



# EpiMax 111



## Structural Injection Epoxy System

### Description

EpiMax 111 has been developed to offer an unmatched combination of low-mixed viscosity, good work time and high full-cure mechanical strengths. This low viscosity and low surface tension has been achieved without the incorporation of any solvents. The system has been developed to offer fast injection application and has excellent surface wetting. EpiMax 111 has been specially developed to bond to both dry and damp surfaces.

EpiMax 111 is available in SLOW, STANDARD and FAST curing grades.

EpiMax 111 Type 2 is available for larger volume projects.

### Advantages

- Solventless
- Standard & Express grades
- Good chemical resistance
- Low viscosity aids penetration
- High mechanical strengths

### Typical applications

- Structural injection & grouting repairs
- Patching material for concrete
- Monolithic restoration of delaminated concrete
- Grout for bolts, dowels, handrail posts, etc.

### General properties:

- Initial mixed viscosity: 0.1 Pa.s at 25°C
- Flexural yield strength: 95 MPa
- Compressive yield strength: 105 MPa
- Water absorption: 0.70%
- Convenient mix ratio (3:1 pbv)
- Volume solids content: 100%
- Tensile yield strength: 60 MPa
- Compressive modulus: 1.4 GPa
- Concrete bond strength: 2.7 MPa (concrete failure)

### General properties - EpiMax 111 Type 2:

- Initial mixed viscosity: 0.3 Pa.s at 25°C
- Flexural yield strength: 87 MPa
- Compressive yield strength: 95 MPa
- Water absorption: 0.85%
- Volume solids content: 100%
- Tensile yield strength: 60 MPa
- Compressive modulus: 1.2 GPa
- Concrete bond strength: 2.7 MPa (concrete failure)



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### **Slow version properties:**

- Work time per pack: 2 hours at 25° C
- Cure time: 1 day at 25° C

### **Standard version properties:**

- Work time per pack: 1 hour at 25° C
- Cure time: 18 hours at 25° C

### **Fast version properties:**

- Work time per pack: 45 minutes at 25° C
- Cure time: 12 hours at 25° C

### **Estimating Data**

2 ltr EpiMax 111 Structural Injection Epoxy = 40 lineal metres of 0.5 mm x 10 cm crack injection

### **Surface preparation**

Cracks and surrounding surfaces must be clean and structurally sound. Remove all oil, grease, dirt, laitance or other contaminants. Abrasive cleaning and routing methods are recommended. Use clean, oil-free compressed air to remove dust or debris. A simple and effective cleaning technique is to simply flush the crack with the mixed EpiMax 111 during the course of the repair. Observe remote seepage and continue dispensing until the product is free of contaminants. When the seepage looks clean, contain the drain and continue with the repair.

### **Mixing**

Pour all the Part B into the Part A container. Mix thoroughly using a stirrer fitted to a low speed (400 rpm) power mixer. Ensure that all the material on the sides and on the stirrer are incorporated. Take care to avoid air entrapment into the mixture.

### **Application**

EpiMax 111 is especially suitable for use with low pressure injection equipment such as the Lily LPI System. EpiMax 111 FAST can also be used with the Lily LPI System but remember that product remaining in the bowl will exotherm and gel quickly.

The Lily LPI System is ideal for small projects and unique conditions that prohibit the use of significant pressure.

For example, low pressure techniques are often used for delicate architectural surfaces because they allow the use of low strength capping adhesives, such as sealants, that can be removed without marring the surface of the concrete.

The dispenser consists of a steel frame with a collar to support the disposable bowl, a lid, a clamping device to secure the lid, and brackets to mount a regulator and pressure gauge. The pressure regulator is specially manufactured so that the dispense pressure cannot exceed 1 bar.

The unit can be pressurized from any clean air source, such as an inexpensive 20 litre cylinder. EpiMax 111 is pre-mixed in the disposable bowl which is then lightly pressurized to flood a circuit of plastic tubing connected to a series of porting adapters. All of the ports are injected simultaneously. Pressure is maintained until the system has gelled within the tubing.

The adapters, tubing, and chamber are usually left in place until the system has hardened. They can then be disposed of in a fully cured and environmentally friendly condition. Since the LPI uses very low pressure, penetration requires more time than with higher pressures. For this reason, EpiMax 111, with very low viscosity and long work time, works very well.

The LPI uses a two part porting adapter consisting of a nylon pedestal (LPP) and polyethylene tee (LPT). The pedestal is fixed to the surface over the void with an adhesive. The barbed tee snaps onto the pedestal to plumb the tubing.

A tool (M-260) is used to set the pedestals. It holds the pedestal while EpiMax 575 (Standard or Express) is applied and guides it to its precise location. The tip of the tool also protects the opening into the void from oozing adhesive that may otherwise clog it.

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EpiMax 575 (Standard or Express) is applied over the crack to retain the injected system. Additional EpiMax 575 (Standard or Express) is applied over the base of the pedestal. After the EpiMax 575 (Standard or Express) has hardened, the tees are snapped onto the pedestals. A soft plastic tubing (T-101) is then cut in segments to plumb the ports in series - like Christmas tree lights. Cracks 10 m in length can often be injected in a single setup. Tees (P-830) and crosses (P-831) are used to route the tubing to more than one crack. The tubing is drawn through a hole in the lid of the cover of the disposable bowl of the dispenser, and submerged in the mixed EpiMax 111. Pressurization is adjusted by use of the regulator.

A unique feature of the dual component adapter is that the flow to a particular port can be closed by pressing the tee to a second notch on the pedestal. This closes off the flow to the local port, yet allows flow to continue to remote ports. This is useful in the event of a leak in the seal because nearby ports can be closed off, rather than scrubbing the process entirely.

### **Packaging**

EpiMax 111 is available in 2, 20 and 800 litre packs. It is pre-packaged in correct proportions for immediate use.

EpiMax 111 is available in SLOW, STANDARD and FAST grades.

EpiMax 111 Type 2 is available in 60 L kits. It is pre-packaged in correct proportions for immediate use.

### **Safety precautions**

Read **Safety Data Sheet** before commencing any application. Keep away from children. Avoid contact with skin and avoid breathing vapour. Always provide adequate personal protection (gloves and goggles etc) during use. Always provide adequate ventilation, especially in confined spaces. If poisoning occurs, call Doctor or Poisons Information Centre. Phone 13 11 26. If swallowed, DO NOT induce vomiting. Give plenty of water or milk. If skin contact occurs, quickly remove contaminated clothing and wash affected areas thoroughly with soap and water.

TDG Code: Part A Not Classified, Part B UN 1760



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