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# ARDEX RA 146

## Blindside Concrete Crack Injection Epoxy Gel

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Structural crack repair of medium to large cracks

Pressure injected blind-side crack repairs such as basement or foundation walls or parking garages

Pressure injection for cracks from 6mm to 10mm

100% solids, solvent free system with low VOC content.

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# ARDEX RA 146

## Blindside Concrete Crack Injection Epoxy

### DESCRIPTION

ARDEX RA 146 is a thixotropic structural epoxy adhesive system with a gel-like consistency ideal for repair of medium to large cracks (6 - 10mm) when using an injection port system. A thixotropic gel is multi-viscous and flows like a liquid while under pressure and will cease flowing when no pressure is being applied. It is a high strength epoxy system perfect for blind-side crack repair of most substrates. It will bond the structure back to its original monolithic strength. ARDEX RA 146 can be used to repair vertical cracks when using injection ports in conjunction with a capping paste (ARDEX RA 88). Its bonding and sealing capabilities for interior and exterior slabs are exceptional.

### INSTRUCTIONS

Always be sure the bonding surfaces are prepared in advance before starting a new cartridge or mixing product. If possible, schedule dispensing to consume an entire cartridge at one time with no interruption of the flow.

### SURFACE PREPARATION

Old concrete must be clean, profiled or textured. New concrete must be a minimum of 28 days old. Before using ARDEX RA 142, make sure that the surfaces to be bonded are sound and clean so there is no dust, dirt, grease, wax, oil, or any other contaminant present. Smooth surfaces should be mechanically roughened with a wire brush or sand paper before application.

### CARTRIDGE SET-UP

Whilst preparing cartridge, keep in an upright position to prevent material from leaking from cartridge.

1. Place cartridge into dispenser and lock in place. If using a pneumatic dispenser, connect to regulated air source limiting air pressure to 240 kPa (35 psi).
2. Remove plastic cap and plugs from the cartridge.
3. Prior to attaching mixer nozzle, dispense a small amount of adhesive into a disposable container until you get both A and B materials to flow from the cartridge. Before attaching nozzle, insert flow control into top of cartridge with tab facing out.
4. Attach mixing nozzle to cartridge. Dispense adhesive into a disposable container until a uniform solid mix is achieved without any streaks. For crack-injection procedures, please follow the detailed instruction sheet included with product.

### BONDING AGENT APPLICATIONS

**For bonding fresh concrete to hardened concrete or when repairing concrete spalls use as a bonding agent:** Use a brush, roller or airless sprayer, apply an

even coat of the mixed ARDEX RA 146 to the clean and prepared concrete surface. While the epoxy is still tacky, place fresh concrete over the top of the mixed epoxy.

**For bonding hardened concrete to hardened concrete:** Use a brush, roller or airless sprayer, apply an even coat of the mixed ARDEX RA 146 to the clean and prepared concrete surface. Make sure to fill all gaps between the two concrete surfaces.

### NON-STRUCTURAL, COSMETIC OR SURFACE REPAIR FOR HORIZONTAL APPLICATIONS

ARDEX RA 146 is formulated to repair medium to large cracks: (6 – 10mm). For best results, cut a groove to open up the crack using an abrasive or diamond blade to form a clean, straight edge. Use a wire brush to abrade and then blow out the crack to remove all dust, dirt, grease, wax, oil or any other contaminants. Dispense ARDEX RA 146 through a nozzle into the crack and trowel smooth to fill the entire area. Repeat application if necessary to completely fill the crack. Note: For hairline to medium cracks use other lower viscosity products (ARDEX RA 142 or ARDEX RA 144).

### PRESSURE INJECTION SYSTEM FOR VERTICAL CRACKS

Before repairs are attempted, the crack should be analysed to determine the type of repair that is required. Cracks in concrete and wood members are classified as either active (moving) or dormant. Dormant cracks may occur with one-time overload events such as earthquakes or floods. For dormant cracks in a structure that is to be rehabilitated, structural crack injection is recommended. By contrast, active cracks are caused by inadequate design, seasonal heaving, temperature swings or repeated over-loading.

### Preparation

Clean the surface immediately surrounding the crack with a wire brush to achieve a proper bond. Remove all dust, debris, oil and any other contaminants from the crack by blowing out with clean, oil-free compressed air. For best results crack must be dry at the time of injection. If water is seeping from crack, steps must be taken to stop the flow in order to achieve the desired repair.

