



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 50666-2011

**Code for construction of concrete structures
(English Translation)**

Issued on: July 29, 2011

Implemented on: August 1, 2012

Issued by: Ministry of Housing and Urban-Rural Development of PRC;

Table of Contents

1 General Provisions
2 Terms
3 Basic Requirements
4 Formwork
5 Reinforcement
6 Prestressed Concrete
7 Concrete Production and Transportation
8 Cast-in-situ Concrete
9 Precast Concrete
10 Construction in Cold, Hot and Rainy Weather
11 Environmental Protection
Appendix A -- Characteristic Value of Loads Acting on Formwork
Appendix B -- Nominal Diameter, Nominal Sectional Area, Calculation Sectional Area and Theoretical Weight of Common Reinforcement
Appendix C -- Minimum Splicing Length of Longitudinal Reinforcement
Appendix D -- Calculation and Measurement Method for Elongation of Prestressed Tendon
Appendix E -- Testing Method for Prestressing Loss Due to Friction
Appendix F -- Specification of Concrete Materials
Explanation of Wording in This Code
List of Quoted Standards
1 General Provisions
1.0.1 This Code is formulated with a view to implementing the national technical and

1 General Provisions

1.0.1

This Code is formulated with a view to implementing the national technical and economic policies, ensuring the engineering quality, and realizing advanced technology, reasonable process, resources conservation and environmental protection during the construction of concrete structures.

1.0.2 This Code is applicable to the construction of concrete structures in building

engineering, not to the construction of lightweight aggregate concrete and special concrete.

1.0.3 This Code contains the basic requirements for the construction of concrete

structures. When there are special requirements for the construction stated in the design documents, the construction shall also be implemented in accordance with the design documents.

1.0.4 Construction of concrete structures shall not only meet the requirements of this

Code but also comply with those in the current relevant standards of the nation.

2.0.1 Concrete structure

The structure mainly made of concrete, including plain concrete structure, reinforced concrete structure and prestressed concrete structure, which may be classified into cast-in-situ concrete structure and precast concrete structure according to the construction method.

2.0.2 Cast-in-situ concrete structure

The concrete structure that is made by erecting formwork in situ and integral casting, hereinafter referred to as cast-in-situ structure.

2.0.3 Precast concrete structure

The concrete structure that is made by assembling and connecting the precast concrete members or parts, hereinafter referred to as precast structure.

2.0.4 Workability of concrete

The features that shall be possessed of by the concrete mixture in order to meet the construction operation requirements and ensure the concrete uniformity and compactness, mainly including flowability, cohesiveness and water-retaining property.

It is hereinafter referred to as workability of concrete.

2.0.9 Construction joint

It refers to the joint formed by segmented placing according to the design requirements or the construction demands. The joints will be formed when concrete continues to be placed after the previously-placed concrete reaches a certain strength.

2.0.10 Post-cast strip

The concrete strip in certain width, placed after a certain time, which is reserved in such structures as beam, slab (including foundation slab) and wall, in order to adapt to the influence of such factors as the ambient temperature changes, concrete shrinkage and structural differential settlement.

3.1 Construction Management

3.1.1

The construction organizations for the concrete structures shall have corresponding qualification and establish corresponding quality management system as well as construction quality control and inspection system.

3.1.2 Organization structuring and manning of construction project department shall

meet the construction management requirements of concrete structures. Construction operation personnel shall receive training to acquire the basic knowledge and skills required for their respective posts.

3.1.5 The construction organization shall establish specific construction schemes according to the requirements of the design documents and construction organization design, which shall be implemented after examined and approved by the supervision organization.

3.1.6 Before construction of concrete structures, the construction organization shall

establish emergency plan upon the contingent hazards, disasters and emergencies at the construction site. Technical disclosure and training shall be carried out for the emergency plan, and drilling shall be carried out if necessary.

3.2 Construction Technology

3.2.1

Before construction of concrete structures, the construction process shall be determined according to the structure types, characteristics and construction conditions, and each preparation work shall be completed.

3.2.2 Construction process monitoring should be carried out and construction control

measures shall be timely adjusted for the concrete structures that have complex shape, relatively large height or span, complex subgrade conditions and particular construction

environment conditions.

4.1.1 Special construction scheme shall be prepared for the formwork.

Technology

demonstration shall be carried out for the special construction schemes of tall formwork support and such tool-type formwork as sliding formwork and creeping formwork.

4.2 Materials

4.2.1

Technical indexes of formwork and support materials shall meet the requirements of the current relevant standards of the Nation.

4.2.2

Light-weight, high-strength and durable materials should be used in the formwork and support. The standard approved products should be selected as the connection.

4.3.1 Types and construction of formwork and support shall be determined according

to such conditions as engineering structure type, load, subsoil category, construction equipment and material supply.

4.3.4 As for the design of formwork and support, the loads under different operating conditions and their combinations shall be calculated according to the actual conditions. Characteristic value of each load may be determined according to Appendix A of this Code.

4.3.10 Height-width ratio of support should not be greater than 3, otherwise the overall

stability measures shall be strengthened.

4.3.13 In the case of continuous formwork erecting for multi-layer floor, it shall be analyzed that the influence of load transfer between multi-layer floors on the support and floor structure.

4.3.14 In the case of support column or vertical formwork supported on the soil layer, the soil layer shall be checked according to the relevant requirements of the current national standard "Code for Design of Building Foundation".

4.4 Fabrication and Installation

4.4.1

Formworks shall be processed and fabricated according to the drawings.