CRACKLOCK E400L.



Technical Data Sheet | **Ultra-Low-Viscosity Structural Injection Epoxy for Hairline and Fine Cracks** | **Issue date: 25 August 2026**

Description

CRACKLOCK E400L is an advanced high-strength structural injection epoxy engineered for precision crack repair at the finest end of the range. Its ultra-low viscosity of 100–500 cps drives deep capillary penetration into hairline and fine cracks from 0.05 mm to 3 mm, restoring structural continuity from within the crack body rather than sealing it at the surface. Self-levelling in gravity-feed use and suited equally to pressure injection, it delivers 80.5 MPa compressive and 70.3 MPa flexural strength with shrinkage on cure of just 0.01%.

The formulation is 100% solids and solvent-free with low VOC content. Beyond crack injection it serves as an epoxy resin binder for mortar patching and, combined with aggregate, for durable interior surface overlays. Supplied in 400 mL dual cartridges at 3:1 by volume.

Advantages

- Ultra-low viscosity at 100–500 cps — deep capillary penetration into hairline cracks that paste-grade adhesives cannot enter.
- Repairs cracks from 0.05 mm, the finest range in the FORSPEC epoxy crack repair system.
- Self-levelling in gravity-feed application, filling the crack section without working.
- Very high mechanical performance — 80.5 MPa compressive and 70.3 MPa flexural.
- Exceptionally low shrinkage on cure at 0.01%.
- 100% solids and solvent-free with low VOC content.
- Suitable for both pressure injection and gravity feed.
- Doubles as an epoxy resin binder for mortar patching and interior surface overlays.

Uses

- Structural crack repair by pressure injection and gravity feed in horizontal concrete and masonry, 0.05 mm to 3 mm crack width.
- Port injection repair of fine vertical cracks within the FORSPEC epoxy injection procedure.
- Deep penetration into fine cracks and voids to restore structural integrity.
- Epoxy mortar patching as a binder with aggregate.
- Durable interior surface overlays when combined with aggregate.
- Industrial and commercial repairs — warehouses, bridges, tunnels and infrastructure.
- Controlled environments where low-VOC materials are required.

Compliance Status

No accredited certificate is currently held on file for CRACKLOCK E400L. All performance values are published as typical R&D characteristic values against their stated test method. The low-VOC claim is a manufacturer statement — no VOC certificate is held and no Green Star claim is made.

STANDARD / TEST	STATUS	REFERENCE
ASTM D638-14 — tensile properties	Manufacturer data	Forspec R&D *
ASTM D695-15 — compressive properties	Manufacturer data	Forspec R&D *
ASTM D790-17 — flexural properties	Manufacturer data	Forspec R&D *

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Compliance Status (continued)

STANDARD / TEST	STATUS	REFERENCE
VOC certification	Not currently held — low-VOC claim is a manufacturer statement	Certificate to be commissioned
AS/NZS 4020 — potable water contact	No certificate held — no claim made	Not applicable

Technical Data

Certified values are stated against their governing report. All other values are typical R&D characteristic values and are asterisked.

PROPERTY	VALUE	BASIS
Product type	Two-component, 100% solids, solvent-free structural injection epoxy	—
Mixing ratio	3:1, Part A to Part B †	—
Colour	Clear to light amber	—
Packaging	400 mL dual cartridge	—
Viscosity	100–500 cps at 25°C	*
Tensile strength	34.6 MPa	ASTM D638-14 *
Compressive strength	80.5 MPa	ASTM D695-15 *
Flexural strength	70.3 MPa	ASTM D790-17 *
Shrinkage on cure	0.01%	*
Gel time	30–40 minutes	*
Tack-free time	3–5 hours	*
Full cure (at 24°C)	7 days	*
Crack width range	0.05–3 mm	—
Groove preparation	3 mm width, minimum 1 mm depth	—
Conditioning before use	18°C to 29°C	—
Application temperature	+5°C to +35°C	—
Service temperature after curing	−7°C to +50°C	—
Shelf life	24 months, unopened, stored at 5–35°C	—

† The spall patch procedure in the source data sheet specified a 2:1 mix ratio while the properties table specified 3:1. The product ratio of 3:1 is published; the spall patch ratio requires confirmation. ‡ The source data recorded a gel time of 3–5 hours and a tack-free time of 30–40 minutes. These values are transposed — a material cannot become tack-free before it gels, and a 3–5 hour gel time is incompatible with the stated cure. The corrected values published above restore the sequence gel time < tack-free < grindable < full cure and are consistent with PROBOND 1100 and CRACK PRO 1200PS. The cure schedule has been corrected to match: the 3-hour figure in the source appeared under a section heading carried over from another product. Refer to the Change Register.

