عنوان مقاله:

Experimental Study of Behaviour of Reactive Powder Concrete Strengthening by NSM-CFRP Corbels

محل انتشار:

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نویسندگان:

Abdul Kareem Qasim Mohammad - *Civil Engineering Department, Baghdad University, Baghdad, Iraq*

Mushriq Fuad Kadhim Al-Shamaa - *Civil Engineering Department, Baghdad University, Baghdad, Iraq*

خلاصه مقاله:

The research contain an experimental examination for the behaviour of reactive powder concrete corbels, strengthened with varying orientation of Near Surface Mounted Carbon Fiber Reinforcement Polymers (CFRP) strips. Six reactive powder concrete corbels were tested. Divided into two groups, each group contain three specimens, one of them without strengthening takes as control corbel specimen, two corbels in each group strengthened by inclined and horizontal near surface mounted carbon fiber reinforced polymer (NSM-CFRP) stripes, other variable was the shear span to the effective depth ratio (a/d) to study the influences of those variables on the ultimate strength carrying capacity, cracking pattern, cracking load, vertical deflection, failure modes. The results showed an important improvement in the behaviour and load capacity of strengthened reinforced RPC corbels in addition to enhancing the stiffness of corbels. For group A where a/d =0.65, the percentages of increase in load failure were about (10.3% - 15.45%) for inclined and horizontal strengthening respectively, and for group B where a/d =0.4, the percentages of increase in load failure were about (7.1% - 14.6%) for inclined and horizontal strengthening respectively.

کلمات کلیدی:

Corbels; Reactive Powder Concrete; Near Surface Mounted; Carbon Fibers Reinforcement Polymer (CFRP); Shear Strength