

## Fracture Crack Monitoring Using Digital Image Correlation Technique

**Authors :** B. G. Patel, A. K. Desai, S. G. Shah

**Abstract :** The main objective of this paper is to develop new measurement technique without touching the object. DIC is advance measurement technique use to measure displacement of particle with very high accuracy. This powerful innovative technique which is used to correlate two image segments to determine the similarity between them. For this study, nine geometrically similar beam specimens of different sizes with (steel fibers and glass fibers) and without fibers were tested under three-point bending in a closed loop servo-controlled machine with crack mouth opening displacement control with a rate of opening of 0.0005 mm/sec. Digital images were captured before loading (unreformed state) and at different instances of loading and were analyzed using correlation techniques to compute the surface displacements, crack opening and sliding displacements, load-point displacement, crack length and crack tip location. It was seen that the CMOD and vertical load-point displacement computed using DIC analysis matches well with those measured experimentally.

**Keywords :** Digital Image Correlation, fibres, self compacting concrete, size effect

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