

Performance Based Earthquake Engineering in a Moderate-Seismicity Region: South Korea

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ABSTRACT

Performance-Based Earthquake Engineering (PBEE) has been developed mainly for the region of high seismicity for the last three decades. Though abundant information on PBEE is available throughout the world, the application of this PBEE to the moderate-seismicity regions such as their maximum considered earthquake being less than magnitude 6.5 is not always straightforward because some portion of the PBEE may not be appropriate in these regions due to the environment different from the high-seismicity regions. This paper reviews the state-of-art in PBEE briefly. Then, the seismic hazard in moderate-seismicity regions including Korean Peninsula is introduced with its unique characteristics. With this seismic hazard, representative low-rise RC MRF structures and high-rise RC residential wall structures are evaluated by using PBEE approach. Also, the range of forces and deformations of the representative building structures in Korea is given. Based on these reviews, some ideas for the use of PBEE to improve the state-of-practice in moderate-seismicity regions are proposed.

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