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Technical standard for nearly zero energy buildings

近零能耗建筑技术标准

(English Translation)

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2.0.9 Air tightness of building envelope

The ability of a building to prevent air infiltration when closed. It is used to characterize the amount of unorganized air infiltration of buildings or rooms under normal airtight conditions. The airtightness of buildings is usually tested by differential pressure test, and the airtightness of buildings is characterized by the number of air changes N50, that is, the number of air changes under a pressure difference of 50Pa between indoor and outdoor.

2.0.10 Utilization ratio of renewable energy

The proportion of renewable energy utilization in heating, ventilation, air conditioning, lighting, domestic hot water, and elevator systems to their energy demand.

2.0.11 Comprehensive building energy saving rate building energy saving rate

The difference between the comprehensive value of building energy consumption of the design building and the reference building, and the ratio of the comprehensive value of building energy consumption of the reference building.

2.0.12 Building energy efficiency improvement rate

Under the set calculation conditions, the difference between the comprehensive value of building energy consumption of the designed building excluding renewable energy generation and the comprehensive value of building energy consumption of the reference building f, and the ratio of the comprehensive value of building energy consumption of the reference building.

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2.0.13 Sensible heat exchange efficiency

The ratio of the temperature difference between the fresh air inlet and supply air outlet corresponding to the air volume to the temperature difference between the fresh air inlet and return air inlet.

2.0.14 Total heat exchange efficiency total heat exchange efficiency

The ratio of the enthalpy difference between the fresh air inlet and supply air outlet corresponding to the air volume to the enthalpy difference between the fresh air inlet and return air inlet.

2.0.15 Thermally broken fixer

An anchor bolt that can effectively reduce or block the thermal bridge effect of the anchor through a special structural design.

2.0.16 Water proof and vapor-permeable material

It is a material that seals the gaps on the outside of the building envelope and has both waterproof and water vapor permeation functions.

2.0.17 Air tightness material

A material that seals the gaps inside the building envelope and prevents air from penetrating.

2.0.18 Reference building

When calculating the energy saving rate of the building itself and the overall energy saving rate of the building, it is used to calculate the national standard "Design Standard for Energy Conservation of Public Buildings" GB 50189-2015 and the industry standard "Design Standard for Energy Conservation of Residential Buildings in Severe Cold and Cold Regions" JGJ 26-2010, "Summer Heat Buildings with the comprehensive value of building energy consumption required by JGJ 134-2016, "Design Standard for Energy Conservation of Residential Buildings in Cold Winter Areas" and JGJ 75-2012, "Design Standards for Energy Conservation of Residential Buildings in Hot Summer and Warm Winter Areas".

3 Basic Regulations

3.0.1

Building design should be based on climate characteristics and site conditions, through passive design to reduce building cooling and heating requirements and improve the

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energy efficiency of active energy systems to achieve ultra-low energy consumption, on this basis, use renewable energy to balance and balance building energy consumption Substitution achieves near-zero energy consumption. When conditions permit, zero energy consumption should be achieved.

3.0.2
Indoor environmental parameters and energy efficiency indicators should be constrained indicators, and performance parameters such as enclosure structures, energy equipment and systems should be recommended indicators.

3.0.3
The calculation of building energy efficiency indicators shall comply with the provisions of Appendix A of this standard.

3.0.4
Performance-based design, refined construction technology, quality control and intelligent operation mode should be adopted.

3.0.5
Full decoration should be carried out. The interior decoration should be simple, and should not damage the airtight layer of the enclosure structure and affect the airflow organization, and should use materials and parts that have obtained the green building material label (or certification).

4 Indoor Environmental Parameters

4.0.1
The indoor heat and humidity environment parameters of the main rooms of the building shall comply with the provisions in Table 4.0.1.

4.0.2
The indoor fresh air volume of the main rooms of residential buildings should not be less than 30m3/(h·person). The fresh air volume of public buildings shall comply with the provisions of the current national standard "Code for Design of Heating, Ventilation and Air Conditioning in Civil Buildings" GB 50736.

4.0.3
The indoor noise of residential buildings should not exceed 40dB(A) during the daytime and 30dB(A) at night. The indoor noise level of hotel buildings should comply with the current national standard "Code for Design of Civil Building Sound Insulation" GB 50118.Design Specifications" GB 50118 stipulates high requirements for indoor permissible noise levels.

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5 Energy efficiency indicators

5.0.1
The energy efficiency indicators of nearly zero-energy residential buildings shall comply with the provisions in Table 5.0.1.

5.0.2
The energy efficiency indicators of nearly zero-energy public buildings shall comply with the provisions in Table 5.0.2, and their building energy consumption values may be determined in accordance with Appendix B of this standard.

5.0.3
The energy efficiency indicators of ultra-low energy residential buildings shall meet the requirements in Table 5.0.3.

5.0.4
The energy efficiency indicators of ultra-low energy consumption public buildings shall comply with the provisions in Table 5.0.4.

5.0.5
The energy efficiency indicators of zero-energy residential buildings shall meet the following requirements.

1 The performance index of the building body shall comply with the provisions in Table 5.0.1 of this standard;

2 The building body and surrounding renewable energy production capacity should not be less than the building's annual terminal energy consumption.

5.0.6
The energy efficiency indicators of zero-energy public buildings shall meet the following requirements.

1 The performance index of the building body shall comply with the provisions in Table 5.0.2 of this standard;

2 The building body and surrounding renewable energy production capacity should not be less than the building's annual terminal energy consumption.

6.1 Enclosure structure

6.1.1
The average heat transfer coefficient of non-light-transmitting enclosure structures of residential buildings may be selected according to Table 6.1.1.

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