

CONCRESI[®]VE 1420

General purpose gel epoxy adhesive

DESCRIPTION:

CONCRESI[®]VE 1420 is a two component general purpose epoxy adhesive with 100% solids and a non-sag consistency. Designed for the anchoring of fasteners, rebar and dowels into concrete it can also be used for other epoxy bonding applications. Supplied in a convenient, two part biaxial type (side-by-side) cartridge, CONCRESI 1420 is pre-measured so it's easy to use. A disposable static (motionless) mixing attachment reduces material waste, minimizes clean up and the associated use of solvents. CONCRESI 1420 may be used for fastening, anchoring and for bonding at substrate applications temperatures between 40 °F to 105 °F (4 °C to 41 °C).

RECOMMENDED FOR:

- Horizontal and vertical fastening of bolts, dowels and rebar into concrete
- Bonding metal, wood and other construction materials
- Pinning loose and broken masonry

FEATURES/BENEFITS:

- Economical packaging reduces material waste
- Easy to use cartridge
- Moisture tolerant bonding
- Meets ASTM C-881, Type I, Grade 3, Class B

PACKAGING/ESTIMATING:

CONCRESI 1420 is packaged in a 16.5 oz. (300 ml x 150 ml) biaxial cartridge, 20 per box.

Biaxial dispensing gun, static mixing nozzles and nozzle retaining nuts are sold separately. See page 3 for required dispensing equipment. Dispensing equipment may be available for rent. Check with your local Master Builders Distributor.

Coverage Rates are as follows at 1/8 in. (3 mm) thickness:

Smooth Surfaces	12 ft ² /gal (0.29 m ² /L)
Rough Surfaces	6 ft ² /gal (0.15 m ² /L)
	1 gal equals 7.8 cartridges

Concrete 1420 Estimating Procedure

Step #1

Find the sum of lineal inches of embedment for all anchors by: Multiplying the number of anchors required by their depth of embedment in inches (cm).

Step #2

Determine the number of cartridges needed by: Dividing the answer from Step 1 by the appropriate number from column 5 (inches) or 6 (centimeters).

* This table is provided for estimating but also will give an indication of savings in material to be gained from anchor-to-hole size selection. The table does not allow for waste or varying jobsite and substrate conditions.

CONCRESI [®] VE 1420 CARTRIDGE/ANCHOR ESTIMATING GUIDE*					
Bolt		Hole		Lineal Inches (cm)	
				per 16.5 oz. Cartridge	
Inch	cm	Inch	cm	Inch	cm
1/4	0.6	5/16	.8	1050	(2660)
		3/8	.9	472	(1198)
3/8	0.9	7/16	1.0	727	(1846)
		1/2	1.3	337	(856)
7/16	1.0	9/16	1.4	295	(749)
		5/8	1.6	185	(470)
1/2	1.3	5/8	1.6	262	(665)
		3/4	1.9	118	(300)
9/16	1.4	11/16	1.7	236	(599)
		3/4	1.9	150	(381)
		13/16	2.0	107	(271)
5/8	1.6	3/4	1.9	214	(543)
		13/16	2.0	137	(347)
		7/8	2.2	98	(249)
3/4	1.9	15/16	2.3	116	(294)
		1	2.5	84	(213)
7/8	2.2	1-1/8	2.8	73	(185)
		1-1/4	3.1	46	(117)
1	2.5	1-1/4	3.1	65	(165)
		1-3/8	3.4	41	(104)
1-1/4	3.1	1-1/2	3.8	53	(134)
		1-5/8	4.0	34	(86)
		1-3/4	4.3	24	(61)
1	2	3	4	5	6
COLUMNS					

PERFORMANCE DATA¹:

Tensile Strength (ASTM D638)	4,000 psi (27.5 MPa)
% Elongation at Break	1.0
Compressive Yield Strength (ASTM D695)	12,500 psi (86.1 MPa)
Compressive Modulus (ASTM D695)	4.5 x 10 ⁵ (3.06 GPa)
Heat Deflection Temperature (ASTM D648)	122 °F (50 °C)
Bond Strength, 2-Day Cure (ASTM C882)	>2,000 psi (20.7 MPa)

	Part A (Resin)	Part B (Hardener)
Form	LV Gel	LV Gel
Color	White	Black
Mixing Ratio , (by volume)	2 : 1 (A:B)	
Mixed Color	Gray	
Consistency , sag (ASTM C881)	Nil	
Pot Life* , minutes	15 minimum	
Open Time , minutes	40 maximum	
Initial Cure , hours	24 minimum	
Shelf Life	12 months minimum, when stored in unopened units at temperatures between 40 °F and 90 °F (4 °C and 32 °C). When dispensing epoxy from biaxial cartridge/static mixing systems, condition materials between 60 °F and 80 °F (16 °C and 27 °C) to ensure mixing consistency and ease of handling.	

*Test temperature: 77 °F (25 °C), cured 7 days. Properties listed are typical and descriptive of the product and should be used only to determine suitability for a particular application.

The following information regarding surface preparation, mixing, and application is provided as a brief overview. For detailed instructions before use of this product, reference the CONCRESlVE 1420 product packaging.

SURFACE PREPARATION:

Concrete Surfaces

Substrate may be dry or damp, but optimum results are obtained on a dry surface. New concrete must be fully cured, typically 28 days.

Remove concrete laitance, dirt, dust, oil, curing compounds or other substances detrimental to bonding by scrubbing with an industrial grade cleaning solution or degreasing compound. Follow wash/degreasing with mechanical cleaning (ref.: ASTM D4258).

