

Quickmast 1K Flex

One component, flexible, polyurethane foaming injection resin for watertight sealing of cracks



DESCRIPTION

Quickmast 1K Flex is a moisture reactive one component, hydrophilic solvent free, low viscosity polyurethane based foaming injection resin that expands and cures to a resilient, flexible closed-cell foam when in contact with water and withstands wet/dry cycles and thermal movements.

Quickmast 1K Flex is used for permanent and effective sealing of potential water leaks and live cracks in wet or dry conditions in concrete structures and masonry.

APPLICATIONS

- » Sealing moving, leaking cracks.
- » Sealing and waterproofing of construction joints.
- » Sealing wet or dry live non-structural cracks for all types of structural concrete elements, masonry, and brickwork.
- » Sealing of water ingress between the concrete precast segments of tunnel joints.
- » Screen injections behind tunnel segments.
- » Waterproofing of sewer pipes.
- » Used as a 1 component system for injection into wet conditions or as a two component system with water for injection into dry cracks.

ADVANTAGES

- » Solvent free, environmentally friendly.
- » One component, ready to use, ideal for pump application.
- » Not affected in corrosive environments.
- » Good flexibility allowing for the absorption of movement.
- » Not easily washed out in case of high volume water flow.
- » Very high water absorption of up to 4 times the volume of resin.
- » Outstanding resistance to hydrostatic pressure.
- » Reacts with water to form a permanent and impermeable elastic seal.
- » Excellent bond and tensile strength in wet and dry conditions.
- » High durability, long lasting solution.
- » Resistance to thermal movement, excellent wet-dry and freeze-thaw cycles without degradation.
- » Excellent chemical resistance.
- » Low viscosity polyurethane system, formulated to allow for a good penetration into cracks in different types of substrates.

TECHNICAL PROPERTIES:

Colour:	Yellow brownish liquid
Density:	1.1 ± 0.05 g/cm ³ @ 20°C
Viscosity: EN ISO 3219	< 500 mPa.s @25°C
Curing time: (1:1 water:resin)	10 sec - 3 min
Minimum crack width:	≥ 0.4 mm

METHOD OF USE

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

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

SUBSTRATE PREPARATION

The surface of the cracks should be cleaned from dust, oil, plaster, grease, curing compound and corrosion deposits.

Check coherence of the concrete substrate in advance to confirm its ability to withstand the injection pressure. 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 conduits before drilling and plan the drilling pattern so that the reinforcement is not pierced.

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

Spacing: distance between drilled holes usually varies according to the width of the crack (typically equals the width of the section). Yet the wider the cracks, the further apart are drill holes.

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FIXING OF INJECTION MECHANICAL PACKERS

Determine the type and dimensions of the packers according to the pump type, substrate thickness and injection type. For more information, consult DCP Technical Department.

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.

Leave some adjacent holes open so you can follow the route of Quickmast 1K Flex resin.

INJECTION

Prior to usage, shake the Quickmast 1K Flex resin thoroughly to obtain a homogeneous material. Wet structure: Inject Quickmast 1K Flex resin continuously into the crack using one-component injection pump. The resin will react with the water in the structure and will foam.

Dry structure:

For injection into dry cracks, 1:1 dilution ratio with water is recommended. However, other dilution rates can be used. Higher dilution rates will produce denser, lower volumes of foam.

Inject Quickmast 1K Flex resin and water continuously into the crack using a 2-component, high pressure injection pump. The two mixtures are inserted separately in the pump but are mixed homogeneously in a volume ratio of 1:1 in the mixing head of the pump before being injected through the pump nozzle.

Alternatively, pre-inject the crack well with clean water, and apply Quickmast 1K Flex resin using a one-component injection pump.

The injection is usually started at the lowest point on the vertical crack and at the narrowest area on the horizontal surface. Start injection with the lowest possible pressure. The injection pressure varies depending on the structure and size of the crack, Increase the pressure until resin begins to flow.

The injection process will continue until the injected Quickmast 1K Flex foam travels to the next packer(s). This is necessary to achieve an even material distribution. Stop pumping, disconnect and move to the next packer as quickly as possible, continue this procedure until the crack is completely filled.

REMARKS

- » Quickmast 1K Flex is ideally used for cracks of ≥ 0.4 mm.
- » Quickmast 1K Flex can only be injected in moisture containing areas.
- » The reaction time depends on the temperature of the material, the substrate, and the amount of water present. Higher temperatures will speed up the reaction time and lower temperatures will slow it down.
- » Quickmast 1K Flex is ideally used for cases of high volumes of water and low water pressure.
- » Where water is gushing out of the crack with high flow rates and pressure, the use of 2 component injection systems is recommended (Quickmast 110 and Quickmast 120).

CLEANING

- » Resins must be cleaned up immediately before it sets.
- » Packers must be removed after the material is cured, and holes should be patched with appropriate fast setting mortar.
- » Clean and flush the pump equipment with acetone or Methyl Ethyl Ketone solvent (MEK) every time there is a stop of more than 15 minutes.
- » At the end of the injection, flush with a sufficient amount of acetone or Methyl Ethyl Ketone solvent (MEK), make sure that the pump is well cleaned and only stop when clear water is coming out of the pump.

PACKAGING

Quickmast 1K Flex is available in 1.1, 5.5, and 22 kg containers.

STORAGE

Quickmast 1K Flex has a shelf life of 12 months from the date of manufacture if stored away from frost and heat in a dry area at temperatures between 10°C and 30°C in original sealed packs. Protect the products against UV and sunlight.

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



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CAUTIONS

HEALTH AND SAFETY

Wear safety glasses, gloves and protective clothing. Avoid contact with skin and eyes. In the event of contact with skin or eyes: rinse abundantly with clean water.

Consult the appropriate Material Safety Data Sheet prior to using Quickmast 1K Flex.

FIRE

Quickmast 1K Flex is nonflammable.



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- » Protective coatings.
- » Sealants.
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- » Building products.
- » Structural strengthening.

Note:

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