BASF

The Chemical Company

PRODUCT DATA

3 03 01 00 **Maintenance of Concrete**

CONCRESIVE® STANDARD LVI

Low-viscosity epoxy adhesive

Description

Concresive® Standard LVI is a two-component moisture-insensitive 100% solids low-viscosity epoxy adhesive. It penetrates cracks and voids, bonding hardened concrete to hardened concrete. It can be mixed with aggregate to make high-strength, high-modulus epoxy concrete and mortars.

Yield

One gallon yields 231 in^3 (0.001 m^3)

Packaging

3 gallon (11 L) units

15.2 oz (300 by 150 ml) biaxial cartridges, 12 per box; 1 mixing nozzle per cartridge

Color

Amber

Shelf Life

2 years when properly stored

Storage

Store in sealed containers at temperatures between 50 and 90° F (10 and 32° C).

Features	Benefits
• Rapid strength gain	Quickly returns repaired areas to service
• Creep resistant	Maintains structural integrity under load
• Low viscosity	Excellent penetration
• Moisture insensitive	Bonds to damp or dry concrete

Where to Use

APPLICATION

- As a high-strength binder for grouts and mortars
- Repairing of concrete slab or walls
- Injection of cracks from 0.002 – 0.25" (0.05 – 6 mm)
- Repairing of beams, columns, and foundations
- Anchoring bolts, dowels, and reinforcing bars
- Consolidating rock pockets or honeycombs

LOCATION

- Horizontal and vertical surfaces
- Interior or exterior

How to Apply

The following information on surface preparation, mixing, and application represents a brief overview. Refer to the Concresive® Standard LVI product packaging for more detailed instructions before using this product.

Surface Preparation

CONCRETE

1. Substrate may be dry or damp, although dry surfaces product optimum results. New concrete must be fully cured (28 day minimum).

2. Remove grease, wax, oil contaminants, and curing compounds by scrubbing with an industrial-grade detergent or a degreasing compound. Follow with mechanical cleaning (refer to ASTM D 4258).

3. Remove weak, contaminated, or deteriorated concrete by shotblasting, bushhammering, gritblasting, scarifying, or other suitable mechanical means. Follow mechanical cleaning with vacuum cleaning (refer to ASTM D 4259).

STEEL

1. Remove dirt, grease, and oil with a suitable industrial-grade cleaning-and-degreasing compound (refer to SSPC-SP-1).

2. Remove rust and mill scale by gritblasting. Blast steel to white metal. Follow gritblasting with vacuuming or oil-free dry-air blast (refer to SSPC-SP-10 and NACE-2).

Protection and Repair

Technical Data

Composition

Concresive® Standard LVI is a two-component 100% solids epoxy.

Compliances

- ASTM C 881, Type I, II, IV, V, Grade 1, Class C

Typical Properties

COMPONENT	PART A (Resin)	PART B (Hardener)
Form	Liquid	Liquid
Color	Amber	Amber
Mixing ratio (by volume)	2	1
Mixed color	Amber	

PROPERTY	VALUE
Pot life, min, 150 g mass	40
Viscosity, cps (mixed)	300 ± 50
Thin-film cure, days	2
Initial cure, hrs (80% of ultimate strength)	24

Test Data

PROPERTY	RESULTS	TEST METHODS
Tensile strength, psi (MPa)	7,500 (52)	ASTM D 638
Elongation at break, %	1 (minimum)	ASTM D 638
Compressive yield strength, psi (MPa)	11,000 (76)	ASTM D 695
Compressive modulus, psi (GPa)	2.5 x 10^5 (1.75)	ASTM D 695
Heat deflection temperature, ° F (° C)	124 (51)	ASTM D 648
Bond strength, slant shear, psi (MPa)		ASTM C 882
2 day	1,500 (10)	
7 day	2,000 (14)	

Test conditions: 77° F (25° C), cured 7 days. Test results are averages obtained under laboratory conditions. Expect reasonable variations.

Mixing

1. The mix ratio is 2 (Parts A) to 1 (Part B). Mix only the amount of material usable before the pot life expires. Thoroughly stir each component before mixing.

2. Measure (ratio) each component carefully and then add Part B (Hardener) to Part A (Resin).

3. Mix Parts A and B using a low-speed drill (600 rpm) and mixing paddle (e.g., 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 – 5 minutes. Well-mixed material will be free of streaks or lumps.

