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Strengthening of Reinforced Concrete Beam-Column Joint by Reversible Mixed Technologies of FRP

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Abstract : After the earthquake many structures were classified as slightly damaged and, being uneconomic to replace them, at least in the short term, suitable means of repairs of the beam column joint area are being studied. Furthermore there exist a large number of buildings that need retrofitting of the joints before the next earthquake. The paper reports the results of the experimental programme, constituted of three beam-column reinforced concrete joints at a scale of one to three (1/3) tested under the effect of a pre-stressed axial load acting over the column. The beams were subjected at their ends to an alternate cyclic loading under displacement control to simulate a seismic action. Strain and cracking fields were monitored with the help a digital recording camera. Following the analysis of the results, a comparison can be made between the performances in terms of ductility, strength and mode of failure of the different strengthening solution considered.

Keywords : fibrereinforced polymers, joints, reinforced concrete, beam columns
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