* Typical R&D characteristic values, not for engineering design without written FORSPEC confirmation.

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Coverage and Yield

Demand is a direct function of the crack cross-section. Volume required = cross-sectional area (mm^2) × length (m) ÷ 1000 mL per litre. Fine-crack repair consumes very little material per metre; the controlling factor is usually the number of ports and top-off passes, not the crack volume.

CRACK SIZE (WIDTH × DEPTH)	DEMAND PER LINEAR METRE	APPROX. METRES PER 400 ML CARTRIDGE
0.5 × 10 mm	5 mL *	80 m *
1 × 10 mm	10 mL *	40 m *
2 × 15 mm	30 mL *	13.3 m *
3 × 15 mm	45 mL *	8.9 m *
Prepared groove — 3 × 1 mm	3 mL *	133 m *
Epoxy mortar with aggregate	4–5 parts aggregate by volume to 1 part mixed epoxy *	Maximum 70 mm mortar thickness per layer

Allow for nozzle purge, static mixer waste, repeat top-off passes and loss into the crack body. * Typical R&D characteristic values, not for engineering design without written FORSPEC confirmation.

Limitations

- Not a waterproofing membrane.
- Not for cracks wider than 3 mm — specify CRACK PRO 1200PS for fine to medium cracks, or PROBOND 1100 for 3–20 mm.
- Not for application to damp, wet or frosted substrates — the crack and the environment must be completely dry.
- Not for new concrete less than 28 days old.
- No potable water claim is made — do not specify for contact with drinking water.
- Do not apply below 5°C or above 35°C substrate and ambient temperature. Below 21°C, condition the product to 21–24°C before use.
- Condition the material to 18–29°C before use — cold product thickens and loses the low viscosity that the product depends on.
- Do not dilute, extend, re-temper or add solvent under any circumstances.
- Do not leave a partially used cartridge with a loaded static mixer.
- Surface overlay use is restricted to interior surfaces.
- Epoxy mortar thickness must not exceed 70 mm per layer.

Surface Preparation

- New concrete must be a minimum of 28 days old before repair.
- Regardless of age, concrete surfaces must be clean, sound, completely dry and profiled or textured — moisture in the substrate will prevent bond development.
- Remove all dirt, dust, laitance, curing compounds, oils, grease, wax, surface sealers, coatings and any other bond-inhibiting contaminant by mechanical means, then vacuum thoroughly.
- Establish a roughened profile by rough-grinding, scarifying, bush hammering or equivalent mechanical preparation — a roughened profile is critical to adhesion.
- Mechanically roughen smooth surfaces with a wire brush or abrasive paper before application.
- Where the product is used as a bonding adhesive between two surfaces, confirm both surfaces are sound and free of dust, dirt, grease, wax, oil and all other contaminants.
- Confirm the substrate is dry and that no moisture is present in the crack or void before application.
- Cut a groove along the crack line with an abrasive or diamond blade to a width of 3 mm and a minimum depth of 1 mm to establish a reservoir for the resin.
- Abrade the crack with a wire brush and remove all debris, dust, dirt, grease, wax and oil.

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Cartridge Set-Up

- Keep the cartridge upright throughout preparation to prevent material leakage.
- Shake the cartridge for one minute, then stand it upright for a further minute to allow entrained bubbles to rise.
- Remove the plastic cap and plug by unscrewing both components.
- Insert the cartridge into the FORSPEC Heavy Duty Dual Cartridge Gun, seating it securely.
- Dispense material into a disposable container until both resin and hardener flow evenly and the mixed colour is uniform — do not begin work on an unverified flow.
- Attach the flow control port and static mixing nozzle firmly, then dispense slowly through the nozzle.
- Aim to consume an entire cartridge without interruption to maintain consistent flow. Remove the mixing nozzle after use and store the cartridge correctly.