4. Concresive® Standard LVI can be poured into cracks or dispensed with most 2-to-1 plural component pumps.

Application

PRESSURE INJECTION OF CRACKS

1. Concresive® Standard LVI is formulated for mixing and application with automatic pressure-injection equipment. Follow the recommendations and directions supplied by the equipment manufacturer.

2. Seal the ports and cracks with an appropriate paste epoxy.

3. When the paste is cured, inject Concresive® Standard LVI using standard pressure-injection equipment or by gravity feed.

4. For injection with side-by-side dispenser, hold in an upright position and use continuous pressure to avoid an improper mixing ratio.

PATCHING MORTARS AND GROUTS

1. Use washed, kiln-dried, and bagged graded silica sand. 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 2 parts #12 or #16 mesh to 1 part #80 or #100 mesh. When graded sands are not available, a good general purpose sand is #30 mesh silica.

2. The maximum placement depth is 1" (25 mm).

BOLT AND REBAR GROUTING

1. Holes may be cut either by 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 will be precast into the concrete, cast them undersized and drill them to fit.

2. The optimum hole size is 1/4" (6 mm) larger than the bar's; larger annular spaces are less desirable.

3. Pour a measured amount of epoxy into the hole. Insert the bar, displacing the epoxy, then secure the bar in the center of the hole. Remove excess epoxy from around the hole before it hardens. Pressure grouting is recommended for grouting holes deeper than 2 ft (0.6 m).

GRAVITY-FEED CRACK FILLING

1. For cracks from 1/16 – 1/4" (1.5 – 6 mm), V-notch the crack and fill with 60 – 80 mesh sand.

2. Pour the mixed epoxy into the crack until completely filled.

3. When cracks extend through the slab, be certain to cap seal the back side of the crack.

Clean Up

Mixed epoxy is much easier to clean up before it hardens. Use solvents like acetone or methyl ethyl ketone (MEK). Use commercial epoxy or paint-stripper solvents for hardened epoxy. Consult solvent manufacturer's recommendations.

For Best Performance

- Application temperature range is 50 to 105° F (10 to 41° C).
- Do not add solvents or water to epoxy components.
- Neat epoxy binder should not be applied greater than 1/4" (6 mm). Consult with manufacturer for recommendation.
- Bonding to a clean, damp surface is possible but less desirable than bonding to a dry surface. When applying this product to a damp surface, remove free water by oil-free airblast.
- Precondition all components to 70° F for 24 hours before using.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

CONCRESIVE® STANDARD LVI PART A

WARNING

Contains epoxy resin, 1,4-butanediol ether, o-cresyl glycidyl ether.

Risks

May cause skin, eye and respiratory irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Ingestion may cause irritation.

Precautions

Use only with adequate ventilation. Avoid contact with skin, eyes and clothing. Keep container closed when not in use. Wash thoroughly after handling. DO NOT take internally. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

For additional information on personal protective equipment, first aid, and emergency procedures, refer to the product Material Safety Data Sheet (MSDS) on the job site or contact the company at the address or phone numbers given below.

Proposition 65

This product contains materials listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents when components are mixed and applied per Manufacturer's instructions.

CONCRESIVE® STANDARD LVI PART B

DANGER – CORROSIVE

Contains: 2,2,4-Trimethyl-1,6-hexnediamine; 2,4,4-Trimethyl-1,6-hexnediamine; 2,4,6-Tris((dimethylamine)methyl)phenol; Diethylenetriamine; o-Sec-butylphenol; Phenol; 1,2-Clyclohexanediamine.

Risks

Contact with skin or eyes may cause burns. Ingestion may cause irritation and burns of mouth, throat and stomach. Inhalation of vapors may cause irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Repeated or prolonged contact with skin may cause sensitization. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

DO NOT get in eyes, on skin or clothing. Wash thoroughly after handling. Keep container closed. DO NOT take internally. Use only with adequate ventilation. DO NOT breathe vapors. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

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Proposition 65

This product does not knowingly contain materials listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents when components are mixed and applied per Manufacture's instructions.

**For medical emergencies only,
call ChemTrec (1-800-424-9300).**

BASF Construction Chemicals, LLC – Building Systems

889 Valley Park Drive
Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517
Technical Service 800-243-6739

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