EUCLID CHEMICAL

DURAL 452 LV-IN

Low viscosity, High Modulus, ,Moisture Insensitive Epoxy Injection Grout

Description

DURAL 452 LV - IN 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

- Injection resin for cracked, structural substrates
- Gravity feed or pressure inject cracks in concrete slabs
- Bonding of concrete, masonry or wood
- 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
- Moisture insensitive
- Impeccable bond strength

Technical Information

Material properties tested under laboratory conditions @ 27°C, 50% RH.

Properties	Value
Appearance	Amber color/clear
Mixed Viscosity	Approx. 200 CPS
Gel Time,ASTM C881	90 minutes
Tensile Strength,ASTM D638	7 days: 20 MPa
Tensile Elongation, ASTM D638	7 days: 1.5 %
Compressive Strength,ASTM D695	7 days: >85 MPa
Flexural stength,ASTM D695	7 days: 2,948 MPa
Bond Strength ASTM C882	2 days: 14.6 MPa 14 days: 15.5 MPa
Water Absorption @ 24 hours, ASTM D570	< 0.2 %
Appearance	Amber color/clear
Flash point	-34°C

Packaging

DURAL 452 LV- IN is packaged 5kg metal tin .

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Shelf Life

12 months in original, unopened containers

Specifications/Compliances

DURAL 452 LV- IN complies with ASTM C881 Types I and IV, Grade 1,
Class C Meets the requirements of AASHTO 235 and is USDA compliant

Coverage

For injection, 5 kgs yields 231 in (3,785 cm) of epoxy. 5kgs of neat DURAL 452 LV-IN epoxy mixed with 11.4 L of dry 20/40 mesh silica sand will yield approximately 643 in (10,537 cm) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

Directions For Use

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 1.7 MPa.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: The mix ratio is 3.5:1.5 by weight. Mix DURAL 452 LV-IN using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a given ratio by weight, then mix thoroughly for 3 to 5 minutes.

To make DURAL 452 LV-IN mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURAL 452 LV-IN epoxy and mix thoroughly for 3 to 5 minutes. The mix ratio of aggregate to mixed epoxy is approximately 3 to 1 by volume respectively, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Pressure injecting vertical cracks: Attach injection ports and seal the face of the crack with DURAL 452 GEL-IN. Allow the sealing gel to sufficiently harden before injecting, to prevent blowouts. Pump DURAL 452 LV-IN into the crack via the injection ports, using two-component pressure injection equipment. Start at the bottom of the crack and work upwards from port to port. Cap off ports as you proceed up the crack to ensure that DURAL 452 LV-IN is kept contained within the crack. DO NOT INJECT IF WATER IS LEAKING FROM THE CRACK.

Horizontal cracks: Open cracks by mechanical means and ensure that the prepared crack is free of all debris and standing water. If pressure injecting, instructions are the same as for vertical cracks. If gravity feeding, pump DURAL 452 LV-IN 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, to ensure epoxy does not leak through.

Anchoring bolts, dowels, pins: DURAL 452 LV-IN can be used neat or as a mortar to grout vertically-aligned anchors (into a horizontal substrate). The anchor hole should be free of all debris before grouting. The optimum hole size is (1.6mm) annular space (3.2mm) larger diameter than anchor diameter). Depth of embedment is typically 10 to 15 times anchor diameter.

Patching and repairs: Apply DURAL 452 LV neat as a primer 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 125 to 38 mm before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

SHELF LIFE

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 452 LV-IN will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 452 LV-IN indoors, protected from moisture, at temperatures between 10^0C and 32^0C.
- Surface and ambient temperature during applications should be between 10^0C and 32^0C.
- Material temperatures should be at least 10^0C and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases Do not dilute DURAL 452 LV-IN
- DURAL 452 LV-IN will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURAL 452 LV-IN is not to be used as a finished/aesthetic coating
- Do not use DURAL 452 LV-IN for horizontally-aligned anchors (into a vertical substrate)
- Do not use DURAL 452 LV- IN for overhead anchoring
- Maximum application thickness of DURAL 452 LV-IN mortar is 1.5" per lift. Mortar is for interior use only. In all cases, refer the product Safety Data Sheet before use

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