

عنوان مقاله:

EVALUATION OF FEMA P-58 METHOD FOR ESTIMATING RESIDUAL DRIFT DEMANDS IN BUCKLING RESTRAINED BRACED FRAMES

محل انتشار:

هشتمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1398)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

Evaluating the performance of structures after an earthquake is a very important issue for structural engineers. One of the ways for performing this evaluation is estimating residual drifts due to earthquake. Buckling Restrained Braced Frames (BRBFs) have low post-yield stiffness of brace core, and therefore may experience large residual drifts after moderate to severe ground motions. In this study, the accuracy of FEMA P -58 method is evaluated for estimating residual drift demands in BRBFs. For this purpose, two BRBFs having two and six stories height are designed according to ASCE 7-10, AISC 360-10 and AISC 341 -10, and three strain hardening ratios (i.e., $\alpha=0.003$, 0.01 and 0.02) are assumed for each of them. Then, nonlinear dynamic analyses are performed on the BRBFs using a set of 78 far-field ground motion records scaled to five different intensity levels. After performing the analyses, residual drifts are computed for the BRBFs, and the accuracy of the method considered for estimating residual drifts is evaluated.

کلمات کلیدی:

FEMA P-58, Residual drift, Buckling restrained braced frames, Nonlinear dynamic analysis, Strain hardening ratio

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