

Proposal

Injection of moving cracks, 0.25 - 3 mm wide, with a two-part, low viscosity, polyurethane resin.

The resin injection system featured in this method statement may also be injected directly (without the use of packers or nipples) via a long nozzle, injection probe. This has been omitted purely in the interests of clarity. All other parts of the method statement remain the same.

1 Preparation

- 1.1 Wire brush the surface of the crack and the adjacent substrate to remove all loose deposits, debris and other deleterious substances.
- 1.2 The prepared area should then be cleaned to remove all loose particles and dust by means of oil free compressed air.
- 1.3 Holes need to be drilled, to receive the injection packers, at a regular spacing along the length of the crack. Such spacing will be largely dependent upon the width and depth of the crack. The spacing should thus be sufficient to ensure that the resin will ultimately penetrate along the crack to the next injection point; this will normally be in the range of 200 to 500 mm.
- 1.4 The holes themselves should be drilled either directly into the crack, or diagonally into it from the adjacent substrate (staggered on alternate sides of the crack), using a drill bit appropriate to the size of the injection packers.
- 1.5 If the substrate is cracked all the way through, hole spacing and positioning should be staggered on both sides, with those at the back placed midway between those at the front.

2 Fixing injection packers

- 2.1 The injection packers shall be inserted into the pre-drilled holes along the length of the crack.

- 2.2 The surface of the cracks between the packers shall be sealed with a band of Nitomortar FC, 30 to 40 mm wide and 2 to 3 mm thick. Both sides of any cracks which go all the way through a wall or slab shall be sealed in this way.
- 2.3 Leave the sealer coat of Nitomortar FC to cure properly - 8 hours at 35°C.

3 Mixing

- 3.1 Mix the two components of Nitofill UR63 together until the liquid becomes clear.
- 3.2 Insert the mixed material into the injection gun and close all seals.
- 3.3 The crack should be filled in a single, continuous operation. Sufficient material and manpower should therefore be available prior to commencement of work.

4 Application

- 4.1 Attach the injection hose to the lowest packer on vertical cracks, or to either end of horizontal cracks.
- 4.2 Attach injection gun hose to the packer and slowly apply pressure by gently squeezing the gun trigger.
- 4.3 Continue applying pressure until resin appears at the next packer location or until no more resin will enter the crack.
- 4.4 Remove pressure from the injection gun, close valve and crimp injection packer. Move on to the next location.
- 4.5 Continue as above at all injection points until all packer locations have been sealed.
- 4.6 When the engineer is satisfied that the crack has been sealed sufficiently, finish operation and allow to cure for 6 hours.
- 4.7 Remove all Nitomortar FC and packers from the concrete and make good by suitable means.

Note

The above information is for application procedure guidelines only. All materials must be mixed and applied strictly in accordance with instructions given on the relevant technical data sheets.

Refer to Section for high temperature working.