



# DURAL 452 LV

## LOW VISCOSITY, HIGH MODULUS EPOXY ADHESIVE

### DESCRIPTION

**DURAL 452 LV** is a two-component, 100% solids, moisture insensitive, high strength epoxy adhesive and binder for numerous applications. This high modulus, low viscosity epoxy resin is the perfect solution for general bonding applications and for injecting cracks in concrete and a variety of other substrates.

### PRIMARY APPLICATIONS

- Bonding of concrete, masonry or wood
- Injection resin for cracked, structural substrates
- Gravity feed cracks in concrete slabs
- Anchoring bolts, dowels, or pins
- Mix with dried silica sand to create a repair mortar

### FEATURES/BENEFITS

- Exceptional adhesion to construction materials
- Low viscosity penetrates deep into cracks
- Easy to use 2:1 mix ratio
- Moisture insensitive
- Impeccable bond strength

### TECHNICAL INFORMATION

The following information was obtained under laboratory conditions.

PROPERTY	RESULT
Mixed Viscosity, cp	350
Gel Time, minutes ASTM C 881	50
Tensile Strength, psi (MPa) ASTM D 638	7,950 (54.8)
Tensile Elongation, % ASTM D 638	1.5
Compressive Strength, psi (MPa) ASTM D 695	7 days: 12,065 (83.2)
Compressive Modulus, psi (MPa) ASTM C 695	7 days: 4.27 x 10 <sup>5</sup> (2,948)
Bond Strength, psi (MPa) ASTM C 882	2 days: 2,120 (14.6) 14 days: 2,250 (15.5)
Heat Deflection Temperature ASTM D 648	126°F (52°C)
Water Absorption @ 24 hours, % ASTM D 570	< 0.2
Appearance/Color	Amber/Clear

### PACKAGING

DURAL 452 LV is packaged in 3 gal (11.4 L) and 15 gal (56.8 L) units. The mix ratio is 2:1 by volume.

### SHELF LIFE

2 years in original, unopened containers

## SPECIFICATIONS/COMPLIANCES

DURAL 452 LV complies with ASTM C 881-10 Types I and IV, Grade 1, Class C  
Meets the requirements of AASHTO 235 and is USDA compliant

## COVERAGE/YIELD

For injection, one neat gal (3.8 L) yields 231 in<sup>3</sup> (.004 m<sup>3</sup>) of epoxy. One gal (3.8 L) of neat DURAL 452 LV epoxy mixed with 3 gal (11.4 L) of dry 20/40 mesh silica sand will yield approximately 643 in<sup>3</sup> (.011 m<sup>3</sup>) of mortar.

## DIRECTIONS FOR USE

**Surface Preparation: Concrete:** The surface must be structurally sound, dry, free of grease, oils, coatings, dust, curing compounds and other contaminants. Surface laitance must be removed. The preferred method of surface preparation is abrasive blasting or other mechanical means per ICRI Guideline 310.2. Oil contaminated surfaces should be degreased. Remove defective concrete down to sound material. Route cracks and blow dust and debris from them with oil-free, compressed air. Following surface preparation, the cleaned surface should pull concrete when tested with a pull tester, or an elcometer (ASTM D 4541). **Steel:** All oils, grease, dirt, old coatings and chemical contaminants must be removed. The surface should be blasted to a near white metal finish (SSPC SP10) using clean, dry aggregate.

**Mixing:** Premix Part A and B with a slow speed motor and “Jiffy” mixer. Pour two parts by volume of Part A and one part by volume of Part B into a clean, dry container and mechanically mix slowly for 3 to 5 minutes. Scrape the sides and bottom of mixing container while mixing. Do not whip or aerate while mixing. **Mortar:** Gradually add clean, dry 20/40 mesh silica sand to mixed epoxy. Blend thoroughly. The mix ratio of aggregate to binder is approximately 3:1 by volume, but may vary depending upon the desired consistency of the mortar.

**Application:** Application and surface temperatures should be at least 50°F (10°C) and rising. **Anchoring bolts, dowels, pins:** DURAL 452 LV can be used neat or with an aggregate to anchor horizontal bolts. The anchor bolt hole should be free of all debris before grouting. The optimum hole size is 1/8” (3.2 mm) annular space or 1/4” (6.4 mm) larger diameter than bar diameter. Depth of embedment is typically 10 to 15 times bolt diameter. **Vertical and overhead repairs:** Apply DURAL 452 LV neat as a prime coat to the prepared concrete surface. Mix the DURAL 452 LV into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1” to 1 1/2” (25 to 38 mm) prior to the primer coat becoming tack-free. Allow each lift to set before applying subsequent lifts. **Pressure grouting: Vertical cracks:** Attach injection ports and seal the face of the crack with Dural 452 Gel or Dural Fast Set Epoxy Gel. Allow the sealing gel to sufficiently harden before injecting. Pump DURAL 452 LV into the crack with two-component pressure injection equipment; starting at the bottom of the crack and working up. Work from port to port and cap off ports as you proceed up the crack to contain the DURAL 452 LV within the crack. DO NOT INJECT if water is leaking from the crack. Consult Euclid Chemical’s Technical Service Department regarding the use of the Dural Aqua-Dam products for leaking cracks. **Horizontal cracks:** Open cracks by mechanical means and ensure that the prepared crack is free of all debris and standing water. Pressure injection technique is the same as for vertical cracks. If gravity feeding, pump DURAL 452 LV until cracks are completely filled. If working on an elevated slab, ensure the bottom of the slab is sealed prior to injecting or gravity feeding the crack so the epoxy doesn’t leak through.

## CLEAN-UP

Clean tools and application equipment immediately after use with EUCO SOLVENT or acetone while still wet.

## PRECAUTIONS/LIMITATIONS

- Store at temperatures between 50°F to 90°F (10°C to 32°C)
- Do not thin
- Protect from moisture
- Surface and ambient temperatures must be 50°F (10°C) and rising at time of use
- In all cases, consult the Safety Data Sheet before use

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