

عنوان مقاله:

ANALYTICAL STUDY ON STRENGTHENING OF POTENTIAL PLASTIC HINGE REGION OF DEFECT R.C
COLUMNS WITH GFRP WRAPS

محل انتشار:

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خلاصه مقاله:

This paper presents results of finite element modeling of the reinforced concrete columns with and without GFRP (Glass Fiber Reinforced Polymer) wraps. Twelve specimens were totally designed and modeled for pushover analysis. A couple of them were modeled according to ABA (Iranian Concrete Code) detailing and ten of them were according to ACI (pre-1971). Half of them were strengthened. Only potential plastic hinge region of the columns were wrapped. The analysis was a displacement control with 5 cm displacement applied at top of the columns with various ratios of axial load from (0.05 Agf'c) to (0.25 Agf'c). To investigate of preciseness of the proposed FEM of as-built and retrofitted R.C columns, selective capacity curve of analytical study were compared with those obtained from experimental study. Columns in the laboratory and analytical study had the same configuration and detailing. The analysis resulted in lateral force-displacement capacity envelop of retrofitted and unretrofitted columns. It is shown .that GFRP can be a useful technique to increase the ductility as well as flexural strength of the R.C columns

کلمات کلیدی:

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