

عنوان مقاله:

The Experimental Investigation of Flexural Behavior of Reinforced Concrete Beams Strengthened With Prestressed CFRP Plates

محل انتشار:

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خلاصه مقاله:

The strengthening of structures by using Fiber Reinforced Polymer (FRP) is a conventional and effective method throughout the world. The reason for this acceptance is to obtain good results from these materials in compare with old materials. In time of strengthening of structures by using FRP materials in traditional and non prestressed methods, often the full usage of FRP materials' capacity is not possible; also it is not possible to balance between the percentages of strengthened obtained and cost of project. Therefore in this research the effect of prestressing as a new method for the flexural strengthening of reinforced concrete beam have been investigated. In this research program, flexural strengthening by using CFRP plates as a non prestressed and prestressed have been carried out on 8 reinforced concrete beams. Different level of prestressing ranging from 20 to 35% ultimate tensile strength of CFRP laminate were induced into the bonded plate by using external prestressing system as developed by researchers of this study. The results show the desirable effect of prestressing on the increased loading and desirable usage of CFRP plates

کلمات کلیدی:

Flexural Strengthening, Reinforced Concrete Beam, CFRP Plate, Prestressing

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