



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

GB 50033-2013

Replacing GB/T 50033-2001

Standard for daylighting design of buildings

建筑采光设计标准

(English Translation)

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1.0.1

This Standard was formulated with a view to implement national laws and regulations and technical and economic policies, fully utilize natural light, create good light environment, save energy, protect environment and construct green building in the architectural lighting design.

1.0.2

This Standard is applicable to the daylighting design of constructed, renovated and extended engineering of civil buildings and industrial buildings utilizing natural daylight.

1.0.3

The architectural lighting design shall be technology-advanced, economically reasonable and in favor of visual work and physical and mental health.

1.0.4

Architectural lighting design shall not only comply with this Standard but also comply with those in the current relevant ones of the nation.

2.1.1 Reference surface

It refers to the faces measured or with specified illuminance

2.1.2 Illuminance

The illuminance at any point on a surface is the quotient of the luminous flux irradiating onto the surface element (including this point) divided by the area of this surface element.

2.1.3 Exterior illuminance

It refers to the illuminance on the exterior horizontal plane without shading under the irradiation of the diffused light from the sky.

2.1.4 Interior illuminance

It refers to the illuminance at a point of the interior horizontal plane under the irradiation of the diffused light from the sky.

2.1.5 Daylight factor

It is the ratio of illuminance generated from receiving the diffuse sky radiation light distributed in the assumed and known sky illuminance directly and indirectly and the diffuse sky radiation illuminance generated on the external horizontal plane without shading from the sky half.

2.1.6 Standard value of daylight factor

It is the daylighting efficient value where the visual function requirements are met under the specified exterior natural light design illuminance.

2.1.7 Design illuminance of exterior daylight

The minimum illuminance of exterior natural light with only natural light utilized.

2.1.8 Standard value of interior daylight illuminance

It correspond to the specified exterior natural light design illuminance value and the illuminance value for reference planes with the standard value for appropriate daylighting efficient.

2.1.9 Daylight climate

It refers to the natural light status formed by vertical incident solar rays, diffuse sky radiation light and ground-reflected light

2.1.10 Annual average total illuminance

It refers to the total illumination of exterior natural light according to statistics in specified annual time.

2.1.11 Daylight climate coefficient

Zone factor determined by the average total illumination value according to the daylight climate characteristics.

2.1.12 Critical illuminance of exterior daylight

It refers to the exterior natural illumination where all the artificial lighting are required to be opened indoors.

2.1.13 Uniformity of daylighting

It refers to the ratio of minimum daylighting factor value and the mean value for reference planes.

2.1.14 Discomfort glare

Uncomfortable visual conditions are caused due to the unsuitable distribution of lightness and the existence of extreme brightness contrast in space and time in the field of vision. Discomfort glare in this Standard refers to the discomfort glare caused by the windows in particular.

2.1.15 Ratio of glazing to floor area

It refers to the ratio between the window opening area and ground area. As for the side daylighting, the window opening area above the reference planes shall be adopted.

2.1.16 Depth of daylighting zone

It refers to the depth of the room meeting the daylighting requirements in side daylighting. In this Standard, it is expressed with the ratio of room depth and the height from the reference planes to the window.

2.1.17 Tubular daylighting system

It is a daylighting system of natural lighting for the collection of natural light transmitted indoors through pipelines and consists of condenser, light pipe and diffuser.

2.1.18 Efficiency of the tubular daylighting system

It refers to the ratio of output light flux of diffuser and input luminous flux of condenser in the tubular daylighting system.

2.1.19 Daylight utilization factor

It refers to the ratio between the luminous flux received by the shone plane and the luminous flux from the sky received by the skylight or condenser.

2.1.20 Light to solar gain ratio

It refers to the ratio of visible light transmittance of material and the total transmittance of solar energy.

2.1.21 Transmitting rebate factor

It refers to the transmitted diffused light illuminance and the diffused light illuminance.

2.2.1 Illumination

E_w - Exterior illuminance;

E_n - Interior illuminance;