

Quickmast 105

Resin based injection crack repair system



DESCRIPTION

Quickmast 105 is a two component, low viscosity epoxy resin system for crack injection applications in concrete, masonry, and brickwork.

APPLICATIONS

- » For injection of cracks in all types of structural concrete elements, masonry, and brickwork.
- » Suitable for injecting cracks widths from 0.2 - 10 mm.
- » Suitable for manual pouring into horizontal floor cracks.

ADVANTAGES

- » Excellent bond strength to concrete, brickwork, and masonry.
- » Low viscosity epoxy resin, formulated to allow cracks penetration down to 0.2 mm.
- » Can be used in damp or dry conditions.
- » Low creep.
- » Non-shrink.
- » Exhibit good chemical resistance.

STANDARDS

- » Quickmast 105 is suitable for use in contact with potable water when tested in accordance to BS 6920.
- » Quickmast 105 when tested at normal temperature, complies with the requirements of ASTM C881, Types I & IV, Grade 1 (see technical properties table).

METHOD OF USE

Depending on crack width, depth, location, and thickness of the structural element that needs to be injected, many injection techniques requiring different injection tools and equipment may be used.

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

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.

TECHNICAL PROPERTIES @ 25°C:

Density:	1.10 ± 0.05
Pot life (gel time): ASTM C881	50 - 70 min
Viscosity: ASTM D1084	2 - 5 poise @ 25°C 1 - 2 poise @ 35°C
Minimum application temperature:	5°C
Compressive strength: ASTM D695 BS 6319-2	≥ 70 MPa @ 7 days
Tensile strength: ASTM D638	≥ 50 MPa @ 7 days
Elongation at break: ASTM D638	≥ 1%
Bond strength: ASTM C882	≥ 7 MPa @ 2 days ≥ 10 MPa @ 14 days
Water absorption: ASTM D570	< 1%
Flexural strength: BS 6319-3	≥ 45 MPa @ 7 days
VOC:	< 20 g/ltr

INJECTION HOLES DRILLING & FIXING

Holes are drilled to install mechanical packers. Always try to allocate steel re-bars and conduit before drilling. Using 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 or less to the surface and toward the crack. Depth of the drill holes intersecting the crack should be somewhat close to middle of 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.





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Spacing: distance between drilled holes usually varies from approximately 15 – 50 cm according to 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 spalling, packers will be set into the face of the crack.

FIXING OF INJECTION MECHANICAL PACKERS (NIPPLES)

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

Mix a small quantity of epoxy adhesive using Quickmast GPS (Fast set).

The mix adhesive should be applied on the cracks between the injection packers to seal the cracks at a thickness of 2 – 3 mm and at least 20 – 30 mm extending from both sides of the cracks.

Mixed Quickmast GPS has pot life = 10 – 15 minutes and 30 minutes cure time at 25°C.

Injection process can commence 2 hours after applying Quickmast GPS.

INJECTION

Mix Quickmast 105, resin and hardener using mechanical slow speed drill when using single component injection pump. When using 2 components pump, the pump should be charged at 4:1 ratio (by volume), which is equivalent to the pre-packed proportion of the base and hardener components.

Load the mixed resin and charge the pump, hose and gun. Begin injection at point of highest resistance to ensure good penetration and minimal loss of materials.

The injection is usually starts at the lowest point on vertical crack and at the narrowest area on horizontal surface. Injection process will continue until the mixed resins (Quickmast 105) travelled to next packer. Disconnect and move to next packer.

After completing two packers, return to first packer and inject again. Continue with this fashion until crack is completely filled.

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Note:

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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 105 is available in 1.6 kg (1.5 litre) and 5.32 kg (5 litre) packs.

THICKNESSES AND SIZE LIMITATIONS

Quickmast 105 is suitable for injecting cracks widths from 0.2 - 10 mm.

STORAGE

Quickmast 105 has a shelf life of 18 months from date of manufacture if stored at a temperature of 25°C.

If these conditions are exceeded, DCP Technical Department should be contacted for advise.

CAUTIONS

HEALTH AND SAFETY

Consult the appropriate Material Safety Data Sheet prior to using Quickmast 105.

FIRE

Quickmast 105, Quickmast GPS and Quickmast 341C are nonflammable.

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