

Punching Shear Assessments of Two-way Reinforced Concrete Slabs Strengthened by FRP Strips: A Parametric Study

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Abstract:

This study deals with investigating the punching shear of two-way slabs strengthened by FRP sheets. Also, assessing the punching failure mode by modelling more than 54 specimens having many affecting values such as strengthened area, the thickness of the slab, and main steel reinforcement ratio. The results show that when slabs are strengthened 20% by FRP strips have a slight reduction in capacities and more deflection and ductility. Also, the cracks of full strengthened specimens are decreased with to 10% of unstrengthen specimens. The distances of critical sections of strengthened specimens are increased by about 100% of unstrengthen RC slabs as specified in ACI318 code clauses.