عنوان مقاله:

Analytical Studies of RC Frame Structures Exterior Joints under Progressive Collapse

محل انتشار:

دهمین کنگره بین المللی مهندسی عمران (سال: 1394)

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خلاصه مقاله:

The loss of an exterior column in extraordinary events such as a terrorist attack, causing complete change in the direction and distribution of the bending moment on the elements of moment resisting frame that are located directly above it. This changes usually are not predicted in ordinary designs and in case of occurrence may lead to failure in the exterior joints, and subsequent increase overload in adjacent members and triggering progressive collapse. According to the content and the need to more accurate identification the resistant factors of progressive collapse and whereas ground story perimeter frame columns are most vulnerable due to ease of accessibility, in this paper using of nonlinear finite element method, analytical studies carried out on the exterior joints of the RC moment resisting frame it is subjected to the loss of its ground story exterior column. Furthermore the overall performance, in this investigation the effect of deferent seismic detailing, the amount of longitudinal reinforcement in the beam and also special seismic detailing on improved the joints behavior are discussed. It is demonstrated that the proposed finite element model is a viable methodology for this connections analysis

کلمات کلیدی:

Exterior joints, RC frame, Progressive collapse, Non-linear finite element

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