive Anchors in Concrete and Masonry Elements (AC58).

PC-Concrete™ is recognized for the following uses: * Static Loads * Seismic / Wind Loading * Log Term Creep at Elevated Temperatures * Static Loading at Elevated Temperatures * Damp Holes * Freeze Thaw Conditions * Critical and Minimum Edge and Spacing Distances.

TENSION LOADS FOR THREADED RODS

Safety Factor “Allowable” equals 25% of Ultimate Load, 32% for Steel

Threaded Rod Diameter (in)	Based on Bond Strength, 2000 PSI Normal Weight Concrete				Allowable, Based on Steel Strength			
	Hole Diameter (in)	Min Embedment Depth (in)	Ultimate Tension Load (LBS)	Allowable Tension Load (LBS)	ASTM A36 (LBS)	ASTM A307 GRADE C (LBS)	ASTM A193 GRADE B7 (LBS)	304/316 SS (LBS)
3/8	7/16	3 3/8	9,248	2,312	2,115	2,185	4,555	3,645
1/2	9/16	4 1/2	22,328	5,582	3,775	3,885	8,100	6,480
5/8	3/4	5 5/8	29,950	7,488	5,870	6,075	12,655	10,125
3/4	7/8	6 3/4	39,278	9,820	8,455	8,750	18,225	12,390
7/8	1	7 7/8	53,862	13,466	11,510	11,905	24,805	16,865
1	1 1/8	9	62,697	15,674	15,030	15,550	32,400	22,030
1 1/4	1 3/8	11 1/4	88,594	22,149	23,490	24,295	50,620	34,425

SHEAR LOADS FOR THREADED RODS
 Safety Factor “Allowable” equals 25% of Ultimate Load, 32% for Steel

Threaded Rod Diameter (in)	Based on Bond Strength, 2000 PSI Normal Weight Concrete				Allowable, Based on Steel Strength			
	Hole Diameter (in)	Min Embedment Depth (in)	Ultimate Shear Load (LBS)	Allowable Shear Load (LBS)	ASTM A36 (LBS)	ASTM A307 GRADE C (LBS)	ASTM A193 GRADE B7 (LBS)	304/316 SS (LBS)
3/8	7/16	3 3/8	7,189	1,797	1,090	1,125	2,345	1,870
1/2	9/16	4 1/2	12,863	3,216	1,935	2,000	4,170	3,330
5/8	3/4	5 5/8	22,855	5,714	3,025	3,130	6,520	5,210
3/4	7/8	6 3/4	32,304	8,076	4,355	4,505	9,390	6,390
7/8	1	7 7/8	36,214	9,054	5,930	6,135	12,780	8,680
1	1 1/8	9	52,151	13,038	7,745	8,010	16,690	11,340
1 1/4	1 3/8	11 1/4	69,011	17,253	12,100	12,515	26,075	17,730

TENSION AND SHEAR LOADS FOR REBAR
 Safety Factor “Allowable” equals 25% of Ultimate Load, 32% for Steel

Rebar Size	Based on Bond Strength, 2000 PSI Normal Weight Concrete					Allowable, Based on Steel Strength, Grade 60		
	Hole Diameter (in)	Min Embedment Depth (in)	Ultimate Tension Load (LBS)	Allowable Tension Load (LBS)	Ultimate Shear Load (LBS)	Allowable Shear Load (LBS)	Tension Load (LBS)	Shear Load (LBS)
No. 4	5/8	4 1/2	23,203	5,801	11,242	2,811	4,710	3,060
No. 5	3/4	5 5/8	32,326	8,082	21,032	5,258	7,365	4,740
No. 6	7/8	6 3/4	44,481	11,120	32,294	8,074	10,605	6,730
No. 7*	1	7 7/8	19,647	12,412	35,438	8,860	14,430	9,180
No. 8	1 1/8	9	54,812	13,703	38,582	9,646	18,850	12,085

- Values were interpolated from No. 6 and No. 8 Rebar testing.

