

## عنوان مقاله:

Finite Element analysis of FRP strengthened grooved concrete beams

## محل انتشار:

نهمین کنگره بین المللی مهندسی عمران (سال: ۱۳۹۱)

تعداد صفحات اصل مقاله: ۸

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## خلاصه مقاله:

In concrete buildings it may appear to be a need for the structural members to be rehabilitated as it ages by time. This issue may arise from different reasons such as increasing in applied loads, concrete deterioration due to environmental effects, ageing of the structure, design and performance mistakes. Since recent years Fiber Reinforced Polymers (FRP) plate installation to different structural members has been considered as a premier method for strengthening concrete structures. This method's superiority rather than steel plate installation is due to those FRP characteristics such as being light weight, easy consumption and having much more tensile strength than steel plates. Due to smaller sections required in modern architectures, researchers tried to optimize concrete sections such that members sustain much more service loads. Recently researchers improved FRP flexural strengthening of concrete beams using few parallel grooves along the beam length called Externally Bonded Reinforcement on Grooves (EBROG). By using this method we can improve the premature de-bonding occurred during load application. Experimental results indicated a better behavior and an increasing strength compared to Externally Bonded Reinforcement (EBR) beams. In this paper a numerical study of the grooved beams strengthened with FRP (EBROG) is performed and this method's prominence is expressed as an excellent rehabilitation method

## کلمات کلیدی:

FRP, De-bonding, Grooved beams, FE analysis

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/۱۶۶۰۷۴>