



CRACKLOCK E400L

Technical Data Sheet

Structural Injection Epoxy

Description

CRACKLOCK E400L is an advanced, high-strength epoxy adhesive engineered for precision crack repair. Its ultra-low viscosity allows deep penetration into fine cracks, ensuring comprehensive structural restoration from within. Formulated as 100% solids, solvent-free system with low VOC content, it complies with stringent environmental and performance standards. Designed for pressure injection and gravity-feed applications, **CRACKLOCK E400L** is ideal for repairing structural cracks in horizontal concrete and masonry ranging from 0.05mm to 3mm in width. Beyond crack injection, its versatility extends to use as an epoxy resin binder, enabling epoxy mortar patching and interior surface overlays when combined with aggregate, delivering a durable and high-strength repair solution.

CRACKLOCK E400L applications:

- Structural Crack Repair – Pressure injection and gravity-feed for horizontal concrete and masonry (0.05mm to 3mm).
- Epoxy Mortar Patching – Used as a binder with aggregate for high-strength repairs.
- Surface Overlays – Durable epoxy coating for interior surfaces when combined with aggregate.
- Void And Cavity Filling – Deep penetration into fine cracks and voids for structural integrity.
- Industrial And Commercial Repairs – Ideal for warehouses, bridges, tunnels, and infrastructure.
- Low-VOC Applications – Compliant with environmental regulations for controlled environments.

CRACKLOCK E400L Properties

Viscosity	100-500 Cps @ 25°C	Service Temperature (After Curing)	-7°C up to 50°C
Colour	Clear to Light Amber	Condition Material To	18 °C – 29 °C (65 °F – 85 °F) before using
Gel Time (60G)	3 to 5 Hours	Storage Conditions	5 °C – 35 °C (40 °F – 95 °F)
Tack Free Time (23°C)	30-40 Minutes	Size	400mL
Tensile Strength (ASTM D638-14)	34.6 MPa	Ratio	3:1 Mix
Compressive Strength (ASTM D695-15)	80.5 MPa	Shrinkage On Cure	0.01%
Flexural Strength (ASTM D790-17)	70.3 MPa		

Instructions

Before commencing with cartridge replacement or product mixing, ensure thorough preparation of bonding surfaces. Ideally, aim to consume an entire cartridge without interruptions to maintain consistent flow.

Surface Preparation

For optimal results, prepare the surfaces meticulously. Whether dealing with old or new concrete, cleanliness is paramount. Surfaces must be devoid of any contaminants such as dust, dirt, grease, wax, or oil. Smooth surfaces require mechanical roughening before application

Cartridge Set-up

1. While preparing the cartridge, keep it upright to prevent any material leakage. Follow these steps:
 - a. Shake the cartridge for a minute, then let it stand upright for another minute to allow bubbles to rise.
 - b. Insert the cartridge into the FORSPEC Heavy Duty Dual Cartridge Gun, remove the plastic cap and plug.
 - c. Dispense the material into a disposable container until both resin and hardener flow evenly.
 - d. Attach the flow control port and nozzle, then slowly dispense the material through the nozzle.

Gravity Feed Crack Repair for Horizontal Applications

CRACKLOCK E400L is designed to address hairline to fine cracks, ranging from 0.05mm to 3mm in width. For wider cracks, spanning from fine to medium, consider utilizing **CRACKPRO 1200PS** for optimal results. To prepare the crack for treatment, begin by cutting a groove with an abrasive or diamond blade to achieve a width of 3mm and a minimum depth of 1mm. Next, utilize a wire brush to abrade the crack

and remove any debris such as dust, dirt, grease, wax, or oil. Ensure thorough cleaning to eliminate all contaminants. Proceed to pour or inject **CRACKLOCK E400L** into the crack, allowing its self-leveling properties to fill the entire area. Repeat the application if necessary to ensure complete crack filling. Adhere to the cartridge preparation set-up for seamless application.