ARDEX RA 88 is ideal to be used as capping paste for the crack injection procedure. Place and secure injection ports with ARDEX RA 88, taking care not to leave any pin-holes. Port spacing should be approximately 15 – 30cm apart (typically the width of the concrete member). Do not allow the epoxy to block the passage between the port and the crack face. Place additional ARDEX RA 88 between the ports making sure the entire face of the crack is sealed off and ports are securely fastened to the concrete. If the crack is evident and

accessible on the back side of the concrete member, seal with capping paste. See ARDEX RA 88 for cartridge set-up.

### **Injection**

1. Attach the tube assembly to the barbed end of nozzle.
2. Attach other end of tubing to the bottom injection port. Inject epoxy into port until there is flow from adjacent port or until epoxy stops flowing. Plug the port injecting into and attach tubing to adjacent port. Continue procedure until complete.
3. Leave the tubing attached to the last port on each crack for 30 seconds under pressure to assure crack is completely filled.
4. Allow Injection resin to cure (at least 24 hours). Ports and capping material can be removed with a chisel and/or grinder.

Note: Some cracks may take more time to inject. Cracks may be smaller in width (or larger) than they appear from the surface.

### **Dispensing and Injection Tips**

#### **Pneumatic Dispenser:**

Must be used with an air pressure regulator. Start at a low setting and gradually increase pressure as needed until desired epoxy flow. Use maximum 275 kPa (40 psi) air pressure. Excessive pressure may result in cartridge plunger leakage.

Do not dispense epoxy through gelled mixer nozzle. If epoxy gels in nozzle, replace nozzle before continuing.

### **CURING**

ARDEX RA 146 is fully cured in 24 hours. After such time, ports and capping material can be removed with a chisel and/or grinder.

### **APPLICATION TEMPERATURE**

Substrate and ambient air temperature should be between 10°C and 35°C. When the work environment or substrate falls below 21°C, condition the product to 21°C – 24°C prior to use. Cold product will react (cure) slower and product that is too warm will react (cure) much faster than normal.

### **CLEAN UP**

Clean tools and equipment with white spirits, mineral turps or aerosol dewatering agent or lubricant. Do not allow epoxy to harden on equipment.

### **COVERAGE**

Please refer to the calculator on the ARDEX website. [www.ardexaustralia.com](http://www.ardexaustralia.com)

### **PACKAGING**

ARDEX RA 146 is sold in a 470mL dual cartridge.

### **SHELF LIFE**

RA 142 has a shelf life of 24 months when stored in the original unopened packaging in a dry place between 13°C and 27°C and 50% relative humidity. If recapped and stored properly, product may be reused.

### **PLEASE PAY ATTENTION TO THE FOLLOWING**

Do not thin with solvents, as this will prevent cure. Not intended for repairing cracks subject with movement. Repairs should be made to the cracked member to eliminate the cause of the cracking prior to repair. It is not designed to stop seeping or flowing water. It may be applied in moist or damp environments as long as standing water is removed.

### **SAFETY PRECAUTION**

This product is considered hazardous. Avoid contact with skin and eyes. Wear suitable gloves and eye/face protection. Avoid exposure - obtain special instructions before use. Do not empty into drains. This material and its container must be disposed of in a safe way. Harmful in contact with skin and if swallowed. Causes burns. Risk of serious damage to eyes. SENSITISATION by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Store as per Material Safety Data Sheet. In case of accident or if you feel unwell, IMMEDIATELY contact Doctor or Poisons Information Centre. Refer to special instructions / safety data sheet.

### **FIRST AID**

If swallowed, drink plenty of water in small portions, do not induce vomiting and seek medical advice. In case of eye contact, rinse with plenty of clean water for at least 15 minutes and seek medical advice. If skin contact occurs, wipe off and wash skin with running water and soap. In case of inhalation, supply fresh air. In case of any symptoms, see a doctor.

**TECHNICAL DATA**

<b>Colour:</b>	Concrete Grey
<b>Consistency:</b>	Medium Viscosity Thixotropic Gel
<b>Viscosity:</b>	4500 cps
<b>Gel Time (+24°C):</b>	20 minutes
<b>Compressive Strength 7 days:</b>	62 MPa
<b>Shear Bond Strength 2 days:</b>	8 MPa
<b>Tensile Strength 7 days:</b>	34 MPa
<b>Water Absorption 24 hours:</b>	0.26%

**DISCLAIMER**

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable Australian Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

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