

Quickmast 110

Polyurethane resin based injection system



Description

Quickmast 110 is a two-component; low viscosity moisture reactive polyurethane system which when reacts with water and expands to form a closed-cell foam barrier. Quickmast 110 is used in conjunction with Quickmast 120 for permanent and effective sealing of live cracks.

Applications

For injection of wet cracks in all types of structural concrete elements, masonry, and brickwork.

Advantages

- ▲ Excellent bond strength to concrete, brickwork, and masonry.
- ▲ Low viscosity polyurethane system, formulated to allow cracks penetration.
- ▲ Rapid reaction with water; will stop water leakage problems.
- ▲ Outstanding resistance to hydrostatic pressure.
- ▲ Used with Quickmast 120 to form a permanently elastic seal.
- ▲ Exhibit good chemical resistance.
- ▲ Non-toxic, suitable for use in contact with potable water.

Standards

Quickmast 110 is suitable for use in contact with potable water when tested in accordance with BS 6920.

Method of Use

Depending on crack width, depth, location, and thickness, many injection techniques requiring different injection tools and equipment may be used.

The injection method given in this Technical Data Sheet is based on the most common situation. For more details, consult DCP Technical Department for assessments and advice.

Technical Properties:

Reaction time with water:	Between 5 – 30 sec @ 25°C
Mixed density :	1.120 ± 0.05 g/cm ³ @ 25°C
Viscosity:	60 – 120 mPa.s @ 25°C
Pot life in absence of water:	3 – 4 hr @ 25°C 2 – 3 hr @ 40°C

Substrate Preparation

The surface of the cracks should be cleaned from dust, oil, plaster, grease, curing compound and corrosion deposits. All cracks to be repaired should be cleaned with compressed air. This should be carried out after drilling of injection holes.

Injection Holes Drilling & Fixing

Holes are drilled to install mechanical packers. Always try to allocate steel re-bars and conduit before drilling. Using a high-quality rotary hammer drill, and depending on packer diameter used, a suitable drill pit used, usually 13 mm or 16 mm diameter mechanical packers are used.

The angle which drilling should be is 45°C or less to the surface and toward the crack. Depth of the drill holes intersecting the crack should be somewhat close to the middle of the structure, if possible.

Holes greater than 45 cm are not required even if the concrete being repaired is more than 90 cm thick. Holes should always be staggered from one side of the cracks to the other.

Spacing: distance between drilled holes usually varies from approximately 15 – 50 cm according to the width of the cracks (30 cm is commonly used). Yet the wider the cracks, the further apart are drill holes.

Note:

If concrete thickness 15 cm or less, do not attempt angle drilling. Also to minimize concrete damages, packers will be set into the face of the crack.

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Fixing of Injection Mechanical Packers (Nipples)

Packers shall be placed into drilled holes so that top of the rubber sleeve is below the concrete surface. Tight the packer with a wrench as much as you can.

Injection

Mix Quickmast 110, resin and accelerator using mechanical slow speed drill. Load the mixed resin and charge the pump, hose and gun.

When injecting into a defined crack, the crack surfaces between two mechanical packers exhibits immediate free flow of resin while working the first packer, pause for few minutes, in most cases the foam of Quickmast 110 will react fast enough with water and expand rapidly to close these cracks, and the cured Quickmast 110 will heal the crack and provide surface seal to contain the material to flow. After 2 - 3 minutes , start pumping again.

If the crack between the packers did not heal , then apply "Setplug" a fast cure water plug . Begin injection at point of highest resistance to ensure good penetration and minimal loss of materials.

The injection is usually started at the lowest point on vertical crack and the narrowest area on the horizontal surface. Injection process will continue until the mixed resins (Quickmast 110) travelled to next packer. Disconnect and move to next packer.

After completing two packers, return to the first packer and inject again. Continue with this fashion until the crack is filled. Immediately and after water flow stoppage, inject the crack/ honeycombing with a mixed (part A & B) resin using Quickmast 120 to permanently seal the crack/ honeycombing.

Quickmast 120 is a flexible resin with unique physical properties such as:

- ▲ 60 - 80 % elastic properties and
- ▲ 2 MPa tensile strength.

Cleaning

- ▲ Resins must be cleaned up immediately before it sets.
- ▲ Packers must be removed within 24 - 48 hours and patched with appropriate epoxy mortar using Quickmast 341C.

- ▲ Electrical grinder can be used to remove excess cured resin that flowed out the cracks.

Packaging

Quickmast 110 is available in 1.1 kg (1 litre) and 5.5 kg (5 litre) packs.

Storage

Quickmast 110 has a shelf life of 6 months from date of manufacture if stored at temperatures between 10°C and 30°C in dry conditions and original sealed containers.

If these conditions are exceeded, contact DCP Technical Department for advice.

Cautions

Health and Safety

Consult the appropriate Material Safety Data Sheet prior to using Quickmast 110.

Fire

Quickmast 110 is nonflammable.

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- ▲ Surface treatments
- ▲ Grouts and anchors.
- ▲ Concrete repair.
- ▲ Flooring systems.
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- ▲ Adhesives.
- ▲ Tile adhesives and grouts.
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