

Comparative Study of a Set of Codes for the Seismic Design of Buildings

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Abstract

A comparative study of codes from seismically active regions of various countries is presented covering US, European, Italian, Greek, Romanian, Brazilian and Bulgarian Standards. The study focuses on the comparison of certain critical points: recurrence periods; seismic zonation and design ground motion parameter values; shape of the response spectrum; soil amplification; importance levels; seismic force-resisting systems; behavior factors; structural irregularities; story drift limits; procedures for seismic analysis. Following the comparison of the text of the codes, their application on the seismic design of an ordinary reinforced concrete structure is presented. The structure is subjected to the seismic input according to the above set of codes and obtained results are compared highlighting the differences between the codes. Overall this study aims to assist to the future improvement of the various seismic standards.

Keywords: Seismic codes, seismic analysis, comparative analysis