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Evaluation of seismic safety for engineering sites

工程场地地震安全性评价

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1.Structure and drafting rules for standardization documents" Drafting. This document replaces GB 17741-2005 "Evaluation of Seismic Safety of Engineering Sites". Compared with GB 17741-2005, in addition to structural adjustment and In addition to editorial changes, the main technical changes are as follows:

--- Changed the classification of engineering site seismic safety assessment work, describing the determination of work level and work content (see 4.1, 4.2, Chapter 4 of the.2005 edition);

--- Changed the requirements for regional seismic tectonic investigation and evaluation (see 5.3,

5.3 of the.2005 edition);

--- Changed the requirements for identification of fault activity in the near field (see 6.3,

6.3 of the.2005 edition);

--- Added the assessment of fault activity in the vicinity of the site (see Chapter 7);

--- Changed the requirements for the survey of earthquake engineering geological conditions at the project site (see 8.1, 8.2, 8.3, 8.4,.2005 edition 7.1, 7.3, 12.6.2);

--- Changed the content and calculation requirements of deterministic analysis of seismic hazard (see 10.1, 10.2, 10.3, 9.1, 9.2,

9.3 of the.2005 edition);

--- Changed the contents and calculation requirements of earthquake hazard probability analysis (see 11.1, 11.2, 11.3, 11.4, 11.5, 11.6,.2005 edition 10.1, 10.2, 10.3, 10.4, 10.5, 10.6);

--- Deleted "Regional seismic zoning", "small seismic zoning", "Seismic peak acceleration review" (see Chapter 11, Chapter.2005 of the.2005 edition) 13, 14);

--- Changed the content and requirements for determining site seismic parameters (see 12.1, 12.2, 12.3, 12.4, 12.5, 12.1, 12.2, 12.3, 12.4,

1 Scope

GB 17741-2025 is the Chinese national standard on evaluation of seismic safety for engineering sites, in the field of construction materials and building. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 28 February 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 September 2025. Classification: ICS 91.120.25, CCS P 15. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the classification and content of the work of seismic safety assessment of engineering sites, regional and near-field seismic activity and earthquake Structural evaluation, fault activity evaluation near the site, seismic engineering geological condition survey of the project site, determination of earthquake motion prediction equations, The working rules and technical indicators of potential and probabilistic earthquake hazard analysis, site ground motion parameter determination, site earthquake geological hazard evaluation, and Requirements for writing earthquake safety assessment reports. This document is applicable to the project site selection, seismic fortification

requirements, earthquake disaster risk assessment and other work involved in the project site. Earthquake safety assessment.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB 17740 Provisions on earthquake magnitude

GB/T 18207 (all parts) Terminology for earthquake disaster prevention and reduction

GB 18306 China Earthquake Motion Parameter Zoning Map

GB/T 36072 Active fault detection

GB/T 50011 Building seismic design standard

GB 50021 Geotechnical Engineering Investigation Code

GB/T 50269 Specification for testing dynamic characteristics of foundation JGJ

83 Code for geotechnical engineering investigation in soft soil areas

3 Terms and definitions

The terms and definitions defined in GB 17740, GB/T 18207 (all parts), GB 18306, GB/T 36072 and the following terms and definitions apply to this document.

3.1 The probability that the project site will encounter an earthquake intensity value or ground motion parameter value greater than or equal to a given threshold.

3.2 Fault source faultsource In earthquake hazard analysis, the fault plane characterizes the areas where the earthquake source and rupture surface of the fault may be distributed in the future.

3.3 seismic belt A zone where seismic activity is closely related to seismic tectonic conditions.

3.4 A physical parameter that characterizes the ground motion caused by an earthquake.