REDUCTION FACTOR FOR EDGE DISTANCES FOR THREADED ROD

Embedment Depth	Edge Distance Factor, Tension Only			Edge Distance Factor, Shear Only			Spacing Factor, Tension Only		
	C CR	C MIN	f RN	C CR	C MIN	f RV	S CR	S MIN	f A
9 x D	1.5 x h ef	0.5 x h ef	0.54	1.5 x h ef	0.5 x h ef	0.25	1.75 x h ef	-	-

C = Edge Distance

S = Spacing Distance

h ef = The anchor embedment depth

C = The measure between the anchor center line and the free edge

C MIN = The least edge distance for which recognition is desired

S CR = The least spacing between anchors where no reduction would be applied

f RN, f RV = Load reduction factors to be applied when $C_{MIN} \leq C < C_{CR}$

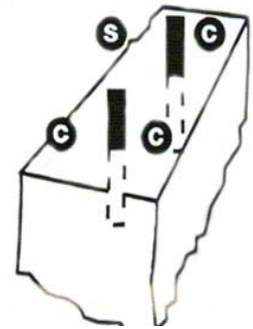
D = The diameter of the rod

C CR = The least edge distance where no reduction would be applied

S MIN = The least spacing between anchors for which recognition is desired

S = The measure between anchors from center line to center line

f A = Load reduction factors to be applied when: $S_{MIN} \leq S < S_{CR}$



TENSILE – EDGE DISTANCE – 9D Embedment's

	Anchor Diameter						
	3/8 in	1/2 in	5/8 in	3/4 in	7/8 in	1 in	1 1/4 in
Ultimate Load	9,248	22,328	29,948	39,276	53,860	62,696	88,592
Edge Distance	Multiplier Table						
1 3/4 inches	0.55						
2 inches	0.58						
2 1/4 inches	0.62	0.54					
2 1/2 inches	0.65	0.57					
2 3/4 inches	0.69	0.59					
3 inches	0.72	0.62	0.56				
3 1/4 inches	0.76	0.64	0.58				
3 1/2 inches	0.79	0.67	0.60	0.55			
3 3/4 inches	0.83	0.69	0.62	0.57			
4 inches	0.86	0.72	0.64	0.58	0.54		
4 1/4 inches	0.90	0.74	0.66	0.60	0.56		
4 1/2 inches	0.93	0.77	0.68	0.62	0.57	0.54	
4 3/4 inches	0.97	0.80	0.70	0.63	0.58	0.55	
5 inches	1.00	0.82	0.72	0.65	0.60	0.57	
5 1/4 inches		0.85	0.74	0.67	0.62	0.58	
5 1/2 inches		0.87	0.76	0.68	0.63	0.59	
5 3/4 inches		0.90	0.78	0.70	0.65	0.60	0.55
6 inches		0.92	0.80	0.72	0.66	0.62	0.56
6 1/4 inches		0.95	0.82	0.73	0.67	0.63	0.57
6 1/2 inches		0.97	0.84	0.75	0.69	0.64	0.58
6 3/4 inches		1.00	0.86	0.77	0.70	0.65	0.59
7 inches			0.88	0.78	0.72	0.67	0.60
7 1/4 inches			0.90	0.80	0.73	0.68	0.61
7 1/2 inches			0.92	0.82	0.75	0.69	0.62
7 3/4 inches			0.94	0.84	0.76	0.70	0.63
8 inches			0.96	0.85	0.78	0.72	0.64
8 1/4 inches			0.98	0.87	0.79	0.73	0.65
8 1/2 inches			1.00	0.89	0.80	0.74	0.66
8 3/4 inches				0.90	0.82	0.76	0.67
9 inches				0.92	0.83	0.77	0.68
9 1/4 inches				0.94	0.85	0.78	0.69
9 1/2 inches				0.95	0.86	0.79	0.70
9 3/4 inches				0.97	0.88	0.81	0.71
10 inches				1.00	0.89	0.82	0.72
10 1/2 inches					0.92	0.84	0.74
11 inches					0.95	0.87	0.76

11 1/2 inches					0.98	0.90	0.78
12 inches					1.00	0.92	0.80
12 1/2 inches						0.95	0.82
13 inches						0.97	0.84
13 1/2 inches						1.00	0.86
14 inches							0.88
14 1/2 inches							0.90
15 inches							0.92
15 1/2 inches							0.94
16 inches							0.96
16 1/2 inches							0.98
17 inches							1.00