Remove weak damaged or deteriorated concrete by shot blasting, bush hammering, grit blasting, scarifying or other suitable mechanical means. Follow mechanical cleaning with vacuum cleaning (ref.: ASTM D4259).

Acid-etching with 15% hydrochloric acid should only be used if there is no practical alternative. It must be followed by pressure washing, scrubbing and flushing with copious amounts of clean fresh water. Check for removal of acid with moist pH paper. Reading should be 10 or greater.

Concrete Holes

Holes may be wet or dry drilled using either percussive or rotary machines. Percussive methods are preferred since they produce a rougher cut, providing a better key for the grouting adhesive.

Surface laitance must be removed from precast holes. Whenever possible, cast holes undersize and drill to size after the concrete has cured.

Wet drilled holes should be flushed with clean water to remove residue, the water removed, and the holes then blown out with oil free compressed air. Whenever possible, the holes should be allowed to dry. Damp concrete must be at least surface dry, and absent of a rising moisture condition.

Dry drilled holes should be blown out with a nylon bristled blow gun attachment, using oil-free compressed air or vacuumed to remove drilling dust and debris.

Steel Surfaces

Remove dirt, grease and oil with a suitable industrial grade cleaning and degreasing compound (ref.: SSPC SP-1).

Remove rust and mill scale by grit blasting. Blast steel to near white metal. Follow grit blasting with vacuuming or oil-free dry air blast (ref.: SSPC-SP-10 and NACE-2).

MIXING:

CONCRESlVE® 1420 biaxial cartridges are mixed by a disposable static mixing attachment. The cartridges are manipulated using a specially designed drop-in type dispensing gun. The pot life of the material requires that diligence be exercised in the dispensing of this material to prevent clogging and excessive waste of static mixing attachments. Pneumatic or high mechanical advantage manual dispensing guns are recommended. ALWAYS condition CONCRESlVE 1420 cartridges to between 60 °F and 80 °F (16 °C and 27 °C) to speed and ease dispensing and to ensure mixing consistency.

APPLICATION:

General Bonding

Optimum bond strengths are obtained on dry, contaminate-free concrete which has been profiled to expose fine aggregate. Bond line thickness should be between 1/32 in. and 1/8 in. (0.79 mm and 3 mm). Ideally, a small amount of material should be extruded when the bonding surfaces are joined and pressure applied. Surfaces must be joined while the epoxy adhesive is still tacky (within the open time).

Anchor Hole Design

As the annular space between the anchor and the hole becomes smaller, creep resistance is improved by increased confinement of the epoxy adhesive. Hole diameters 1/4" minimum to 1/2 in. maximum (0.6 cm to 1.3 cm), greater than the bolt diameter are common. Hole diameters less than 1/4 in. (0.6 cm) of the bolt diameter can make adhesive placement difficult and may result in entrapment of air while inserting anchor.

Install a measured amount of adhesive into the back of the hole, then insert the anchor to displace the adhesive towards the front of the hole. Secure anchor in the center of the hole. Remove excess adhesive before it hardens. When grouting holes deeper than 2 feet (0.6 m), pressure grouting is recommended.

CLEAN UP:

Mixed epoxy is much easier to clean up before it hardens. Remove excess adhesive from working surfaces and tools. Use solvents sparingly. Suitable solvents are acetone, methylethyl ketone (MEK) and Xylol (xylene), all FLAMMABLE or 1,1,1-trichloroethane, NON-FLAMMABLE. Cured epoxy can be removed with methylene chloride based epoxy strippers. Follow all safety and disposal requirements when using solvents.

LIMITATIONS:

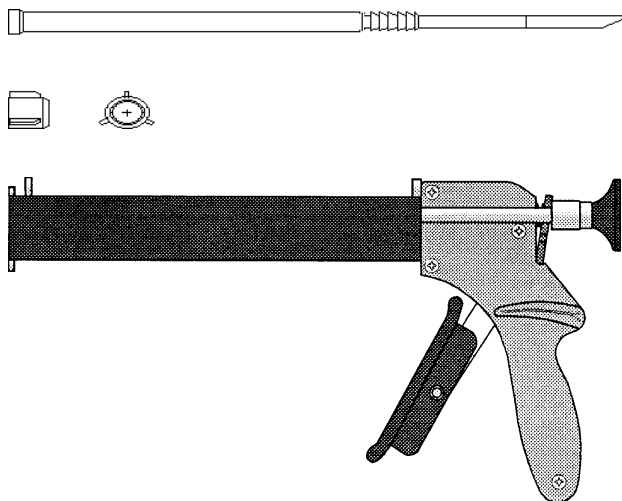
- Minimum substrate application temperature 40 °F (4 °C).
- Condition cartridges to between 60°F and 80 °F (16 °C and 27 °C) to ensure mixing consistency and ease of application.
- CONCREATIVE adhesives are two component epoxies formulated for industrial and professional use only, and must be kept out of reach of children. These products contain epoxy resins and curing agents which may be CORROSIVE and potentially HARMFUL to your health if not stored and used properly. Hazards can be significantly reduced by observing all precautions which are found on Material Safety Data Sheets (MSDS) and product labels. Please read this literature carefully before using this product. This Product Data Sheet does not accompany the product when sold.

CONCREATIVE® 1420 CARTRIDGE SYSTEM

Components not sold with CONCREATIVE 1420

Cartridge:

Biaxial Dispensing Gun
Static Mix Nozzle
Retaining Nut



RELATED BULLETINS:

Material Safety Data Sheet — CONCREATIVE 1420

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