

Seismic Response of Structures of Reinforced Concrete Buildings: Regular and Irregular Configurations

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Abstract : Often, for architectural reasons or designs, several buildings have a non-uniform profile in elevation. Depending on the configuration of the construction and the arrangements structural elements, the non-uniform profile in elevation (the recess) is considered concept of a combination of non-uniform distributions of strength, stiffness, weight and geometry along the height of irregular structures. Therefore, this type of configuration can induce irregular distribution load causing a serious concentration stresses at the discontinuity. This therefore requires a serious behavioral treatment buildings in an earthquake. If appropriate measures are not taken into account, structural irregularity may become a major source of damage during earthquakes. In the past, several research investigations have identified differences in dynamic response of irregular and regular structures. Among the most notable differences are the increments of displacements and ductility applications in floors located above the level of the shoulder and an increase in the contribution of the higher modes. The para -sismiques codes recommend the methods of analysis Dynamic (or modal history) to establish the forces of calculation instead of the static method equivalent, which is basically applicable only to regular structures without major discontinuities in the mass, rigidity and strength along the height. To investigate the effects of irregular profiles on the structures, the main objective of this study was the assessment of the inelastic response, in terms of applications of ductility four types of non-uniform multi-stage structures subjected to relatively severe earthquakes. In the This study, only the parallel responses are analyzed setback.

Keywords : buildings, concentration stresses, ductility, ductility, designs, irregular structures

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