

Comparison investigation safety seismic reinforce concrete structures with by using 2800 code, ATC-40 provision and YPS method.

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Abstract

In this research a number of structural models consist of reinforce concrete moment structures with 1, 5, 10 floors by using the spectrum method (2800 code) is analysed and designed. Then with nonlinear static pushover analysis and using the methods of FEMA-356 and ATC-40 the point and level of the performance of the structures is achieved respectively. These structural models are achieved by the new method of YPS control and the level of the performance of them is specified.

In the next part, the two dimensional frames (the main and the branch) with the same designed profiles have been analysed independently and their performance level is achieved with the ATC-40 and FEMA-356 provisions. There by the Drain-2DX program, the pushover analysis has been done over the structures and therefore the rotation hinges and the related performance level in the performance point is achieved.

The performance level of these two dimensional models is achieved by the new YPS method. At last, the seismic safety level of structures (designed by using the Iranian code) is achieved by using two ATC-40, FEMA-356 provisions and YPS method. Also we study the valid methods in the earthquake Engineering which can satisfy the safety of these structures.