



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

GB 50669-2011

**Code for Construction and Acceptance of Reinforced Concrete
Silos**

钢筋混凝土筒仓施工与质量验收规范

(English Translation)

Issued on: February 18, 2011

Implemented on: May 1, 2011

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

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Explanation of Wording in This Code

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1 General Provisions

1.0.1 This code is formulated with a view to improving the construction level of

1 General Provisions

1.0.1

This code is formulated with a view to improving the construction level of reinforced concrete silo works, regulating the quality acceptance of reinforced concrete silo works and achieving advanced technology, reliable quality, safety, usability, economy and rationality.

1.0.2

This code is applicable to the construction and quality acceptance of circular or polygonal cast-in-place reinforced concrete silos storing bulk materials and compressed air mixing silo of mixed powders.

1.0.3

The requirements for construction quality acceptance in the contract agreement document and engineering technical document adopted for the construction of reinforced concrete silo works shall not be less than the requirements of this code.

1.0.4 New technologies, new processes, new equipment and new materials

shall be popularized in the construction of reinforced concrete silo works.

1.0.5 The construction of reinforced concrete silo works shall comply with the management provisions of relevant OHS and environmental protection.

1.0.6 This code shall be used together with the current national standard

"Unified Standard for Constructional Quality Acceptance of Building Engineering" GB 50300.

1.0.7 The construction and quality acceptance of reinforced concrete silo works shall not only comply with this code but also comply with those in the relevant current national

standards.

2.0.1 Reinforced concrete silo

The circular, square, rectangular, polygonal and other geometric shape upright reinforced concrete vessels storing bulk materials are referred to as silos; the part holding materials is the silo body.

2.0.2 Silo-top

The structure to seal the top surface of the silo body.

2.0.3 Silo-wall

The vertical wall of silo body directing contact the stored material and bearing the its lateral pressure.

2.0.4 Supporting wall

The vertical wall with same plane as the silo body and supporting the silo body.

Silo-wall together with supporting wall is called cylinder.

2.0.5 Silo-bottom structure

The concrete structure on silo body bottom to support cone, filler, stored material and form a hopper.

2.0.6 Cone

The conical structure inside the silo body to homogenize and decompress the stored materials.

2.0.7 Hopper

The vessel at the lower part of silo body to discharge the stored materials.

2.0.8 Filler

The filler material used to form the discharging slope at the silo-bottom.

2.0.9 Liner

The structural layer used for the protection and abrasion resistance of parts directly contact with stored materials, such as silo-bottom, hopper, silo-wall, etc., and helping for the flow of discharged materials.

4.1 General Requirements

4.1.1

The foundation works construction must be provided with engineering geology investigation data. Before construction, detailed distribution conditions of engineering geology, underground pipelines, underground obstructions and cultural relics shall be grasped and the type, distribution and structure of adjacent buildings and underground facilities shall be learnt about.

4.1.2

The foundation pit supporting form shall be determined comprehensively by combining the factors such as hydrological geology conditions, ground load, construction duration, etc. During the construction, the foundation pit side slope shall be monitored according to the requirements and any discovered abnormal condition shall be treated timely.

4.1.3 Special job file shall be compiled for the construction of pile foundation

works; in the complex geological areas, the engineering geology investigation data required for construction should be supplemented according to the actual demand to determine the reasonable comprehensive piling construction scheme.

4.1.4 Quality inspection shall be carried out for non-natural foundations, such

as pile foundation, composite foundation, artificial replacement foundation, etc., according to the design requirements and the relevant requirements of current national standard "Code for Acceptance of Construction Quality of Building Foundation" GB 50202.

4.1.5 If abnormal condition of foundation occurs during the construction process, it shall be treated according to the relevant requirements of the current professional standard "Technical Code for Ground Treatment of Buildings" JGJ 79.

4.2 The Ground and Pile Foundation Work

4.2.1 Foundation subsoil must be inspected for foundation treatment works and composite foundation; and concealment acceptance procedures shall be handled before the construction of replacement layer and foundation works.

4.2.2 The pile shall be tested before the construction of pile foundation according to the engineering design requirements and the requirements of the current professional standard "Technical Code for Testing of Building Foundation Piles" JGJ 106.

4.2.3 As for the pile foundation works adopting pile driving (sinking) process for replacement of reinforcement.

4.4.2 The position, spacing, connection mode and anchoring length of reinforcement shall meet the design requirements as well as the relevant requirements of current national