

ABSTRACT

Seismic provision for Thailand was promulgated since 1997 as the Ministerial Regulation No. 49. This regulation was revised recently as the 2007 version of the Ministerial Regulation for earthquake resistant design for buildings. The major amendment of this revision is the imposition of the controlled area extended to cover Bangkok and its vicinity. In the same year, the Department of Public Works and Town & Country Planning issued the design standard for earthquake resistant design for buildings, DPT standard 1301-50. This standard provides the consideration of building configuration for seismic design and the detailing requirements for reinforced concrete building at the limited ductile performance. The consequence challenges to Thai engineers are to understand the basis in these seismic provisions, and the impact of the application. This research examines detailing requirements in the DPT standard 1301-50 and discusses relating to the model standards which are from American Concrete Institute (ACI) and Uniform Building Code (UBC) and the normal practice in Thailand from Engineering Institute of Thailand (EIT) standard. The cost impact of the application of these seismic design requirements were comprehensively investigated through 3 buildings with total 24 study cases. The results show that the required reinforcement and the construction cost for structure are increased approximately 3-9%, and 2-5%, respectively for buildings in the monitoring zone. For buildings founded on very soft soil in seismic zone 1 and buildings on stiff soil in seismic zone 2, the required reinforcement and the construction cost for structure are increased approximately 20-25%, and 10-15%, respectively.