

COMPARATIVE STUDY OF INTERNATIONAL MAJOR CODES FOR THE SEISMIC DESIGN OF BUILDINGS

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SUMMARY

The Task Group 1.1 of IABSE has proposed studies of comparisons among seismic codes, in order to find out discrepancies and similarities among them. The idea of the study is to select major international seismic design codes to be analyzed and compared among them. A comparative study of codes from seismically active regions of various countries is presented herein covering European, United States, Brazilian, Bulgarian, Canadian, French, Italian, Greek, Japanese, Mexican, New Zealander, Portuguese and Turkish codes and National Annexes of Eurocode 8. The study is focused in the criteria for the design of conventional (residential and commercial) buildings, analyzing some critical topics. A prototype reinforced concrete building is analyzed, considering all the codes under analyses and main results derived from the seismic design are compared.

Keywords: *Seismic codes, seismic analysis, comparative analysis.*

1. INTRODUCTION

The Task Group 1.1 (TG 1.1 - “Improving Seismic Resilience of Reinforced Concrete Structures”) of IABSE has proposed studies of comparisons among seismic codes, in order to find out discrepancies and similarities among them, and to identify and fulfil grey areas of knowledge. The idea of the study is to select major international seismic design codes to be analyzed and compared among them.

Therefore, a comparative study of codes from seismically active regions of various countries is presented herein, covering European [1], United States [2], Brazilian [3], Canadian [4], French [5], Greek [6], Italian [7], New Zealander [8], Turkish [9], Japanese [10], Mexican [11], Bulgarian [12] and Portuguese [13] codes.

The study is focused on criteria for the design of conventional (residential and commercial) buildings, analyzing some critical topics, regarding the definition of:

- recurrence periods;
- seismic zonation and design seismic ground motion values;
- shape of the design response spectra;
- soil amplification;