

عنوان مقاله:

Rational Suggestions for Vertical Component Requirement in ۲۸۰۰ Iranian Standard for Near-Fault Areas

محل انتشار:

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خلاصه مقاله:

The validity of ASCE 7-05 standard guidelines for considering the effects of vertical component of earthquake on the response of moment resistant steel buildings for use in Iranian code were re-evaluated. Three steel buildings and ۹ near-fault recorded earthquake motions were considered. It was shown that both ASCE and ۲۸۰۰ standards overestimate the displacement of buildings and the vertical component of earthquake has no significant effect on the maximum displacement of stories. It has also been observed that using the ASCE equation for considering the vertical component of earthquake in far-fault areas can lead to an overestimation of axial force of columns, but in near-fault areas it can lead to a rather good estimation of axial force of columns. In light of this research, it can be found that loading patterns of Iranian code (with or without considering ASCE equation) can overestimate moment of columns and using the ASCE equation in Iranian code for near-fault analyses is recommended.

کلمات کلیدی:

Vertical component, Steel Buildings, Nonlinear Analysis, Time-History Analysis, Push-over Analysis

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