



# LV ADHESIVE

Low Viscosity Epoxy Adhesive

## PRODUCT DESCRIPTION

Five Star LV Adhesive is a two component, 100% solids, moisture insensitive, structural epoxy adhesive used in filling cracks up to 1/4 inch (6 mm). Five Star LV Adhesive is a low viscosity epoxy system that can be pressure injected or gravity fed. Five Star LV Adhesive can be used as a binder for making an epoxy patching mortar. Five Star LV Adhesive meets ASTM C 881 Types I, II, IV and V, Grade 1, Classes B & C.

## ADVANTAGES

- Low viscosity ensures deep penetration
- Moisture insensitive
- High modulus structural adhesive
- High strength
- Excellent adhesion to masonry, concrete, wood, steel and most structural material
- Meets USDA specification for use in food processing areas

## USES

- Gravity feed cracks in horizontal concrete and masonry
- Pressure injection of cracks in structural concrete, masonry, wood and other substrates up to 1/4 inch (6 mm) wide
- Sealing tunnels, cable vaults, tanks, and basements
- Seal interior slabs and exterior above grade slabs from water and chlorides
- Installation of bolts, anchors and dowels
- Binder for epoxy patching mortar of interior horizontal surfaces

## PACKAGING AND YIELD

Five Star LV Adhesive is available in a one gallon (3.7 liters) unit yielding approximately 231 cubic inches of material.

## SHELF LIFE

Two years in original unopened packaging when stored in dry conditions at 45°F - 90°F (5°C - 35°C).

| <b>TYPICAL PROPERTIES AT 70°F (21°C)</b>       |                                       |
|------------------------------------------------|---------------------------------------|
| <b>Color</b>                                   | Clear Amber                           |
| <b>Viscosity, ASTM D 2393</b>                  | 150 CPS                               |
| <b>Flexural Strength, ASTM D 790</b>           | 9600 psi (62.2 MPa)                   |
| <b>Bond Strength, ASTM C 882</b>               |                                       |
| 2 Day Cure                                     | 2400 psi (16.6 MPa)                   |
| 14 Day Cure                                    | 3600 psi (24.8 MPa)                   |
| <b>Shrinkage, ASTM D 2566</b>                  | .0021 in/in (mm/mm)                   |
| <b>Shear Strength, ASTM D 732</b>              | 9000 psi (62.1 MPa)                   |
| <b>Heat Deflection Temperature, ASTM D 648</b> | 122°F(50°C)                           |
| <b>Compressive Properties, ASTM D 695</b>      |                                       |
| Compressive Strength                           | 10600 psi (73.2 MPa)                  |
| Compressive Modulus                            | 2.10 x 10 <sup>5</sup> psi (1448 MPa) |
| <b>Tensile Properties, ASTM D 638</b>          |                                       |
| Tensile Strength                               | 7000 psi (48.3 MPa)                   |
| Percent Elongation at Break                    | 2.96%                                 |
| <b>Gel Time, ASTM C 881</b>                    | 30 minutes                            |

