IPA SYSTEMS

IPANOL CWR ANCHORING GEL

Cold weather, Non-Sag, Anchoring Gel

IPA SYSTEMS

QUALITY PRODUCTS FOR THE CONCRETE /MASONRY REPAIR INDUSTRY

Description

Ipanol CWR Anchoring Gel is a solvent free, 100% solids, epoxy acrylate hybrid anchoring gel. The CWR Anchoring Gel has been designed to be utilized at temperatures as low as 0° degrees and attend high early strength.

Where to Use

Ipanol CWR Anchoring Gel is ideal for anchoring of rebar, threaded rods, and poxy coated dowels in all concrete, brick, or stone masonry.

Advantages

- Made in America
- Moisture insensitive before, during and after cure.
- Freeze thaw resistant.
- Styrene Free
- Suitable for use in wet or damp holes.
- Designed for cold weather applications
- Fast setting and strength-producing adhesive
- Ideal for close to the edge and shallow applications
- For use in solid and hollow masonry

Packaging

9.3 oz (275 ml) single cartridges, with nozzles and extension: 12 per case
28 fl. Oz (825ml) 750 ml x 75 ml cartridge with nozzles: 12 per case
Shelf Life: one year in unopened containers. Store in a cool dry place out of direct sunlight. Keep from freezing.
Store material below 75°F (23°C)

Technical Data

Mix Ratio (A To B By Volume)	10 to 1	
Gel Time:		7.5 minutes
Elongation at break:	ASTM D-638	1.321%
Compressive Strength:	ASTM C-695	10,540 psi
Compressive Modulus	ASTM C-695	265,000 psi
Bond Strength: (2 day cure)	ASTM C-882	2,890 psi
(14 day cure)	ASTM C-882	3,250 psi
Viscosity/ Consistency:	1/4" non-sag	
Absorption:	ASTM D-570	0.08%
Heat Deflection Temperature		144° F
Density (lb/gal) Component A	ASTM D-1875	12.92
Density (lb/gal) Component B	ASTM D-1875	13.69

COMPLIANCES

Ipanol CWR Anchoring Gel: ASTM-C-881: Types I, II*, IV, V*;Grade 3; Classes A, B, & C *Except Gel Time
V.O.C. Compliant
Meets USDA specifications for use in food processing areas
Passed ICC-ES AC58 (Se.5.3.3) ASTME-1512 (Sec.7.1 & 7.5) Elevated Temperature Creep Test

Surface Prep

Substrate must be cleaned of any film, scale, loose material, oils, grease and any other foreign material that will prohibit bond. Surface preparation must be achieved by mechanical means and methods. Sandblasting and/or other approved mechanical methods.

Mixing

Ipanol CWR Anchoring Gel is dispensed from cartridges eliminating mixing and measuring. Remove D plugs from small end of cartridge, insert cartridge into a suitable gun and purge the cartridge until a consistent distribution of the two components is achieved. Secure static mixer to cartridge by screwing the nozzle onto the cartridge. The static mixer tip has notches at the end. They me be cut back for even easier gunning. Extrude epoxy until a uniform grey color is achieved. Do not use epoxy with color streaks. Dispense under a constant uniform pressure. If dispensing is altered, re-establish a uniform grey color prior to continuing. When using a handgun, release pressure from gun by pressing thumb button at every pause in dispensing, otherwise, re-establish uniform grey color prior to continuing.

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Application

TO ANCHOR BOLTS, DOWELS, & PINS:

Step 1. Drill holes to proper diameter and length.
Step 2. Blow concrete dust from hole with oil-free compressed air from back forward.
Step 3. Clean holes with a nylon brush.
Step 3. Blow concrete dust from hole with oil-free compressed air from back forward.
Step 4. After uniform color is achieved, static mixer should be placed in back of hole. Start extruding epoxy while pulling static mixer out, filling hole 1/2 full. rotate the bolt slightly as it is inserted to the back of the hole. Refer to tables for annular space, embedment depth, and edge distances.

