

Performance Evaluation of Shear Stud Connectors in Composite Beams with Steel Plate and RCC slab

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Abstract

The strength and behavior of shear stud connector in composite beam made up of steel plate and reinforced concrete slab was studied experimentally using push-out test. Extensive parametric study was carried out and a mathematical model was developed to predict the shear strength of the connectors. The experimental results show close agreement with the model developed. This work was carried out in the Structures Laboratory of the University of Baghdad, Iraq. Several test specimens with various stud sizes and various strengths of concrete were tested under push out tests. The connector behavior is analyzed in terms of load-slip relationship, from which stiffness of the stud connector can be estimated. The experimental results are compared with the mathematical model and with other established models developed by other researchers.