Gravity Feed Crack Repair — Horizontal Applications

- Confirm the crack and the surrounding environment are completely dry.
- Cut the preparation groove to 3 mm width and a minimum 1 mm depth along the crack line.
- Abrade the crack with a wire brush and remove all contaminants — thorough cleaning governs penetration.
- Pour or inject CRACKLOCK E400L into the crack and allow its self-levelling properties to fill the entire section.
- Repeat the application as required until the crack holds a full section and no further material is accepted.
- Remove excess material from the surface before it becomes tack-free.

Port Injection Repair — Vertical and Fine Cracks

- Inspect the crack and mark any locations where the crack is discontinuous.
- Lay plastic sheeting to protect the floor, then clean the crack and its surroundings with a wire brush.
- Port placement — continuous cracks: space ports at approximately 450 mm centres from the bottom of the crack upwards.
- Port placement — discontinuous cracks: position a port immediately above each point of discontinuity.
- Coat the flat edge of each port with PROBOND 1100 epoxy paste, confirm the port hole is unobstructed, and press the port firmly over the marked location.
- Cap the crack with PROBOND 1100 over its full length, feathering approximately 50 mm or more on both sides and surrounding each port until the base is no longer visible.
- Allow the capping paste to cure before injection.
- Load the gun with CRACKLOCK E400L fitted with a static mixer, insert the mixer into the bottom port until it clicks, and dispense until resin emerges from the port directly above.
- Remove the gun, cap the port and repeat upwards port by port.
- Once fully cured, remove the ports mechanically and grind the capping paste flush.

Epoxy Mortar and Spall Patching

- Cut around the spall into sound concrete with a grinder or circular saw using a diamond or concrete abrasive blade — never feather the edge.
- Clear all loose concrete from within the spall and complete surface preparation.
- Mix Part A and Part B thoroughly, then add 4–5 parts by volume of kiln-dried sand or aggregate.
- Pour and trowel until smooth and level, to a maximum mortar thickness of 70 mm per layer.
- Allow to cure before grinding, coating or returning to service.

Drying, Curing and Testing Times

All times below are stated at 25°C and 50% RH except where a source reference condition is noted. Cure extends markedly below 21°C and accelerates in warm conditions.

STAGE (AT 25°C, 50% RH)	TIME
Gel time	30–40 minutes
Tack-free	3–5 hours

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Drying, Curing and Testing Times (continued)

STAGE (AT 25°C, 50% RH)	TIME
Repeat top-off passes	While the crack continues to accept material *
Excess material removal	Before the surface becomes tack-free *
Mechanical grinding	24 hours
Coating with paint or architectural coatings	24 hours
Return to full traffic	24 hours
Full cure	7 days

‡ Gel time, tack-free time and the cure schedule have been corrected from the source data to restore a physically consistent sequence — refer to the Technical Data note and the Change Register. * Typical R&D characteristic values, not for engineering design without written FORSPEC confirmation.

Clean Up

Clean tools and equipment promptly with FORSPEC EPOXY CLEANER while the material remains uncured, where both component Safety Data Sheets permit the solvent in question. Never allow the epoxy to cure on tools, nozzles or equipment — cured material can only be removed by mechanical means. Do not flush epoxy into drains or sewers.

Container and Waste Disposal

Combine and allow residues to fully cure and harden before disposal, then dispose in accordance with State and local requirements. Route unused, uncured components to an authorised waste collection point per Section 13 of the Safety Data Sheet of each component. Spent cartridges and static mixers are disposed of as cured epoxy waste. Do not reuse contaminated packaging and do not discharge uncured product to drains, soil or waterways.

Quality Records

Record the batch numbers of every cartridge used, substrate preparation method, groove dimensions cut, crack locations, widths and lengths, port spacing and locations, number of top-off passes and the point at which the crack ceased accepting material, product conditioning temperature before use, ambient and substrate temperature at application, cure periods before grinding, coating or traffic, and final inspection results, as part of the project quality assurance records.

