

# CONCRESlVE® LIQUID LPL

*Long pot life concrete bonding adhesive*

## DESCRIPTION:

CONCRESlVE® LIQUID (LPL) is a two component, 100% solids liquid epoxy bonding agent designed for application in warm environments or where a long working time is needed.

## 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 and wood
- Coating Rebar

## FEATURES/BENEFITS:

- Very long (pot life) working time
- Creamy high build liquid
- Bonds to damp concrete surfaces
- May be extended with properly graded sand
- Meets ASTM C-881, Type II, Grade 2, Classes B and C

## PACKAGING/ESTIMATING:

CONCRESlVE LIQUID LPL is packaged in 1 and 3 gal (3.8 and 11.4 L) units.

Coverage rates are as follows:

Smooth surfaces 100 ft<sup>2</sup>/gal (2.4 m<sup>2</sup>/L).

Rough surfaces 50 to 75 ft<sup>2</sup>/gal  
(1.2 to 1.8 m<sup>2</sup>/L).

## PERFORMANCE DATA<sup>1</sup>:

<b>Tensile Strength</b>	4,400 psi (30.4 MPa)
<b>Elongation at Break</b> (ASTM D 638)	1.49%
<b>Compressive Yield Strength</b>	8,300 psi (57.3 MPa)
<b>Compressive Modulus</b> (ASTM D 695)	3.5 x 10 <sup>5</sup> psi (2.4 x 103 MPa)
<b>Heat Deflection Temperature</b> (ASTM D 648)	127 °F (53 °C)
<b>Slant Shear Strength</b>	5,000 psi (34.5 MPa)
<b>Damp-to-Damp Concrete</b> (AASHTO T-237)	100% concrete failure.
<b>Bond Strength @ 14 days</b> (ASTM C-882)	1800 psi (12.4 MPa)
<b>Flexural Bond Strength</b> (ASTM C 293)	570 psi (3.9 MPa)

## Components

Part A (Resin)	Part B (Hardener)
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Liquid	Liquid
White	Black

2	1
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## Form

## Color

## Mixing Ratio (by volume)

## Mixed Color

Dark Gray

## Pot Life

@ 50 °F  
(10 °C)

@ 77 °F  
(25 °C)

@ 105 °F  
(41 °C)

1 qt (946 ml)

4.5 hrs

75 min

30 min

1 gal (3.8 L)

3.9 hrs

70 min

25 min

5 gal (18.9 L)

2.5 hrs

60 min

20 min

## Viscosity—poise

Resin

660

120

90

Hardener

11.5

3.5

1.1

Mixed

630

90

85

## Thin Film, Open Time

4 hrs

2 hrs

40 min

## Thin Film, Full Cure

14 days

7 days

3 days

## Shelf Life

A minimum of 18 months when stored  
in sealed containers at temperatures between  
32 °F and 90 °F (0 °C and 32 °C).

<sup>1</sup>Test temperature 77 °F (25 °C), cured 7 days.

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 LIQUID LPL 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. (Ref. ASTM D 4258). Remove weak, contaminated or deteriorated concrete by shotblasting, bush-hammering, gritblasting, scarifying or other suitable mechanical means. Follow mechanical cleaning with vacuum cleaning. (Ref. ASTM D 4259).

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 water. Check for removal of acid with moist pH paper. (Ref. ASTM D 4260). 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.

### Steel Surfaces

Remove dirt, grease and oil with a suitable, industrial grade, cleaning and degreasing compound. (SSPC-SP-1). Remove rust and mill scale by gritblasting. Blast steel to white metal. Follow gritblasting with vacuuming or oil-free, dry-air blast. (SSPC-SP-10)(NACE-2).

### MIXING:

Mix only the amount of material that can be used before the pot life expires. Thoroughly stir each component before mixing. Measure (ratio) each component carefully and then add Part B (Hardener) to Part A (Resin). Mix parts A & 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 bonded to a dry surface. When the surface is wet, remove free water by air blast or squeegee. Apply the bonding agent with a brush, paint roller, squeegee, conventional spray or airless spray. The minimum bondline thickness should be 15 mils.

#### Bonding Fresh Concrete to Existing Concrete

The new concrete to be bonded should be a relative dry mix with a maximum slump of 3" (75 mm). When bonding concrete containing latex polymer admixtures, check compatibility by either installing a test patch and performing a pull-off test or by a laboratory slant shear test (AASHTO T-237).

Apply the bonding agent as described in "General Bonding." Lightweight concrete 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 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 undersized and drill to fit.

The optimum hole size 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 holes deeper than 2 ft (0.6 m), pressure grouting is recommended.

### 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 50 °F to 105 °F (10 °C to 41 °C).
- Do not add solvents or water to epoxy components.
- CONCRESEIVE 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 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 — CONCRESEIVE LIQUID LPL

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