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عنوان مقاله:

Finite Element Modeling of a Reinforced Concrete Column Strengthened with Steel Jacket

محل انتشار:

ژورنال مهندسی عمران, دوره 4, شماره 5 (سال: 1397)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

The reinforced concrete column is designed to have a nominal axial resistance. Under different conditions like errors indesign, and changing the use of the building from residential to public or storage (extra live loads), the reinforced concretecolumn will not be able to sustain the desired applied load, and the strengthening is required. This paper presents a finite element model to simulate and investigate the behavior of adding steel jacket to a preloaded and nondamaged reinforced concrete column. Depending on the loading state of the non-strengthened reinforced concrete column and the purpose of adding the steel jacket, two possible cases have been studied. In the first case, which is suitable to investigate the reinforcedconcrete column with design errors, the steel jacket has been added to the unloaded reinforced concrete column; while thesecond case is suitable for adding steel jacket to the pre-loaded nondamaged reinforced concrete column. The finiteelement model was carried out using the ABAQUS/standard v. 6.13 software. The results obtained by the proposed finiteelement model showed fairly good agreement with the existing .experimental and analytical results

كلمات كليدى: Reinforced Concrete Column; Nominal Axial Resistance; Steel Jacket; Finite Element Model

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