Limitations

- Do not thin; solvents will prevent proper cure.
- Concrete or masonry surface must be frost free.
- Minimum age of concrete must be 3 to 7 days, depending on curing and drying conditions
- Do not allow mixed epoxy to reside in static mixing head or mixer for more than 5 minutes or gelation and blockage may result.
- Per NTSB safety recommendations, the use of adhesive anchors is prohibited in sustained overhead load anchoring applications.

Caution

FOR INDUSTRIAL USE ONLY:
Cautions - Irritant to skin and eyes. • Product is a strong sensitizer. Use of safety goggles and chemical resistant gloves are recommended. • Use of a NIOSH/MSHA organic vapor respirator recommended if ventilation is inadequate.. • Avoid breathing vapors. • Avoid skin contact.

FIRST AID
EYE CONTACT: Flush immediately with water for at least 15 minutes. Contact physician immediately.
RESPIRATORY PROBLEMS: Remove person to fresh air.
SKIN CONTACT: remove any contaminated clothing. Remove epoxy immediately with a dry cloth or paper towel.
Solvents should ***not*** be used as they carry the irritant into the skin. Wash skin thoroughly with soap and water.

Clean-up

Uncured material can be removed with a citrus cleaner or other approved solvent. Collect with absorbent material. Flush area with water. Dispose of in accordance with local, state, and federal disposal regulations. Cured material can only be removed mechanically.
See MSDS for additional precautionary information and health hazard data.

Warranty

This product is warranted and guaranteed to be of good quality. Manufacturer, as its sole and exclusive liability hereunder, will replace material if proved defective. This warranty and guarantee are expressly in lieu of all others, express or implied, including any implied warranty of merchantability or fitness for a particular purpose and may not be extended by representatives or any persons, written sales information, or drawing in any manner whatsoever. While the manufacturer recommends uses for the product based on tests believed reliable, no warranties, express or implied, or guarantee can be given as to particular methods of use or application, nor can performance be warranted, expressly or impliedly, or guaranteed under special conditions. Distributors, salesperson or company representatives are not authorized to extend or vary any warranties or guarantees beyond those outlined herein nor may the manufacturer's or seller's limitation of liability be waived or altered in any manner whatsoever.

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Value Charts

Information for tables A, B & C

- The tabulated shear and tension values are for anchors installed in normal weight concrete having reached the designated ultimate compressive strength at the time of installation.
- Anchors installed at the minimum edge distance must have the tabulated allowable tension load multiplied by a 0.65 reduction factor. Linear interpolation of allowable loads may be used for anchors installed at a distance between critical and minimum edge distance.
- Allowable load must be the lesser of the allowable steel strength and that allowable bond strength. Typically, allowable bond strength is equal to the ultimate bond strength divided by the safety factor of 4.

CURE TIME

MINIMUM SUBSTRATE TEMP.	GEL TIME	CURE TIME
0°F (-18°C)	4 HRS	24 HRS
5°F (-15°C)	3 HRS	22 HRS
20°F (-7°C)	45 MIN	6 HRS
40°F (4°C)	20 MIN	90 MIN
50°F (10°C)	15 MIN	60 MIN
60°F (16°C)	8 MIN	45 MIN
70°F (21°C)	7 MIN	35 MIN
80°F (27°C)	6 MIN	30 MIN
100°F (38°C)	5 MIN	25 MIN

