



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

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Code for design of masonry structures

砌体结构通用规范

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1 General Rules

1.0.1

In order to ensure the quality and safety of masonry structure engineering, implement the policies of energy saving, land saving and promotion of new masonry materials, protect the ecological environment, ensure the safety of life, property and personal health of the people, and improve the sustainable development level of masonry structure engineering, this Code is formulated.

1.0.2

Masonry structure engineering must implement this Code.

1.0.3

Whether the technical methods and measures adopted in the project construction meet the requirements of this Code shall be judged by the relevant responsible parties. Among them, innovative technical methods and measures shall be demonstrated and meet the performance requirements in this Code.

2 Basic Provisions

2.0.1

Masonry strength shall be tested according to the masonry standard test method; and the construction quality control level of the test shall be clarified; and the average value, variation coefficient and standard value of masonry strength shall be determined by mathematical statistical analysis methods.

2.0.2

The standard value of masonry strength shall be determined according to the 0.05 percentile value of its probability distribution.

2.0.3

The variation coefficient of masonry strength shall be adopted according to Table 2.0.3.

For the variation coefficient of new masonry materials, when the calculated value is less than the value listed in Table 2.0.3, the value in the table shall be taken; when the calculated value is greater than the value listed in Table 2.0.3, the actual calculated value shall be taken.

2.0.4

The design value of masonry strength shall be calculated and determined by dividing the standard value of masonry strength by the partial coefficient of material properties of masonry structures; and the partial factor for property of material of masonry structures shall be determined according to the construction quality control level. When the construction quality control level is Level-A, Level-B, and Level-C-, the partial factory for property of material shall take 1.5, 1.6 and 1.8, respectively.

3.2 Bulk materials

3.2.1

In the masonry structure, blocks made of waste bricks and tiles, concrete blocks, muck and other wastes as the main materials shall be promoted and applied.

3.2.2

The selected block materials shall meet the requirements of compressive strength grade and variation coefficient; and the porous bricks and autoclaved ordinary bricks used for

load-bearing walls shall still meet the requirements of flexural indicators.

3.2.3

The selected non-sintered porous blocks shall meet the requirements of minimum wall thickness and minimum rib thickness; and the selection of load-bearing porous bricks and small blocks shall meet the upper limit requirements of porosity.

4.1 General

4.1.1

The masonry structure shall be designed according to the limit state of bearing capacity; and structural measures shall be taken according to the characteristics of the masonry structure to meet the requirements of the limit state of normal service and durability.

4.1.2

The masonry structural members shall, according to their stress, calculate the bearing capacity such as axial compression, eccentric compression, local compression, bending and shearing, etc.; and the members shall be ensured to have sufficient strength to meet safety requirements.

4.2 Multi-story and single-story masonry structures

4.2.1

The single-story masonry structure bearing the crane load shall adopt reinforced masonry structure.

4.2.2

For the load-bearing structure of the hall roof of a single-story open house, brick columns shall not be used in the following cases.

4.2.3

Unreinforced masonry members shall not be used for load-bearing wall beams in multi-story masonry structure buildings to support. The wall beam design shall include the structural requirements of the total height of the wall, span, height-span ratio of the wall and joist, opening size and opening position.

4.3 Bottom frame-seismic wall masonry structure

4.3.1

The seismic wall structure at the bottom of a bottom frame-seismic wall masonry structure building shall meet the following requirements.

4.3.2

The frame columns at the bottom of a bottom frame-seismic wall masonry structure building shall meet the following requirements.

4.3.3

The structure of the concrete joist at the lower part of the wall of a building with a bottom frame-seismic wall masonry structure shall meet the following requirements.

4.3.4

The floor slab structure of the building with bottom frame-seismic wall masonry structure shall meet the following requirements.

4.4 Reinforced block masonry seismic wall structure

4.4.1

Reinforced block masonry seismic walls shall be filled with perforated concrete.

4.5 Infill walls

4.5.1

When the infill walls are arranged non-uniformly, the adverse impact of the difference in mass and stiffness on the seismic resistance of the main structure shall be considered.

4.5.2

The action of the infill wall shall include the self-weight of the wall, the weight of the attachments on the wall, wind load and earthquake.

4.5.3

Infill walls shall meet the stability requirements under the influence of wind load and earthquake action.

5.1 Construction

5.1.1

When the non-sintered blocks are built, the shrinkage control requirements after the blocks are built on the wall shall be met.

5.1.2

The blocks that need to be wet before masonry shall be properly poured (sprayed) with water, and dry bricks or bricks that are saturated with water shall not be used for masonry.

5.1.3

When laying masonry, the corners of the wall and the intersections of vertical and horizontal shall be laid at the same time; brick columns shall not adopt the wrapping method.