

INVESTIGATION OPENING SHAPE IN HIGH STRENGTH FIBER REINFORCED CONCRETE DEEP BEAMS

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Abstract - Through this paper investigation of opening shape in high strength fiber reinforced concrete deep beams without stirrups have been studied to report a comparison between specimens with maximum opening different shape (square, circle) at the center of shear span in term of crack pattern and load-deflection curve and stress-strain curve, this paper aim to investigate which specimen has better shape than other. This study done by testing nine specimens one of these is control deep beam without opening and steel fiber while the other are two group each group has four specimens with different opening shape and steel fiber content (0,0.5,0.75,1)%, the opening were square (0.387dX0.387d) while the circle opening is (0.435d) diameter all opening located at the center of shear span and reinforced by (2Ø12mm) at the top and (3Ø16mm) at the bottom and two stirrups at the supports to prevent local failure. The results showing that the circle opening shape has good stress distribution around opening and get more strength than square opening. The modeling of specimens in abaqus have good agreement with experimental result.

Keyword - High Strength , Deep Beam , Opening.