(A.) ULTIMATE TENSION VALUES FOR THREADED ROD IN CONCRETE*

ANCHOR DIAMETER	BIT DIAMETER	EMBEDMENT	Critical Edge Distance, Ccr	Minimum Edge Distance, Cmin	Ultimate Bond strength (lbs) Concrete Strength, f'c		ALLOWABLE STEEL STRENGTH (lbf)		
(in)	(in)	(in)	(in)	(in)	2,300psi	4,300psi	A36/A307	A193 B7	300 Series Stainless
3/8	7/16	1 11/16	4 1/2	1 1/2	3520	5330	2110	4550	3630
3/8	7/16	3 3/8	4 1/2	1 1/2	10685	10785	2110	4550	3630
1/2	9/16	2 ½	6	2	6435	9780	3750	8100	6470
1/2	9/16	4 ½	6	2	15405	19985	3750	8100	6470
5/8	3/4	2 13/16	7 1/2	2 1/2	10600	17315	5870	12655	10130
5/8	3/4	5 5/8	7 1/2	2 1/2	29465	32730	5870	12655	10130
3/4	7/8	3 3/8	9	3	15780	24285	8460	18220	12400
3/4	7/8	6 3/4	9	3	28995	43460	8460	18220	12400
7/8	1	3 15/16	10 1/2	3 1/2	17425	31795	11500	24800	16860
7/8	1	7 7/8	10 1/2	3 1/2	40235	56865	11500	24800	16860
1	1 1/8	4 1/2	12	4	22980	35400	15020	32400	22020
1	1 1/8	9	12	4	54715	54945	15020	32400	22020
1 1/4	1 3/8	5 5/8	13 1/2	5	33220	54230	23480	50610	34420
1 1/4	1 3/8	11 1/4	13 1/2	5	74125	80180	23480	50610	34420

(C.) TENSION AND SHEAR VALUES FOR REINFORCING STEEL

ANCHOR DIAMTER	BIT DIAMETER	EMBEDMENT	CRITICAL EDGE DISTANCE Cmin	MINIMUM EDGE DISTANCE	TENSION BOND STRENGTH (IB,) CONCRETE STRENGHT (f'c)	ALLOWABLE STEEL STRENGTH TENSION OR SHEAR (IB,)	
	(in)	(in)	(in)	(in)	(lb,)	Grade 40	Grade 60
#3	7/16	3 3/8	4 1/2	1 1/2	6220	2200	2640
#4	5/8	4 ½	6	2	16430	4000	4800
#5	3/4	5 5/8	7 1/2	2 1/2	23310	6200	7440
#6	7/8	6 3/4	9	3	31145	8800	10560
#7	1	7 7/8	10 1/2	3 1/2	36975	12000	14400
#8	1 1/8	9	12	4	43320	15600	18720
#9	1 3/8	11 1/4	13 1/2	5	61340		17730

(B.) ALLOWABLE SHEAR VALUES-THREADED ROD IN 2000 PSI (min) CONCRETE

ANCHOR DIAMTER	BIT DIAMETER	EMBEDMENT	CRITICAL EDGE DISTANCE	ALLOWABLE SHEAR LOADS BASED ON BOND STRENGTH (IB,)	ALLOWABLE SHEAR LOAD BASED ON STEEL STRENGTH (IB,)		
(in)	(in)	(in)	(in)	(lb,)	A36/A307	A193 B7	300 Stainless Steel
3/8	7/16	3 3/8	1 3/4	1100	1080	2345	1870
1/2	9/16	4 ½	1 3/4	1425	1930	4170	3330
5/8	3/4	5 5/8	1 3/4	2175	3030	6520	5220
3/4	7/8	6 3/4	1 3/4	2535	4360	9390	6390
7/8	1	7 7/8			5930	12780	8680
1	1 1/8	9			7740	16690	11340
1 1/4	1 3/8	11 ¼			12100	26070	17730

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The following charts list estimated number o anchors that can be installed per cartridge. The number of anchors may vary depending upon waste and on site procedures. This guide is for estimating only and does not supersede engineer specifications.

ESTIMATING GUIDE- NUMBER OF HOLES / CARTRIDGE OF 28 FL. OZ (825 ML)