Spall Patch Application

To avoid a feathered edge, cut around the spall into sound concrete with a grinder or circular saw using a diamond or concrete abrasive blade. Clear all loose concrete within the spall and follow surface preparation instructions diligently.

Estimate the required product amount, mix Part A and Part B thoroughly at a 2:1 ratio, and add 4-5 parts by volume of kiln-dried sand or aggregate. Pour and trowel until smooth/level, with a maximum mortar thickness of 70mm per coat.

Capping Application/Port Injection Procedure

Step 1: Preparation

- Inspect the crack slated for repair.
- Identify and mark any areas where the crack is discontinuous.
- Lay plastic sheeting on the floor to protect it.
- Thoroughly clean the crack and its immediate surroundings using a wire brush.

Step 2: Port Placement

- **Continuous Cracks:**
 - Space port locations approximately every 18 inches, starting from the crack's bottom.
- **Discontinuous Cracks:**
 - Position port locations just above any points where the crack is discontinuous.
 - Additional port spacing may be necessary for cracks with multiple discontinuous points.

Step 3: Port Installation

- Remove the port cap from the side and set it aside. Dispense a small amount of High Strength Epoxy Paste onto a disposable work surface. Coat the entire flat edge of the port with the epoxy paste.
- Ensure the port hole is not obstructed with epoxy.
- Firmly press the port directly over the marked crack location.

Step 4: Crack Coverage

- Dispense approximately one-third of the High

- Strength Epoxy Paste PROBOND 1100PS onto the work surface and add more as needed.
- Apply the epoxy paste over the entire crack.
- Feather the epoxy out approximately 2 inches or more on both sides of the crack.
- Surround each port with epoxy until the port base is no longer visible.

Step 5: Injection

- Replace the black plastic pull on the caulking gun with one of the plastic pushers.
- Load the caulking gun with Structural Injection Epoxy **CRACKPRO 1200PS / CRACKLOCK E400L** (for small cracks) or Polyurethane Foam **CRACKSWELL PU1100** (for large cracks) equipped with a static mixer.
- Insert the static mixer into the bottom port until it clicks.
- Dispense resin until it emerges from the port directly above.
- Remove the caulking gun and cap the port.
- Repeat the process for each port, working your way up the wall.
- Repeat the entire procedure for any additional corner repairs.

Step 6: Clean-Up

- Once the materials have fully cured, remove the ports from the wall using a hammer.

Curing Probond

CRACKLOCK E400L typically cures within 3 hours after application at a temperature of 24°C. Following this duration, **CRACKLOCK E400L** can undergo mechanical grinding, be coated with paint or other architectural coatings, and is ready for full traffic.

Application Temperature

- The substrate and ambient air temperature should range between 5°C and 35°C during application. If the work environment or substrate temperature drops below 21°C, it is advisable to condition the product to a temperature between 21°C and 24°C before use. Extremely cold product may thicken, while excessively warm conditions can accelerate the reaction process.

Packaging CRACKLOCK E400L

- 400mL Cartridges

Shelf Life

When stored in the original unopened packaging, **CRACKLOCK E400L** has a shelf life of 24 months. Store in a dry place at 23°C and 50% relative humidity for optimal longevity.

Limitations

- Sanding before over coating with paint or other architectural coatings enhances adhesion. Conduct a small test area before proceeding with the entire project.
- Do not thin the product with solvents, as this inhibits curing.
- **CRACKLOCK E400L** is not suitable for repairing cracks subject to movement.
- Designed for small patch repairs only; excessive heat may occur in deeper or larger repair areas, potentially causing swelling, smoking, and cracking.
- Prior to any substrate preparation, installation, or finishing methods involving **CRACKLOCK E400L**, be aware of potential risks and use appropriate personal protective equipment (PPE). Consult substrate manufacturers for Safety Data Sheets (SDS) as needed.

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