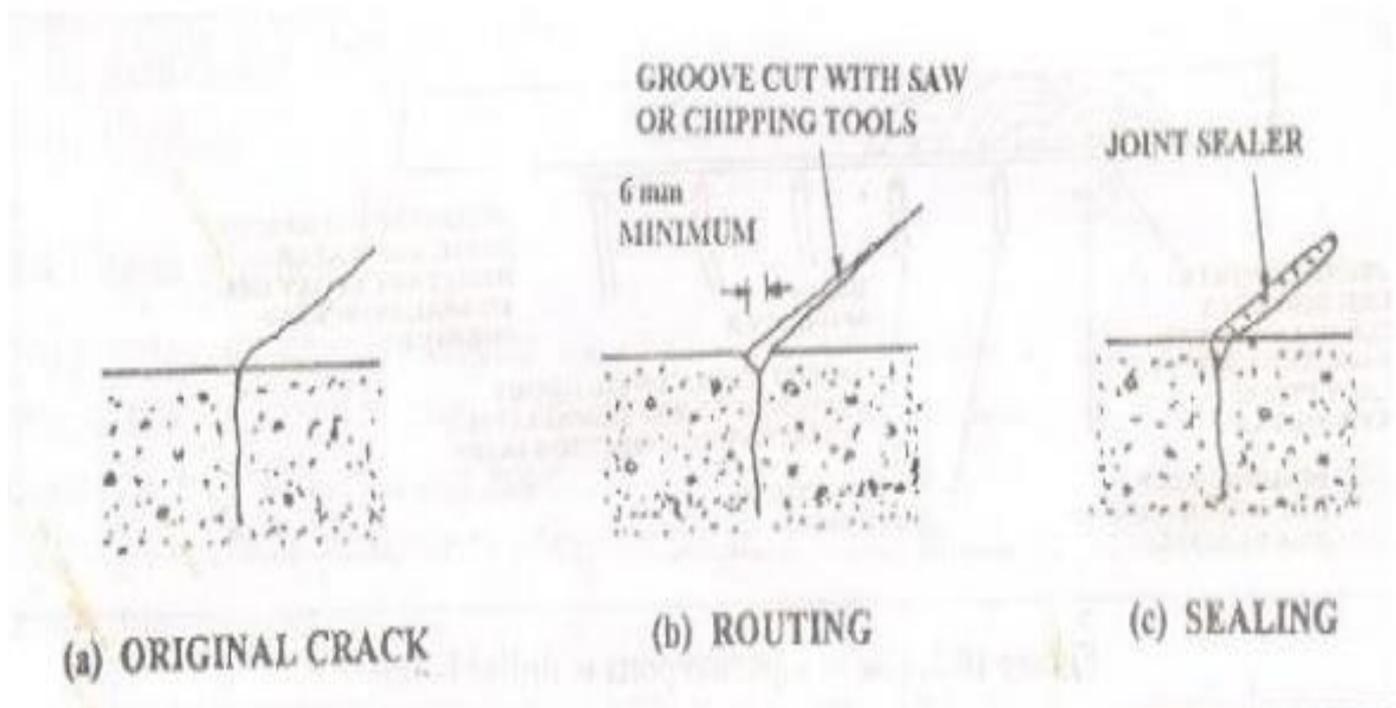


REPAIR OF CRACKED REINFORCED CONCRETE ELEMENTS

Routing and sealing

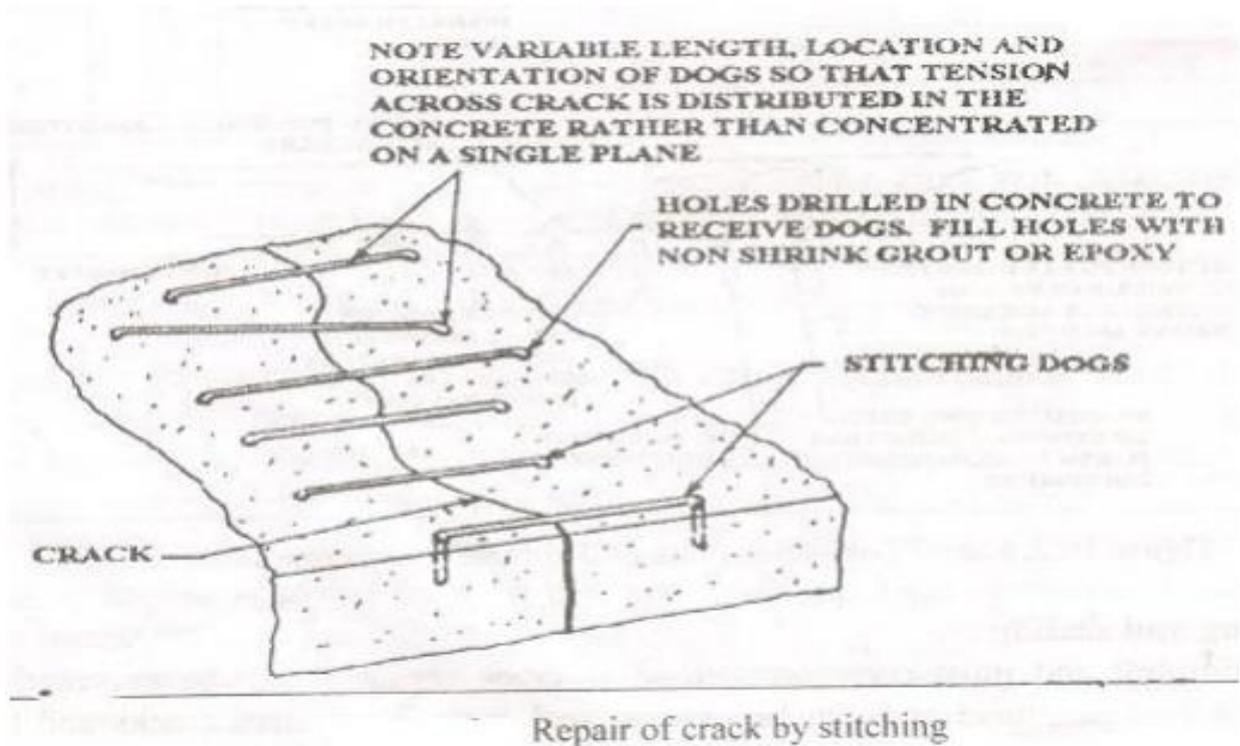
This is the simplest and most common method of crack repair. It can be executed with relatively unskilled personnel and can be used to seal both fine pattern cracks and larger isolated cracks.

The system can be used to repair dormant cracks that are of no structural significance, and is used to seal the cracks against the ingress of moisture, chemicals and carbon dioxide. This involves enlarging the crack along its exposed face and sealing it with crack fillers as shown fig. Care should be taken to ensure that the entire crack is routed and sealed.



Stitching

In this technique, the crack is bridged with U-shaped metal units stitching dogs before being repaired with a rigid resin material. This can establish restoration of the strength and integrity of cracked section; due care is to be given to make analysis check to ensure that this will perform well under applied loads shown fig.



A non-shrink or an epoxy resin based adhesive should be used to anchor the legs of the dogs. Stitching is suitable when tensile strength must be reestablished across major cracks, although stitching will not close the crack, and it is way of stopping the movement of active crack and thereby preventing it from spreading. Stitching dogs should be of variable length and orientation and so located that the tension transmitted across the crack is not applied to a single plane within the section but is spread over an area.

Bonding

Cracks in concrete may be bonded by the injection of epoxy bonding compounds under pressure. A usual practice is to drill into cracks from face of the concrete at several locations. Water or a solvent is injected to flush out the defect. The surface is then allowed to dry. The epoxy is injected into the drilled holes until it flows out through the other holes. The epoxy is injected into the drilled holes until it flows out through the other holes. Bonding with epoxies-cracks as narrow as 0.075mm can be sealed with epoxy compounds, usually pressure injection is restored to in sealing the cracks.

Bandaging

A flexible strip is fixed over the crack with only the edges of the strip bonded. Where movement is not all in one plane, where is excessive movement beyond that which can be accommodated by a recess of convenient size, or if there are factors which prohibit the cutting of a recess, a surface bandage can be used. In areas which are subject to traffic, the flexible bondage will be coated over with a wearing course.