

ICS 91.040.20
CCS P 34



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

GB/T 50543-2019

**Standard for design of energy conservation of building and
sanitary ceramic plant**

建筑卫生陶瓷工厂节能设计标准

(English Translation)

Issued on: January 1, 1970

Implemented on: October 1, 2019

**Issued by: Ministry of Housing and Urban-Rural Development of the
People's Republic of China;
State Administration for Market Regulation**

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1 General

1.0.1

This standard is formulated to implement the "Energy Conservation Law of the People's Republic of China" and other laws and regulations, guidelines and policies, industrial policies, and technical and economic policies related to energy conservation in the design of architectural sanitary ceramics factories.

1.0.2

This standard applies to the energy-saving design of newly built, rebuilt and expanded building sanitary ceramics factories.

1.0.3

The construction scale of the building sanitary ceramics factory should conform to the national industrial policy, and the equipment selection should give priority to energy-saving products, and the eliminated products announced by the state should not be selected.

1.0.4

For the project application report, fund application report, feasibility study report and preliminary design of the building sanitary ceramics factory construction project, the discussion chapters on project conservation and rational use of land, raw materials, energy, etc. should be written in accordance with national and local energy conservation assessment requirements.

1.0.5

Standardized and serialized products should be selected as ceramic raw materials.

1.0.6

In the design of building sanitary ceramics factories, energy measuring instruments should be equipped, and an energy measurement management system should be established, which should comply with the current national standards "General Rules for Equipping and Management of Energy Measuring Instruments for Energy Consumption Units" GB 17167 and "Energy Measurement for Building Materials Industry Equipment and management requirements" GB/T 24851 related regulations.

1.0.7

In addition to this standard, the energy-saving design of a building sanitary ceramics factory shall also comply with the current relevant national standards.

2 Terms

2.0.1

The comprehensive energy consumption per unit products of architecture and sanitary ceramics During the statistical report period for calculating energy consumption, in the whole production process of architectural sanitary ceramic products, the total amount of various energy actually consumed in the production of architectural sanitary ceramics is used to represent the output of qualified products per unit. The unit of comprehensive energy consumption per unit product of ceramic tiles is kgce/m², and the unit of comprehensive energy consumption per unit product of sanitary ceramics is kgce/t.

2.0.2

the process energy consumption in the production process of building sanitary ceramics, the amount of energy consumed by a unit of semi-finished or finished products in a process, the unit is kJ/m² or kJ/t.

2.0.3

The group of stoneware tiles Ceramic tiles with a water absorption rate (E) greater than 0.5% and less than or equal to 10%, including stoneware tiles, fine stoneware bricks, and stoneware bricks.

3.1 Fuel type and calorific value

3.1.1

Clean fuels such as natural gas, liquefied petroleum gas, light diesel oil, coke oven gas and other gas should be used in the production of building sanitary ceramics. Coal water slurry or coal powder can be used as fuel for spray dryer hot blast stove.

3.1.2

When the measured low calorific value of various fuels cannot be obtained, the calorific value of various energy sources and converted standard coal coefficients shall comply with the provisions in Table 3.1.2.

Table 3.1.2 Calorific value of various energy sources and converted standard coal coefficient

3.2 Design scale of production line

3.2.1

The single-line production scale of new construction, reconstruction and expansion of ceramic tiles shall comply with the provisions in Table 3.2.1.

Table 3.2.1 Production scale of newly built, rebuilt and expanded ceramic brick single line

Note: Except for production lines with special process requirements.

3.2.2

The production scale of newly built, rebuilt and expanded sanitary ceramic single-lines shall comply with the provisions in Table 3.2.2.

Table 3.2.2 Production scale of new construction, reconstruction and expansion of sanitary ceramics single line

Note: The production scale in this table refers to once-fired sanitary ceramics, excluding kilns for re-firing.

4.1 General drawing

4.1.1

The general layout should follow the principle of intensive use of land, rationally use the land on the basis of meeting the requirements of the production process, and define functional divisions.

4.1.2

The project investment intensity, building coefficient and site utilization coefficient, volume ratio, administrative office and living service facility land proportion shall comply with the relevant national regulations on industrial project construction land control indicators.

4.1.3

The parking lot in the factory area should adopt permeable ground. Recycled building materials such as ash bricks should be used for the walls of the factory area.

4.1.4

The layout of the main production workshop should shorten the transportation distance, pipeline length and cable length, and social transportation should be used for transportation outside the factory.

4.1.5

The shape of the building should be simple and orderly, and its orientation should be conducive to natural lighting and natural ventilation. Under the principle of meeting production and fire protection requirements and economical rationality, it is advisable to combine workshops that are closely related to production and have the same or similar production nature, sanitary conditions and architectural features to form a joint workshop.

4.2 Architecture

4.2.1

Building Sanitary ceramics factory buildings should be classified according to the nature of use, functional characteristics and energy-saving requirements, and should meet the requirements of Table 4.2.1.

Table 4.2.1 Classification of building energy-saving design

4.2.2

The energy-saving design of Class A buildings shall comply with the relevant provisions of the current national standard "Design Standards for Energy Conservation of Public Buildings" GB 50189. According to the geographical location of the building, the heat transfer coefficient limit of the envelope structure, the window-to-wall ratio of a single orientation, and the heat transfer coefficient limit of the external window should be