

Push-out tests and evaluation of FRP perfobond rib shear connectors performance

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Abstract. The behavioural characteristics of FRP (fibre-reinforced polymer) perfobond rib shear connector was examined through push-out tests in order to verify the applicability for pedestrian bridge structure. The aim of this study is to determine interaction between high performance concrete slab and handmade FRP plate which represent web of the composite beam. Combination of these modern materials leads to structural system with both great load bearing capacity and also sufficient flexural stiffness of the composite element. Openings cut into the GFRP plate at a variable spacing allow GFRP reinforcement bars to be inserted to act as shear studs. Hand lay-up process can increase suitable properties of FRP for connection by perfobond rib shear connectors. In this study, three push-out tests on fiber-reinforced polymer were performed to investigate their shear behaviour. The results of the push-out tests on FRP perfobond rib shear connector indicates great promise for application in full scale structures.