

عنوان مقاله:

Influence of FRP width on bond strength of FRP-to-concrete

محل انتشار:

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نویسندگان:

D Mostofinejad - Professor, Department of Civil Engineering, Isfahan University of Technology (IUT), Isfahan, Iran

B Arefian - Graduate student, Department of Civil Engineering, Isfahan University of Technology (IUT), Isfahan, Iran

A. Hosseini - Research assistant, Department of Civil Engineering, Isfahan University of Technology (IUT), Isfahan, Iran

خلاصه مقاله:

Nowadays fiber reinforced polymer (FRP) composites are increasingly used for strengthening of concrete structures. It is evident that the maximum transmittable force from FRP reinforcement to concrete substrate, named as bond strength, greatly affects all the strengthening calculations. Bond strength of externally bonded reinforcement (EBR) FRP systems to concrete substrate is a function of FRP material characteristics, and concrete strength. Although numerous studies have been conducted on the issue, less attention has been paid to the influence of FRP reinforcement width in the form of bf/bc (bc is width of concrete element) on bond strength of EBR joints. Consequently, the main intention of the current study is to experimentally investigate the aforementioned issue. To do so, single lap-shear tests were conducted on eight EBR FRP-to-concrete joints, prepared using two different FRP widths and thicknesses. Experimental results are comprehensively discussed and a detailed comparison with ACI 440.2R-08 model predictions is made.

کلمات کلیدی:

(bond strength, externally bonded reinforcement (EBR), single lap-shear test, fiber reinforced polymer (FRP)

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