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Standard for classification of seismic protection of building constructions

建筑工程抗震设防分类标准

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National Standard of the People's Republic of China

Standard for Classification of Seismic Protection of Building Constructions

GB 50223-2008

Chief Development Department:
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Announcement on Publishing the National Standard "Standard for Classification of Seismic Protection of Building Constructions"

Standard for Classification of Seismic Protection of Building Constructions has been approved as a national standard with a serial number of GB 50223-2008, and shall be implemented from the date of promulgation. In the Standard, articles 1.0.3, 3.0.2 and 3.0.3 are compulsory articles, and must be implemented strictly. The former "Standard for Classification of Seismic Protection of Building Constructions" GB 50223-2004 shall be annulled on the same date.

This standard is organized by the Standards and Quotas Department of the Ministry of Housing and Urban-rural Development, and is published by China Architecture & Building Press (CABP).

Ministry of Housing and Urban-rural Development of the People's Republic of China

July 30, 2008

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Foreword

According to the requirements of the Document Jianbiao [2008] No. 65 issued by the Ministry of Construction, this standard is revised from the former standard "Standard for Classification of Seismic Protection of Building Constructions" GB 50223-2004, by China Academy of Building Research (CABR) together with related design, research and teaching organizations.

In the revision process of the standard, the experience and lessons about Fenchuan earthquake was summed up through preliminary investigation: after Tangshan earthquake (1976), the Ministry of Construction made the provision that the earthquake-resistant design of building construction shall be taken out based on degree 6 and the non-collapse protection target that the actual earthquake protection is one-degree higher than the normal fortification intensity. Fenchuan earthquake indicated that buildings, that are designed, constructed and used strictly in accordance with the current provision, occur no collapse and failure when the buildings suffer from the earthquake effect that is one-degree higher the local fortification intensity. The lives of the people have been protected effectively.

With a view to the rapid development of our country, based on that "for person-intensive public facilities such as school, hospital, gymnasium, museum, culture center, cinema, theater, shopping plaza, and transport junction, the design shall be taken out in accordance with the requirement of earthquake protection higher than local building construction's, to improve the earthquake protection capacity", increase the earthquake protection type of some buildings; widely ask for opinions of relative design, research and teaching organizations, as well as earthquake resistance administrative authority; carry out discussion, revision and supplement many a time; and finalize the standard by the examination.

The revision holds over the classification principle of edition 1995 and edition 2004: whereas, all buildings shall meet the requirements of earthquake protection target "No collapse in large earthquake", buildings that shall be designed based on the earthquake protection degree one-degree higher than the normal buildings are limited within smaller range, and measures to improve the collapse and deformation resistance shall be required.

The revised standard is consisted of 8 chapters totally. The main contents of the revision are as follows:

1. Adjust definition and intension of the categories.

2. Specially strengthen the protection for the infants under accidents like earthquake.

3. Expand the range of person-extensive building; increase the earthquake resistance that person-extensive public facilities such as hospital, gymnasium, museum cultural center, library, cinema, theater, shopping plaza, and transport junction shall comply with.

4. Add the requirements on earthquake refuge building and electronic data centre.

5. Further definite that construction names listed in the standard are instance names, and for construction not listed on the standard, the earthquake protection type may be identified according to the instance construction similar in function and scale.

Local part of the standard may be revised according to concrete requirements in the future, and relevant revision information and content will be published on "Standardization of Engineering Constructions".

China Academy of Building Research - Earthquake Engineering Seismo Technoloy

Research Center is responsible for the specific explanation of the standard. All relevant organizations are kindly requested to sum up and accumulate your experiences in actual practices during the process of implementing this standard. The relevant opinions and advice, whenever necessary, can be posted or passed on to Handling Crew of "Standard for Classification of Seismic Protection of Building Constructions", China Academy of Building Research (No.30, Northern Third Ring Road (East), Beijing, China 100013; E-mail: ieecabr@cabr.com.cn).

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1. General Provisions

1.0.1 This standard is formulated with a view to defining protection type and earthquake-resistant design, and corresponding earthquake protection standard, and relieving seismic hazard effectively.

1.0.2 The standard is applicable to earthquake protection classification of building constructions within earthquake protection area.

1.0.3 All building constructions in earthquake protection area shall be identified in the earthquake protection type.

For construction, renovation and extension, the earthquake protection type shall not be higher than the specification of this standard.

1.0.4 The establishment of professional standard for classification of seismic protection of building constructions shall comply with the classification principles specified in this standard.

For building constructions with special requirement but not listed with special requirements in the standard, the earthquake protection classification shall comply with the special specifications.

2. Terms

2.0.1 Seismic Fortification Category for Structures

The classification of seismic fortification type is taken out for all classes of building constructions based on the earthquake relief, and casualties, direct/indirect economic loss, social consequence that may be caused by the buildings suffering from earthquake.

2.0.2 Seismic Fortification Intensity

It is referred to an earthquake intensity that is approved as a base of earthquake protection in a region in accordance with the country-specified authority. Generally, it is the earthquake intensity which the probability exceeds 10% within 50 years.

2.0.3 Seismic Fortification Criterion

It is referred to the scale to judge the Seismic Fortification requirement, which is identified accordance with Seismic fortification intensity or design earthquake motion parameters and construction Seismic Fortification type.

3. Basic Provisions

3.0.1 The classification of construction Seismic Fortification type shall be taken out in accordance with following factors:

(1) Casualties, direct/indirect economic loss and social consequence caused by construction damage.

(2) Town scale, profession characteristic and industrial/mining enterprises scale.

(3) Influences of construction functions failure on the range of overall influence, earthquake relief and recovery difficulty.

(4) If blocks of the construction are conspicuously different in importance, the seismic fortification type may be categorized by blocks. The Seismic Fortification of lower position shall not be lower than that of the upper position.

(5) For same constructions for different industries, the Seismic Fortification level may be

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