

CONCRESlVE® 1490

General purpose paste bonding adhesive

DESCRIPTION:

CONCRESlVE® 1490 two component, 100% solids, non-sag epoxy adhesive is used for vertical and overhead bonding and patching applications and for horizontal anchoring.

RECOMMENDED FOR:

- Pinning loose or broken masonry.
- Bonding concrete and other rigid materials.
- Anchoring dowels and rebars.
- Fairing uneven surfaces, filling gaps and joints.
- Rigid, pick-proof security sealant use.

FEATURES/BENEFITS:

- High early strength cure.
- Excellent for overhead patching.
- Non-sag paste.
- Bonds to damp or dry surfaces.
- May be extended with properly graded sands.
- Meets ASTM C-881 Types I & II, Grade 3, Class C.

PACKAGING/ESTIMATING:

CONCRESlVE® 1490 is packaged in 2 and 10 U.S. gal (7.6 and 38 L) units.

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

Smooth surfaces - 12 ft²/gal (0.29 m²/L)

Rough surfaces - 6 ft²/gal (0.15 m²/L)

PERFORMANCE DATA¹:

Tensile Strength (ASTM D-638)	5,030 psi (34.5 MPa)
Elongation at Break (ASTM D-638)	1.8%
Compressive Yield Strength (ASTM D-695)	9,800 psi (67.6 MPa)
Compressive Modulus (ASTM D-695)	4.2 x 10 ⁵ psi (2.9 x 10 ³ MPa)
Slant Shear Strength	6,000 psi (41.4 MPa)
Damp-to-Damp Concrete (AASHTO T-237)	100% concrete failure
Flexural Bond Strength (ASTM C-293)	580 psi (4.0 MPa)
Bond Strength, @ 2 days (ASTM C-882)	3,000 psi (20.7 MPa)
Pot Life 60 grams, @77 °F (25 °C)	70 minutes
Water Absorption (ASTM D-570)	0.39%

	60 °F (16 °C)	77 °F (25 °C)	105 °F (41 °C)
Non-Sag Thickness (ASTM D-2730)	3/4 in. (18 mm)	3/4 in. (18 mm)	1/2 in. (13 mm)
Open Time (Thin Film)	4 h	3 h	1 h
Initial Cure (AASHTO T-237)	36 h	24 h	12 h
Full Cure (ASTM D-695)	10 days	7 days	3 days
Pot Life 1 gallon (3.8 liter)	50 minutes	40 minutes	15 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)
Form	Paste	Paste
Color	White	Black
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 complete instructions before use of this product, reference the CONCRESlVE 1490 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 (usually 28 days).

Remove grease, wax, oil contaminants and curing compounds by scrubbing with an industrial grade detergent, a degreasing compound or a solvent strong enough for complete removal, 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. 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 abundant amounts of clean water. Check for removal of acid with moist pH paper. Reading must be greater than 10. (Ref. ASTM D-4260). The prepared surface must be clean, free of dust and profiled 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

Deep surface irregularities can be faired with a 1 to 1 sand: CONCRESlVE 1490 mix. Allow this fairing material to set. Within 24 hours, apply neat CONCRESlVE 1490 bonding agent with a trowel in sufficient quantities to fill all gaps between the mated surfaces. The bondline thickness should be between 1/32 in. and 1/8 in. (1-1/2 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).

Sand Selection

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

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

Install a measured amount of 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 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 40 °F to 105 °F (4 °C to 41 °C).
- Do not add solvents or water to epoxy components.
- 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 selection of CONCRESlVE 1490.
- 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 1490

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