## PLACEMENT GUIDELINES

1. **SURFACE PREPARATION:** Surface must be clean and sound. For best results surfaces should be dry. Remove dust, laitance, grease, curing compounds, impregnations and waxes. Concrete may be sandblasted or prepared by other approved mechanical means. Steel should be sandblasted to an SSPC-SP6 commercial finish. Blow out all surfaces with oil free compressed air.
2. **MIXING:** Material should be preconditioned to between 65°F and 85°F (18°C and 29°C) before using. Pre-mix each component thoroughly. Place two parts by volume of Component A and one part by volume of Component B into a clean pail. Mix thoroughly for three minutes with a low speed drill (400 to 600 rpm). Do not mix more material than can be placed in 30 minutes at 70°F (21°C).  
**To prepare an epoxy mortar,** slowly add four to five parts by loose volume oven-dried aggregate to one part of the mixed Five Star LV Adhesive and mix until aggregate is uniformly wetted.
3. **METHODS OF PLACEMENT:**  
**Gravity Fill:** Pour over V-notched cracks on horizontal surfaces. Continue placement until cracks are completely filled. Prior to filling, seal underside of cracks with Five Star RS Anchor Gel or Five Star Injection Gel where required.  
**Pressure Injection:** Use automated equipment. Set appropriate injection ports. Seal ports and cracks with Five Star RS Anchor Gel or Five Star Injection Gel. When the epoxy adhesive seal has cured, inject Five Star LV Adhesive with steady pressure until crack is filled.  
**For an epoxy mortar:** Prime prepared surface with neat Five Star LV Adhesive. Place prepared epoxy mortar before primer becomes tack-free. Place epoxy mortar using trowel. Compact and level with steel trowel. Finish as necessary.
4. **CLEAN UP:** Use an appropriate solvent to clean uncured material. Cured material can only be removed mechanically.

**NOTE: PRIOR TO APPLICATION, READ ALL PRODUCT PACKAGING THOROUGHLY.** For more detailed placement procedures, refer to *Design-A-Spec™ installation guidelines* or call the Five Star Products Engineering and Technical Service Center at (800) 243-2206.

## CONSIDERATIONS

- Minimum application temperature of substrate is 40°F (4°C) and rising. Low temperatures adversely affect flowability and strength gain.
- Cold temperatures lengthen gel time, hot temperatures decrease gel time.
- Do not thin with solvents.
- Do not inject moving or leaking cracks.
- Minimum age of concrete must be 21 to 28 days, depending on curing and drying conditions prior to application.
- For cracks over 1/4 inch (6 mm), call Five Star's Engineering and Technical Service Center at (800) 243-2206.
- Material is a vapor barrier after cure.

## CAUTION

Irritant, toxic, strong sensitizer. Contains epoxy resin and amine. This product may cause skin irritation. Do not inhale vapors. Provide adequate ventilation. Protect against contact with skin and eyes. Wear rubber gloves, long sleeve shirt, goggles with side shields. In case of contact with eyes, flush repeatedly with water and contact a physician. Areas of skin contact should be promptly washed with soap and water. Do not take internally. Keep product out of reach of children. **PRIOR TO USE, REFER TO MATERIAL SAFETY DATA SHEET.**

For worldwide availability, additional product information and technical support, contact your local Five Star distributor, local sales representative, or you may call Five Star's Engineering and Technical Service Center at (800) 243-2206.

**WARRANTY:** "FIVE STAR PRODUCTS INC. (FSP) PRODUCTS ARE MANUFACTURED TO BE FREE OF MANUFACTURING DEFECTS AND TO MEET FSP'S CURRENT PUBLISHED PHYSICAL PROPERTIES WHEN APPLIED IN ACCORDANCE WITH FSP'S DIRECTIONS AND TESTED IN ACCORDANCE WITH ASTM AND FSP STANDARDS. HOWEVER, SHOULD THERE BE DEFECTS OF MANUFACTURING OF ANY KIND, THE SOLE RIGHT OF THE USER WILL BE TO RETURN ALL MATERIALS ALLEGED TO BE DEFECTIVE, FREIGHT PREPAID TO FSP, FOR REPLACEMENT. THERE ARE NO OTHER WARRANTIES BY FSP OF ANY NATURE WHATSOEVER, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IN CONNECTION WITH THIS PRODUCT. FSP SHALL NOT BE LIABLE FOR DAMAGES OF ANY SORT, INCLUDING PUNITIVE, ACTUAL, REMOTE, OR CONSEQUENTIAL DAMAGES, RESULTING FROM ANY CLAIMS OF BREACH OF CONTRACT, BREACH OF ANY WARRANTY, WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR FROM ANY OTHER CAUSE WHATSOEVER. FSP SHALL ALSO NOT BE RESPONSIBLE FOR USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT HELD BY OTHERS."

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