Storage

Store in original, unopened packaging in a dry place between 5°C and 35°C, protected from direct sunlight, frost and moisture. Condition the material to 18–29°C before use. Shelf life: 24 months from the date of manufacture when stored as specified.

Safety Precautions and First Aid

Refer to the current Safety Data Sheets before use — both Part A and Part B are separately classified. Uncured epoxy resins cause serious eye damage and skin irritation, and hardener components may cause skin sensitisation and respiratory sensitisation in susceptible persons.

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Safety Precautions and First Aid (continued)

Wear impermeable nitrile gloves, eye and face protection and long-sleeved protective clothing, and use respiratory protection where ventilation is inadequate or where the SDS and workplace risk assessment require it. Ensure good airflow in enclosed and confined areas. Avoid all skin contact with uncured material. The reaction is exothermic — never leave a full mixed kit standing confined in the mixing container. Do not eat, drink or smoke when handling; wash hands before breaks and after work; contaminated work clothing must not leave the workplace. The Chemwatch SDS numbers for this product are to be confirmed — refer to the Change Register.

First aid — Eyes: hold eyelids apart and flush continuously with running water for at least 15 minutes and transport to hospital or a doctor without delay. Skin: remove contaminated clothing and footwear and wash the affected area thoroughly with soap and water; seek medical advice if irritation, rash or sensitisation occurs. Inhaled: remove to fresh air and keep comfortable for breathing; seek medical attention if respiratory symptoms occur. Swallowed: do NOT induce vomiting; rinse mouth and seek immediate medical attention. POISONS INFORMATION CENTRE: 13 11 26 (Australia-wide, 24 hours). In an emergency, dial 000. KEEP OUT OF REACH OF CHILDREN. Read the Safety Data Sheet (SDS) before use — available at www.forspec.com.au.

Warranty

Standard Product and Performance Warranty: Forspec Protective Coatings Pty Ltd as Trustee for Forspec Protective Coatings (ABN 11 204 033 631) warrants that CRACKLOCK E400L will be free from manufacturing defects and will not fail under normal usage for a period of ten (10) years from the date of purchase, when installed and used strictly in accordance with this Technical Data Sheet and Forspec's written instructions. This warranty covers the supply of the product only; it does not cover installation, application or workmanship. Remedies are limited, at Forspec's discretion, to replacement of the defective product (or defective portion) or a refund of the purchase price. The full terms, conditions and exclusions are set out in the Forspec Standard Product and Performance Warranty, available at www.forspec.com.au — key conditions include application by a suitably qualified and, where required by law, licensed applicator; use within shelf life; and installation as part of a Forspec approved system without non-approved third-party products.

Project and system warranties: extended project-specific warranties are available at the request of the applicator and must be applied for using the Forspec Warranty Request Form prior to commencement of works. Issue is subject to Forspec approval and is conditional on the use of the complete specified FORSPEC system, application in strict accordance with the current TDS by suitably qualified applicators, and completion of the project quality records described above. The warranty period and terms are as stated in the issued warranty certificate.

Claims: notify Forspec in writing within thirty (30) days of discovery of the alleged defect and within the warranty period, by post to 22/872 Canterbury Road, Roselands NSW 2196 or by email to info@forspec.com.au, including proof of purchase, installation details (date, location, installer), a description of the defect with supporting evidence, and your contact details. Forspec may inspect the site, perform testing and collect samples before determining a claim.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Data Sheet Currency

This Technical Data Sheet (TDS) and the corresponding Safety Data Sheet (SDS) are subject to revision as necessary to ensure compliance with relevant Australian Standards and to incorporate technological advancement. Read the most current versions before use, as application and performance data may be updated. For the latest technical information, contact Forspec Protective Coatings on (02) 8021 3517 or info@forspec.com.au. The information provided is representative and does not serve as a comprehensive specification. For specific projects, consult directly with Forspec Protective Coatings for tailored specifications. This data sheet was issued on 25/08/2026 and is valid for three years from the date of issue unless superseded by a later revision — always confirm the current version at www.forspec.com.au before use.

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Data Sheet Currency (continued)

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