عنوان مقاله:

Evaluation of Seismic Behavior in Exoskeleton Structural System for Reinforced Concrete Tall Buildings

محل انتشار:

نهمین کنگره بین المللی مهندسی عمران (سال: 1391)

تعداد صفحات اصل مقاله: 9

نویسندگان:

,Sima Aramesh - *MEng-civil, Faculty of Civil Engineering, Semnan University, Semnan*

Ali Kheyroddin - *Professor, Faculty of Civil Engineering, Semnan University, Semnan, Iran*

خلاصه مقاله:

Structural systems for tall buildings have undergone an evolution throughout the previous decades.Nowadays, the new structural system used for reinforced concrete tall buildings in which the exteriorshell is the primary structure of the building. This shell located out of the building's primary skeleton and acts as a perimeter tube. The exterior shell has many openings that size and location of openings were carefully coordinated in order to make the wall effective in channeling both gravity and lateral loads down to the base of building. Openings layout in exterior shell creates a diagonal grid to enable its useboth as gravity and lateral support that this structural system is named Exoskeleton. This paper presents analysis of concrete exoskeleton structures under lateral loads and completely presents description of exoskeleton structural system and the manner of its connection to interior structure. In order to predict their seismic response in a building when subjected to sereve ground motion; 20-story structure with plan dimensions of 40 m×30 m has analyzed and designed. Several analytical studies were conducted, then some selected results obtainded and compared. The comparison of analytical results indicate that this system can provide the required lateral stiffness and strength for resisting the lateral loads due to earthquakes. Moreover the focus of this paper will be on some specifications of structures alike drift, the shear absorbing percent, performance of interior core and exterior shell and stresses values

کلمات کلیدی:

Exoskeleton, Reinforced concrete, Seismic behavior, Exterior Shell, The shear absorbing percent