		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
THREADED ROD IN CONCRETE								HOLE DEPTH (IN)												
ROD SIZE (IN)	HOLE SIZE (IN)																			
3/8	7/16	244	163	122	98	81	70	61	55	50	45	41	38	36	33	31	29	28	27	25
1/2	9/16	173	116	87	70	59	50	43	37	36	32	29	27	24	23	22	20	19	19	18
5/8	3/4	89	60	45	36	31	25	23	20	18	17	15	14	13	13	11	11	10	10	9
3/4	7/8	71	47	36	29	24	20	18	17	14	13	13	11	10	10	9	9	9	8	8
7/8	1	60	39	31	24	20	15	15	14	13	11	10	10	9	9	8	8	8	6	6
1	1 1/8	48	33	24	20	17	14	13	11	10	9	9	8	8	6	6	6	6	5	5
1 1/8	1 1/4	43	29	22	18	15	13	11	10	9	9	8	8	6	6	6	5	5	5	5
1 1/4	1 3/8	37	25	19	15	13	11	10	9	8	8	6	6	6	5	5	5	5	4	4
1 1/2	1 5/8	29	20	15	13	10	9	8	6	6	6	5	5	5	4	4	4	4	4	4
REBAR IN CONCRETE																				
ROD SIZE (IN)	HOLE SIZE (IN)																			
#3	1/2	207	139	104	84	70	60	52	47	42	38	36	33	31	28	27	25	24	23	22
#4	5/8	162	108	81	65	55	47	41	37	33	31	28	25	24	22	20	19	19	18	17
#5	3/4	131	88	66	52	45	38	33	29	27	24	22	20	19	18	17	15	15	14	14
#6	7/8	104	70	52	41	36	31	27	24	22	19	18	17	15	14	14	13	13	11	11
#7	1	92	61	46	37	31	27	23	20	19	17	15	14	14	13	11	11	10	10	10
#8	1 1/8	79	52	39	32	27	23	20	18	17	15	14	13	11	11	10	10	9	9	9
#9	1 3/8	39	27	20	17	14	11	10	9	9	8	8	6	6	5	5	5	5	5	4
#10	1 1/2	38	25	19	15	13	11	10	9	8	8	6	6	8	5	5	5	5	5	4

ESTIMATING GUIDE- NUMBER OF HOLES / CARTRIDGE OF 9.03 FL. OZ (275 ML)

		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
THREADED ROD IN CONCRETE								HOLE DEPTH (IN)												
ROD SIZE (IN)	HOLE SIZE (IN)																			
3/8	7/16	74	49	37	30	25	21	19	17	15	14	12	12	11	10	9	9	9	8	8
1/2	9/16	53	35	26	21	18	15	13	11	11	10	9	8	7	7	6	6	6	6	5
5/8	3/4	27	18	14	11	9	8	7	6	5	5	5	4	4	4	3	3	3	3	3
3/4	7/8	22	14	11	9	7	6	5	5	4	4	4	3	3	3	3	3	2	2	2
7/8	1	18	12	9	7	6	5	5	4	4	3	3	3	3	3	2	2	2	2	2
1	1 1/8	15	10	7	6	5	4	4	3	3	3	3	2	2	2	2	2	2	2	2
1 1/8	1 1/4	13	9	7	5	5	4	3	3	3	3	2	2	2	2	2	2	2	2	2
1 1/4	1 3/8	11	8	6	5	4	3	3	3	2	2	2	2	2	2	2	2	2	1	1
1 1/2	1 5/8	9	8	5	4	3	3	2	2	2	2	2	2	2	1	1	1	1	1	1
REBAR IN CONCRETE																				
ROD SIZE (IN)	HOLE SIZE (IN)																			
#3	1/2	63	42	32	26	21	18	16	14	13	12	11	10	9	9	8	8	7	7	7
#4	5/8	49	33	25	20	17	14	12	11	10	9	9	8	7	7	6	6	6	5	5
#5	3/4	40	27	20	16	14	12	10	9	8	7	7	6	6	5	5	5	5	4	4
#6	7/8	32	21	16	12	11	9	8	7	7	6	5	5	5	4	4	4	4	3	3
#7	1	28	19	14	11	9	8	7	6	6	5	5	4	4	4	3	3	3	3	3
#8	1 1/8	24	16	12	10	8	7	6	5	5	5	4	4	3	3	3	3	3	3	3
#9	1 3/8	12	8	6	5	4	3	3	3	3	2	2	2	2	2	2	2	2	2	1
#10	1 1/2	12	8	6	5	4	3	3	3	2	2	2	2	2	2	2	2	2	2	1

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