



EUCLID CHEMICAL

# DURAL 618LV

Ultra-Low Viscosity, Moisture Insensitive, High Modulus  
Structural Adhesive and Injection Resin

## DESCRIPTION

**DURAL 618LV** is a two component, solvent free structural epoxy liquid injection adhesive used for deep penetration into hairline cracks, sealing and restoring the structural integrity of concrete. Material is pressure-injected or gravity-fed into fine cracks or can be mixed with Graded Aggregate # 622 for making a patching mortar to fill up to 6mm wide cracks.

**Specification:** Dural 618LV meets ASTM C881 Types I and IV, Grade 1, Class B and C.

## PRIMARY APPLICATIONS

- Pressure injection cracks in structural concrete, masonry, and wood
- Seal concrete slabs from water and chlorides
- Installation of bolts, anchors, dowels, and starter bars
- Sealing pipes, tunnels, cable vaults, tanks, and basements.
- Anti-dusting and case hardening concrete surface dressing
- Binder for epoxy patching mortar on horizontal surfaces

## FEATURES/BENEFITS

- Versatile applications (injection, installation & sealing)
- Moisture insensitive
- Solvent free and low VOC
- Locally manufactured under strict quality control standards
- Pre-packed correct ratio material (reduces site mixing errors)
- Injects easily into fine cracks

## TECHNICAL INFORMATION

Material properties tested under laboratory conditions @ 25°C, 50% RH

Property	Test Method	Values at 25° C
Components	-	Two (Base & Hardener)
Colour	-	Clear Amber
Consistency	-	Thin Liquid
Volume Solids	-	100 %
Mix Ratio by Volume	-	2 : 1
Pot Life	-	40 to 60 Minutes
Apply Over	-	Dust, dirt and water-free cracks
Apply By	-	Gravity Pour / Pressure Injection
Initial Set	-	12 hours at 25°C, 20 hours at 4°C
Service	-	24 hours
Full Cure	-	3 Days
Application Temperature	-	4°C to 35°C
Maximum Service Temperature	-	> 50°C

Compressive Strength	ASTM C579	24 hours	> 60 MPa
		3 Days	> 73 MPa
Concrete Bond Strength	ASTM D4541	Substrate Failure	
12mm Rebar Pull Out Depth 126mm	-	Bar failure at 50KN	
16mm Rebar Pull Out Depth 160mm	-	Bar failure at 92.6KN	
20mm Rebar Pull Out Depth 200mm	-	Bar failure at 140KN	
Shelf Life	-	24 Months if stored between 15°C to 30°C	
VOC	-	4 g/l	

Values presented are typical and not necessarily referenced to create specifications.

## PACKAGING

1 Litre kit Part A and B.

**Coverage:** 50 Linear meters/ litre, 20mm deep, 1mm wide.

## SHELF LIFE

24 Months if stored between 15°C to 30°C

## DIRECTIONS FOR USE

### For Crack Injection:

Introduction:

This specification covers the surface sealing and injection of cracks in concrete structures using DURAL 617NS and DURAL 618LV.

### METHOD A (By pressure injection) – VERTICAL WALLS:

#### NIPPLE SETTING AND SURFACE SEALING:

- The crack must be inspected to ensure that it is clean and free of standing water.
- Prepare a section of the concrete on either side of this crack by mechanical grinding or lightly sandblasting.
- Using a masonry drill, drill a hole  $\pm 8$ mm in diameter into the crack to a depth of  $\pm 20$ mm. Once hole is drilled, ensure that the crack can be seen at the bottom of the hole. This is important as quite often the crack does not go straight back from the surface into the body of the concrete. One further point to remember is that all remaining dust from the drilling must be removed from the holes.
- The spacing of the holes will depend on the width of the crack with the following parameters being used as a guide:
  - a) Cracks up to 250 microns  $\pm 150$ mm centres
  - b) Cracks bigger than 250 microns  $\pm 250$ mm centres
- Once all the holes are drilled, the setting of the nipples and surface sealing of the cracks can proceed.
- A 6mm x 25mm standard grease nipple is used, and this is set into position with DURAL 617NS. Care must be taken to ensure that the DURAL 617 NS does not restrict the resin path during the setting process.
- The balance of the crack between the injection points must then be surface sealed in a band  $\pm 80$ mm wide with the DURAL 617NS being applied 2mm thick directly over the crack. The DURAL 617NS must be allowed to set before proceeding.

## **PRESSURE INJECTION:**

- The resin used for the injection process is DURAL 618LV. The material is supplied in two attached containers which are separated by prising off the upper tin. The contents of the smaller container must be poured into the larger container and mixed together for 3 minutes.
- Once thoroughly mixed, the injection can proceed starting from the lowest point and working upwards.
- The DURAL 618LV can be injected with a pressure gun or hand-operated grease gun. Injection should proceed slowly and nipples above the injection point should be vented with a straight pin (dressmaker's type) to check resin flow.
- As soon as the resin is seen to exit the next higher nipple, the injection must move to this point. The process should continue until the resin has spread along the length of the crack. It is normally a good practice to return to the lowest point and repeat the operation again to ensure that the crack is completely filled and all air displaced.
- On completion of the injection process, the DURAL 618LV must be allowed to cure for  $\pm$  24 hours before removing the nipples and grinding the DURAL 617NS flush with the concrete. Should it be necessary, the concrete can be touched up with DURAL 617NS.

## **METHOD B (By gravity feed) – SURFACE BEDS:**

### **CRACK PREPARATION:**

- Remove loose particles of concrete and vacuum clean. Ensure that the crack is clean, sound and dry.
- Form temporary berm on either side of the crack with a bead of silicone or quick setting cement grout. Allow sealant or grout to set.

### **GRAVITY INJECTION:**

- Mix the DURAL 618LV as detailed above and then transfer into suitable pouring container.
- Slowly feed the liquid resin into the crack over the entire length and continue the process until the crack is filled.
- Allow the resin to penetrate and settle for  $\pm$  1 hour and then top up the crack until the material is flush with the adjacent concrete surface.
- Allow the resin to cure for  $\pm$  24 hours before removing temporary surface berms and lightly sanding or grinding the concrete to remove surface stains, etc.

**General:** The exact method of surface sealing will differ from application to application. However, suspended slabs are normally injected from the soffit with the top of the crack left open. Beams, columns and diaphragm walls should be sealed on all faces with nipples on one face only. Once again this can vary and will depend on the size of crack, etc. Injection work has been done on retaining walls with backfill earth in position. The problem with this application is that the DURAL 618LV tends to drain into the soil. This problem can be overcome by using DURAL 617NS.

## **CLEAN-UP**

Clean equipment immediately after use with suitable Cleaner and rinse with clean water.

## **PRECAUTIONS / LIMITATIONS**

Use materials in strict accordance with the manufacturer's Material Safety Data Sheet.

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