

RepairPro Inject UR

Two-Component | Solvent-Free | Flexible | Low-Viscosity Polyurethane Crack Injection Resin

Two-component, solvent-free, low-viscosity polyurethane injection for the elastic sealing of cracks in concrete structures as well as areas suffering from water-leakage problems for crack widths between 0.2 mm and 10 mm



PRODUCT DESCRIPTION

RepairPro Inject UR is a two-component, solvent-free, low-viscosity polyurethane injection system for the elastic sealing of cracks in concrete structures as well as areas suffering from water-leakage problems.

It consists of a resin component and a special MDI-based isocyanate, can be injected with a one-component pump and is a long pot-life system. In dry cracks it is injected directly; where significant water leakage must be stopped it is used in combination with RepairPro Inject WS. It is designed for crack widths between 0.2 mm and 10 mm.

WHERE TO USE

Typical Applications

RepairPro Inject UR is used to form a durable elastic seal in cracks subject to water and movement:

- Injecting cracks in concrete, stone and masonry, either wet or dry, interior and exterior, to form an elastic seal.
- New structures and repair purposes.
- Permanent crack sealing and stopping of minor water seepage below-ground structures such as tunnels, shafts, basements, underpasses, columns, beams, bridge decks, floors and piers.
- Sealing live, dynamic cracks in concrete and masonry from 0.2 mm to 10 mm.

Suitable Substrates

- Concrete, stone and masonry — clean, solid and free from oils, grease, residual paint and surface treatments.
- Surface prepared by high-pressure water jetting or light abrasive blasting, followed by thorough washing to remove dust.
- Sides of cracks may be damp (except for gravity feed) but must be clean before injection.
- In the presence of running water, flow must first be stopped using **RepairPro Inject WS**.



PRODUCT HIGHLIGHTS / BENEFITS

Low Viscosity | Deep Penetration

Low viscosity guarantees excellent penetration into fine fissures and durable bond to substrates.

Flexible | Elastic Seal

Flexible to withstand differential movement and allows some movement within the crack without loss of bond.

Wet or Dry | Good Adhesion

Good adhesion to dry or moist substrate, suitable for both new structures & repair.

High Hydrostatic Resistance

Tough enough to stand up to high hydrostatic pressures and cures to an impermeable mass.

Solvent-Free

Solvent-free — can generally be used in confined spaces without ventilation.

Chemical Resistant

Excellent resistance to sea water, brackish water, effluent & raw sewage, dilute acids, alkalis & mineral / organic oils.

APPLICATION GUIDELINES

Application of low-viscosity injection resins is a skilled operation requiring trained operatives. The general recommended guidelines are as follows:

Substrate Preparation & Packer Fixing

- Ensure the substrate is clean, solid and dry. Clean cracks to remove dust using vacuum / compressed air.
- Fix injection packers into pre-drilled holes at 45° to the surface, 5–10 cm from crack line; spacing not exceeding half the slab / wall thickness or 60 cm. Spacing shall be close enough to ensure that resin will penetrate along the crack to the next point of injection.
- For cracks that pass right through a wall or slab, seal both sides. Fit packers on both faces, placing the rear packers midway between the front ones.
- For surface-mounted nipples, space them 15–50 cm apart along the crack, depending on the crack and element size.
- Seal cracks and nipple sides with **RepairPro EP FC** (dry cracks) or **AnchorPro PE SF** (damp surfaces), 30–40 mm wide and 2–3 mm thick to prevent leakage under injection pressure. Insufficient paste-over will result in leaks under the pressure of injection.

Product Mixing

- Pour component B into component A with a low-speed heavy-duty drill, avoiding air bubbles, until fully homogeneous.
- Do not use partial quantities as this may lead to incomplete hardening.
- Designed for application with 2-component injection machines where mixing happens within the nozzle.

Product Application

- Inject **RepairPro Inject UR** immediately after preparation with suitable automated or manual injection equipment, with steady pressure of at least 0.4 N/mm² (4 bar).
- Start from the lowest tube on vertical cracks or either end of horizontal cracks; inject until resin overflows from the next tube, then close the lower tube and continue.
- At +25°C use within 70 minutes of preparation. After 24 hours, check the cracks, remove packers and make good holes with **RepairPro EP FC**.

CURING

Gel time is approximately 22 minutes at +23°C and 50% R.H. (ASTM D2471). Full mechanical performance develops over 7 days. The product should not be exposed to moving water prior to initial set.

CLEANING

Clean tools, equipment and mixers with solvent immediately after use. The pump may be cleaned with Ecosolve, a cleaning product specially designed for injection pumps. Hardened material can only be removed mechanically.

RECOMMENDATIONS

- Only full units shall be mixed by mechanical means with a slow-speed drill and spiral paddle.
- Do not apply on wet surfaces with standing water, or on dusty, crumbly or weak substrates.
- Do not use **RepairPro Inject UR** for sealing expansion joints.
- Not an aesthetic product; colour may alter due to lighting and / or UV exposure.
- Mix only sufficient material that can be applied with the available labour and equipment.

STORAGE

6 months from manufacturing date in original, unopened packaging, under cover, in dry conditions away from humidity, heat and moisture, protected from extreme temperatures, rainfall and direct sunlight. These materials are temperature and moisture sensitive and should be stored at 10°C–30°C. All partially used drums should be covered with nitrogen and re-sealed to prevent the ingress of moisture.

HEALTH & SAFETY

As with all construction chemical products, caution should always be exercised. Protective clothing such as gloves, goggles and a mask should be worn. Treat any splashes to the skin or eyes with fresh water immediately. Should any of the product be accidentally swallowed, do not induce vomiting, but call for medical assistance immediately. For further information, refer to the appropriate Product Material Safety Data Sheet.

TECHNICAL CHARACTERISTICS

PRODUCT IDENTITY

DATA	TEST METHOD	RESULT
Appearance	—	Flowing liquids — Part A clear yellowish, Part B brownish
Mix Ratio	—	1 : 1 by volume
Mix Viscosity	—	< 100 cPs
Specific Gravity	ASTM D1475-98	1.1 g/cm ³ @ 25°C
Packaging	—	1 litre and 20 litre units (pre-weighed)
Flash Point	—	> 80°C
VOC Content	—	0 g/litre

APPLICATION DATA

DATA	TEST METHOD	RESULT
Pot Life / Working Time	—	2 hours @ 25°C
Gel Time @ 23°C & 50% R.H.	ASTM D2471	22 minutes
Crack Width Range	—	0.2 mm to 10 mm
Application Temperature	—	-20°C to +45°C
Service Temperature	—	-20°C to +60°C
Odour	—	Minimal, non-offensive
Coverage / Yield	—	Depends on width and depth of crack; estimated once dimensions are determined

TEST DATA

DATA	TEST METHOD	RESULT
Tensile Strength	ASTM D412	> 6 N/mm ² (7 days)
Elongation	ASTM D412	132%
Shore A Hardness	—	40–60
Chemical Resistance	—	Sea water, brackish water, effluent and raw sewage, acids of low concentration, alkalis and oils (mineral and organic), fully cured state

* All values given are subject to 5-10% tolerance.

* At +23°C and 50% relative humidity. Higher temperatures reduce, lower temperatures increase the times given.

* Properties listed above are based on controlled laboratory samples and tests. Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

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