

Simulation of Exterior Wrapping for Flexural Study on Beams

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Abstract: *The need to retrofit existing reinforced concrete (RC) structures have increased over the decades due to corrosion of steel reinforcement inside the concrete, neglect and overuse, and increased loading. Experimental and numerical studies in this research field showed that using fibre-reinforced Polymer (FRP) materials to strengthen RC members in shear, flexure, and column confinement applications is an effective method to retrofit RC structures. This strengthening technology has numerous advantages over conventional steel plating, such as providing high strength-to-weight ratio, versatility, durability, and ease of use to strengthen RC members. The purpose of this paper is to study the effect of strengthening shear deficient RC beams with externally bonded (EB) carbon fibre-reinforced polymer (CFRP) sheets with and without U-wrap configuration.*

Keywords: Retrofit, Fibre-reinforced Polymer, Carbon fibre-reinforced polymer, Flexure, Strength-to-weight ratio, Versatility, Durability, Externally bonded, U-wrap.

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