

CONCRESlVE® PASTE LPL

Long pot life concrete bonding adhesive

DESCRIPTION:

CONCRESlVE® PASTE LPL is a two component, 100% solids, non-sag epoxy adhesive used for vertical and overhead bonding and patching applications, and for horizontal anchoring.

RECOMMENDED FOR:

- Pinning loose or broken masonry
- Bonding rubber, metal, concrete, stone and other rigid materials
- Bonding plastics, foam and other flexible materials
- Fairing uneven surfaces, filling gaps and joints
- Bonding fresh to existing concrete
- Grouting bolts, dowels and rebar into concrete, stone and masonry
- Rigid, pick-proof, security sealant use

FEATURES/BENEFITS:

- Very long (pot life) working time
- Non-sag gel
- Bonds to damp concrete surfaces
- May be extended with properly graded sands
- Meets ASTM C-881, Type I & II, Grade 3, Class C

PACKAGING/ESTIMATING:

CONCRESlVE PASTE LPL is packaged in 1 and 3 U.S. gal (3.8 and 11.4 L) units. Coverage rates are as follows at a 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)

PERFORMANCE DATA¹:

Tensile Strength	2000 psi (13.8 MPa)
Elongation at Break (ASTM D 638)	4%
Compressive Yield Strength	8,000 psi (55.2 MPa)
Compressive Modulus (ASTM D 695)	4.0 x 10 ⁵ psi (2.8 x 10 ³ MPa)
Heat Deflection Temperature (ASTM D 648)	128 °F (53 °C)
Slant Shear Strength	>5,000 psi (34.5 MPa)
Damp-to-Damp Concrete (AASHTO T-237)	100% concrete failure
Bond Strength @14 days (ASTM C-882)	1500 psi (10.3 MPa)

	@ 60 °F (16 °C)	@ 85 °F (29 °C)	@ 105 °F (41 °C)
Non-Sag Thickness (ASTM D 2730)	3/4 in. (18 mm)	1/2 in. (12 mm)	1/4 in. (7 mm)
Initial Cure Time 5,000 psi (35 MPa) minimum (AASHTO T-237)	10 days	6 days	3 days
Full Cure Time (ASTM D695)	20 days	10 days	7 days
Pot life , 1 gallon (3.8 litres)	2 1/2 hrs	1 hr	1/2 hr
Open Time	3 hrs	90 min	40 min
Shelf Life:	18 months minimum when stored unopened at temperatures between 40° and 90 °F (4° and 32 °C)		
Components			
	Part A (Resin)	Part B (Hardener)	
Form	Paste	Paste	
Color	White	Black	
Mixing Ratio (by volume)	2	1	
Mixed Color	Gray		

¹Test Temperature: 77 °F (25 °C), cured 7 days. HDT: 128 °F (53 °C) after 28 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 PASTE 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 normally 28 days.

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, bushhammering, gritblasting, scarifying or other suitable mechanical means. (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. Reading should be greater than 10. (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

The bondline thickness should be between 1/32 in. and 1/8 in. (0.79 mm and 3 mm). Ideally, a small amount of bonding agent should be extruded from the joint when the surfaces are mated and pressure is applied. Surfaces must be mated while the paste is still tacky (within the open time). Deep surface irregularities can be faired with a 1:1 sand: CONCRESlVE PASTE LPL mix. Allow this fairing material to set. Within 24 hours, apply neat bonding agent with a trowel in sufficient quantities to fill all gaps between the mated surfaces.

Sand Quality

Use graded silica sand; washed, kiln-dried and bagged. A carefully selected blend of sands with a low void content will require less epoxy for a given volume of mortar compared to ungraded sands. A good "skip" gradation for low void content is a blend by weight of two parts #12 or #16 mesh to one part #80 to #100 mesh. When graded sands are not available, a good general purpose sand is #30 mesh silica.

Bolt and Rebar Grouting

Holes may be cut by either rotary-percussion drilling or 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 undersized, then drill to fit.

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

Install a measured amount of the bonding adhesive into the bottom of the hole with a caulking gun equipped with an extension nozzle. Insert the bar, displacing the paste, then secure it in the center of the hole. Remove excess bonding agent from around the hole before it hardens. For 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. 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 60 °F to 105 °F (16 °C to 41 °C).
- Non-sag characteristics will diminish at the upper end of the application temperature range.
- For structural use above 105 °F (41 °C) service temperature, sustained load conditions must be evaluated before application.
- CONCRESlVE 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 — CONCRESlVE PASTE LPL

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