

NATIONAL STANDARD  
OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准

Standard for Quality Control of Concrete

混凝土质量控制标准

GB 50164-2011

Chief Development Department: Ministry of Housing and Urban-Rural Development  
of the People's Republic of China

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Development of the People's Republic of China**

No. 969

**Announcement on Publishing the National Standard of "Standard for Quality Control of  
Concrete"**

"Standard for Quality Control of Concrete" has been approved as a national standard with a serial number of GB 50164-2011 and shall be implemented on May 1, 2012. Thereinto, Article 6.1.2 is a compulsory provision and must be enforced strictly. The original "Standard for Quality Control of Concrete" GB 50164-92 shall be abolished simultaneously.

Authorized by the Standard Rating Research Institute, this standard is published and distributed by China Architecture and Building Press.

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

April 2, 2011

## Foreword

According to the requirements of Document Jian Biao [2005] No. 84 issued by the former Ministry of Construction-"Notice on Printing and Publishing the Development and Revision Plan of National Engineering Construction Standards in 2007 (the first batch)", this standard is revised from the former standard of "Standard for Quality Control of Concrete" GB/T 50164-92 by Beijing Centergate Development and Construction Co., Ltd. jointly with organizations concerned.

During the process of compiling this standard, the compilation team examined and finalized based on extensively soliciting for opinions by wide investigation and study, earnestly summarizing the practical experience and making reference to the relevant international standards and foreign advanced standards.

This standard covers 7 chapters and 1 appendix with main technical content: General Provisions, Raw Material Quality Control, Concrete Performance Requirements, Mix Proportion Control, Production Control Level, Production and Construction Quality Control, and Concrete Quality Inspection.

Main technical content of this standard revision is: increasing quality control index such as chloride ion content; revising classification of concrete mixture consistency; supplementing concrete durability quality control index; revising strength standard deviation requirements of concrete production control; revising allowable deviation of measurement result for concrete composition material; revising concrete steam curing quality control index; adding concrete quality inspection, etc.

The provisions printed in bold type in this standard are compulsory and must be enforced strictly.

The Ministry of Housing and Urban-Rural Development is in charge of the administration of this standard and the explanation of the compulsory provisions; China Academy of Building Research is responsible for the explanation of specific technical contents. During the process of implementing this standard, the relevant opinions and advice, whenever necessary, can be posted or passed on to the China Academy of Building Research (address: No. 30, North 3rd Ring East Road, Beijing, China, 100013).

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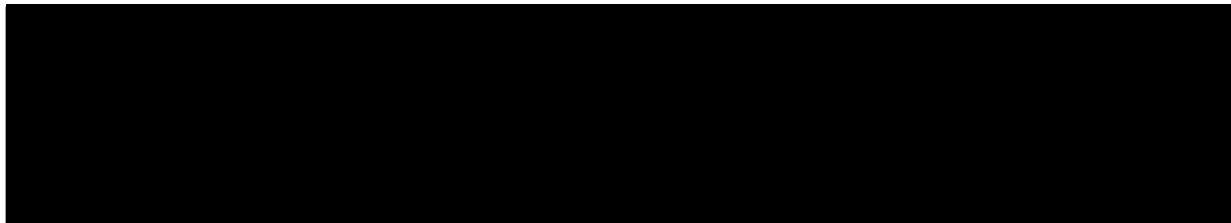
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## **1 General Provisions**

**1.0.1** This standard is formulated in order to strengthen concrete quality control, promote concrete technical progress and ensure concrete work quality.

**1.0.2** This standard is applicable to normal concrete quality control of construction engineering.

**1.0.3** In addition to meeting the requirements of this standard, the concrete quality control shall also meet the requirements of the relevant national current standards.

## **2 Raw Material Quality Control**

### **2.1 Cement**

**2.1.1** The selection of cement variety and strength grade shall be determined according to design, construction requirements and project environment. As for normal concrete for general building structure and precast member, common portland cement should be adopted; high strength concrete and the concrete with freezing resistance requirements should adopt portland cement or ordinary portland cement; as for concrete work with requirements for preventing concrete alkali-aggregate reaction should adopt the cement with alkali content less than 0.6%; mass concrete should adopt medium and low heat portland cement or low heat portland slag cement. The cement shall meet the relevant requirements of the current national standard "Common Portland Cement" GB 175 and "Moderate Heat Portland Cement-Low Heat Portland Cement-Low Heat Portland Slag Cement" GB 200.

**2.1.2** Main control items for cement quality shall include setting time, stability, mortar strength, magnesium oxide and chloride ion content; the main control items for the cement with alkali content less than 0.6% shall also include alkali content; the main control items of medium and low heat portland cement or low heat portland slag cement shall also include hydration heat.

**2.1.3** The application of cement shall meet the following requirements:

- 1 The cement produced by new dry process kiln should be adopted.
- 2 The variety and the mixing amount of composite materials in cement shall be indicated.
- 3 The temperature of the cement used for producing concrete should not exceed 60°C.

### **2.2 Coarse Aggregate**

**2.2.1** The coarse aggregate shall meet the requirements of the current professional standard "Standard for Technical Requirements and Test Method of Sand and Crushed Stone (or Gravel) for Ordinary Concrete" JGJ 52.

**2.2.2** Main control items for coarse aggregate quality shall include grain composition, elongated flaky particle content, silt content, clod content, crushing strength index and solidity; the main control items of coarse aggregate used for high strength concrete shall also

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