

CONCRESlVE® 1090 LIQUID

High early strength liquid bonding adhesive

DESCRIPTION:

CONCRESlVE® 1090 two component, 100% solids, liquid epoxy bonding agent is designed for areas where high early strength is required.

RECOMMENDED FOR:

- Bonding fresh concrete to existing concrete.
- Grouting bolts, dowels and rebars into concrete, stone and masonry.
- Filling joints and voids in masonry.
- Bonding concrete to dissimilar materials such as steel, wood and plastics.

FEATURES/BENEFITS:

- High early strength.
- May be used on damp or dry surfaces.
- Meets ASTM C-881, Type I and Type II, Grade 2.

PACKAGING/ESTIMATING:

CONCRESlVE 1090 is packaged in 2 and 10 U.S. gal (7.6 and 38 L) units.

Coverage rates are as follows:

Smooth surfaces - 100 ft²/gal (2.4 m²/L)

Rough surfaces - 50 to 75 ft²/gal (1.2 to 1.8 m²/L)

PERFORMANCE DATA¹:

Tensile Strength 5,000 psi (34.5 MPa)
(ASTM D-638)

Elongation at Break 1% minimum
(ASTM D-638)

Compressive Yield Strength 11,500 psi (79 MPa)

Compressive Modulus 3.2 x 10⁵ psi (2.2 x 10³ MPa)
(ASTM D-695)

Slant Shear Strength 2 day wet/wet 2,000 psi (13.8 MPa)
(ASTM C-882) 14 day wet/wet 2,400 psi (16.5 MPa)

Water Absorption 0.67%
(ASTM D-570)

	60 °F (16 °C)	77 °F (25 °C)	105 °F (41 °C)
Viscosity — poise			
Resin - Part A	80	42	21
Hardener - Part B	100	58	28
Mixed	75	38	20

Open Time (Thin Film) 4 h 3 h 1 h

Initial Cure 36 h 24 h 12 h
(AASHTO T-237)

Full Cure 10 days 7 days 3 days
(ASTM D-695)

Pot Life (60 gram) @77 °F (25 °C) 2 h

1 quart (0.946 L)	50 minutes	35 minutes	15 minutes
1 gal (3.8 L)	45 minutes	30 minutes	10 minutes

Shelf Life 24 months minimum when stored at temperatures between 40 and 90 °F (4 and 32 °C).

	Components	
	Part A (Resin)	Part B (Hardener)
Color	Off White	Amber
Mixing Ratio (by volume)	1	1
Mixed Color	Gray	

¹Test specimens cured 7 days @ 77 °F (25 °C) and tested at same temperature. Properties listed are typical and descriptive of the product and may be used as a guide for determining suitability for particular applications.

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 1090 product packaging.

SURFACE PREPARATION:

Concrete Surfaces

Substrate may be dry or damp, although optimum results are obtained on a dry surface. New concrete must be fully cured (28-day minimum). Remove grease, wax, oil contaminants and curing compounds by scrubbing with an industrial grade detergent or a degreasing compound, then follow with mechanical cleaning.

The prepared surface must be clean, free of dust and textured to provide mechanical bond. Remove the surface skin of all finished or formed concrete.

Remove weak, contaminated or deteriorated concrete by shotblasting, bushhammering, gritblasting, scarifying or other suitable mechanical means. Follow mechanical cleaning with vacuum cleaning.

Acid-etching with 15 percent 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 water. Check for removal of acid with moist pH paper. Reading must be greater than 10.

Steel Surfaces

Remove dirt, grease and oil with a suitable, industrial grade cleaning and degreasing compound.

Remove rust and mill scale by gritblasting. Blast steel to white metal. Follow gritblasting with vacuuming or oil-free, dry-air blast.

MIXING:

Mix only the amount of material that can be used before the pot life expires. Thoroughly stir each component before mixing. Measure (ratio) the components carefully and then add Part B (Hardener) to Part A (Resin). Mix parts A and B using a low-speed drill (600 rpm) and mixing paddle (i.e. a Jiffy Mixer). Carefully scrape the sides and bottom of the container while mixing. Keep the paddle below the surface of the material to avoid entrapping air. Proper mixing will take at least 3 to 5 minutes. Well mixed material will be free of streaks or lumps.

APPLICATION:

General Bonding

Although this product will adhere to a damp surface, the best and most consistent results are obtained when bonding to a dry surface. When the surface is wet, remove free water by oil-free air blast or squeegee. Apply the bonding agent with a brush, paint roller, squeegee, conventional spray or airless spray. The minimum bondline thickness is 15 mL.

Bonding Fresh Concrete to Existing Concrete

The new concrete to be bonded should be a relatively dry mix with a maximum slump of 3 in. (75 mm). When bonding concrete containing polymer admixtures, check compatibility by either installing a test patch and performing a pull-off test or by a laboratory slant shear test (ASTM C-882). Lightweight concrete substrate may require a second coat if the first coat penetrates. Place fresh concrete within the "open time" or while the bonding agent is still tacky.

Bolt and Rebar Grouting

Holes may be cut by either rotary-percussion drilling followed by air blow-out with oil-free compressed air or by diamond core boring followed by water flush. The hole must be free of water before grouting. Where holes are precast into the concrete, cast them undersize, then drill to fit.

The diameter of the hole is 1/4 in. (6 mm) larger than that of the bar; larger annular spaces are less desirable.

Pour a measured amount of bonding agent into the hole. Insert the bar, displacing the bonding agent, then secure the bar in the center of the hole. Remove excess bonding agent from around the hole before it hardens. For grouting deep holes, pressure grouting may be required.

CLEAN UP:

Mixed epoxy is much easier to clean up before it hardens - solvents such as acetone, methyl ethyl ketone (MEK) or toluene may be used. Commercial epoxy/paint stripper solvents are recommended for hardened epoxy. Consult solvent manufacturer's usage recommendations.

LIMITATIONS:

- Application temperature range is 40 to 105 °F (4 to 41 °C).
- Do not add solvents or water to epoxy components.
- CONCRECISE adhesives are two-component epoxies formulated for industrial and professional use only, and must be kept out of the reach of children. These products contain epoxy resins and amine 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), product labels and technical literature. Please read this literature carefully before using these products.

RELATED BULLETINS:

Material Safety Data Sheet — CONCRECISE 1090

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