



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

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Standard for daylighting design of buildings

建筑环境通用规范

(English Translation)

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1 General

1.0.1

In order to ensure the safety and health of the building environment, improve the living environment level and project quality, and meet the people's requirements for the quality of the building environment, this specification is formulated in accordance with relevant laws and regulations.

1.0.2

The design, testing and acceptance of the acoustic environment, light environment, building thermal engineering and indoor air quality of auxiliary office buildings in new construction, reconstruction and expansion of civil buildings and industrial buildings must comply with this specification.

1.0.3

The building environment should meet the basic requirements of human health for sound, light, heat environment and air quality.

1.0.4

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

2.1 General provisions

2.1.1

Noise interference should be reduced indoors in civil buildings, and measures such as sound insulation, sound absorption, noise elimination, and vibration isolation should be taken to make the building acoustic environment meet the functional requirements.

2.1.2

When noise and vibration-sensitive buildings are located in Class 2, Class 3 or Class 4 acoustic environment functional areas, the environmental noise and environmental vibration of the location where the building is located shall be investigated and measured prior to architectural design. The classification of acoustic environment functional areas shall comply with the provisions of Appendix A of this specification.

2.1.3

The noise limits and applicable conditions for the external noise sources of the building to be transmitted to the main functional rooms shall meet the following requirements.

- 1 The noise limit value transmitted from the external noise source of the building to the interior of the main functional room shall meet the requirements in Table 2.1.3;
- 2 The noise limit should be the limit when the doors and windows are closed;
- 3 The day time period should be from 6.00 to 22.00, and the night time period should be from 22.00 to 6.00 the next day. When there are other local regulations on the division of daytime and nighttime, those regulations shall be followed.

2.1.4

The noise limit value transmitted from the building equipment to the main functional room shall meet the requirements in Table 2.1.4.

2.1.5

The Z-vibration level limit and applicable conditions in the main functional room shall comply with the following regulations.

1 The Z-vibration level limit in main functional rooms shall comply with the provisions in Table 2.1.5;

2 The daytime period should be from 6.00 to 22.00, and the nighttime period should be from 22.00 to 6.00 the next day. When there are other local regulations on the division of daytime and nighttime, those regulations shall be followed.

2.2 Sound insulation, sound absorption and noise reduction design

2.2.1

The enclosure structure of noise-sensitive rooms shall be designed for sound insulation. The sound insulation performance of the enclosure structure of the noise-sensitive room shall be determined according to the outdoor noise situation and the indoor noise limit value of the noise-sensitive room specified in Table 2.1.3 of this code. The sound insulation performance of the enclosure structure in a noise-sensitive room shall be determined according to the noise outside the room and the indoor noise limit of the noise-sensitive room specified in Table 2.1.4 of this code.

3.1.3 Lighting settings should meet the following requirements.

1 When the normal lighting power supply fails in the following places, emergency lighting shall be installed.

- 1) In places where work or activities cannot be interrupted, backup lighting should be installed;
- 2) Safety lighting should be installed in places where people are in potential danger;
- 3) Where personnel need to effectively identify the evacuation path, evacuation lighting should be installed.

2 On-duty lighting should be set up for places on duty or patrolling during non-working hours at night.

3 For places that need to be guarded, guard lighting should be set up according to the requirements of the guarding range.

4 On buildings (structures) that may endanger navigation safety, obstacle lighting shall be installed in accordance with relevant national regulations.

3.1.4 For light environment facilities accessible to personnel, when the surface temperature is higher than 70°C, isolation protection measures should be taken.

3.1.5 It is strictly forbidden to use lamps with electric shock protection category 0 in various places.

3.2 Lighting design

3.2.1

The daylighting design shall determine the daylighting level according to the building features and functions.

3.2.2

The daylighting design shall take the daylighting coefficient as the evaluation index, and shall comply with the following regulations.

1 The standard value of daylighting grade and daylighting coefficient shall comply with the provisions in Table 3.2.2-1.

2 The photoclimate division should be determined according to Appendix B of this specification. The photoclimate coefficient of each photoclimate zone shall be determined according to Table 3.2.2-2.

3.2.3

Places with high demand for natural lighting shall meet the following requirements.

1 The lighting level of bedrooms, living rooms and general wards should not be lower than the requirements of level IV;

2 The daylighting level of ordinary classrooms should not be lower than the requirements of level III;

3 The lighting uniformity of the side lighting of ordinary classrooms should not be lower than 0.5.

3.2.4

The reflectance of each indoor surface in the long-time working or studying place shall comply with the provisions in Table 3.2.4.

3.2.5

Places where you work or stay for a long time should be equipped with measures to prevent direct glare, reflected glare, reflections and light curtain reflections.

3.2.6

The indoor ceiling, floor and wall of the museum exhibition hall should choose matte finish materials; the storage area for light-sensitive exhibits or collections should not have direct sunlight, and the lighting openings should reduce ultraviolet radiation, adjust and limit the value of natural light. and measures to reduce exposure time.

3.2.7

The color transmittance index of daylighting windows in main functional rooms should not