

Abstract

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A comparative study for shear strengthening techniques of reinforced concrete beams using FRP

ABSTRACT: This paper presents the results of a pilot testing program that was undertaken to study the feasibility of strengthening RC beams in shear using FRP reinforcement internally embedded in holes drilled through the depth of the beam. Five similar beams were tested in this program, a control beam without strengthening, three beams strengthened using externally bonded CFRP sheets, NSM CFRP strips, embedded CFRP, GFRP rods. The specimens strengthened with externally bonded sheets, internally embedded CFRP reinforcement had a 30% increase in their shear capacity while the specimens strengthened with NSM strips, internally embedded GFRP reinforcement had a 60% increase in their shear capacity, compared to the control specimens. The results thus confirm the feasibility of the proposed technique.