



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

GB 51348-2019

Replacing JGJ 16-2008

Standard for electrical design of civil buildings

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- 4 Except for item 3 of this article, the allowable power interruption time is millisecond level...

1 General

1.0.1 This standard is formulated in order to implement the national technical and economic policies in the electrical design of civil buildings, to achieve safety, reliability, economical rationality, advanced technology, overall aesthetics, and convenient maintenance and management.

1.0.2 This standard is applicable to the electrical design of newly-built, rebuilt and expanded single and group civil buildings, but not applicable to the electrical design of gas pressurization stations and automobile gas stations.

1.0.3 The electrical design of civil buildings should embody people-oriented, take comprehensive control of electromagnetic pollution, sound pollution and light pollution, meet the requirements of relevant environmental protection standards, and ensure the safety of the living environment.

1.0.4 The system configuration level of electrical design for civil buildings should be compatible with the functional requirements and nature of use of the project.

1.0.5 The electrical design of civil buildings should adopt mature and effective energy-saving measures, rationally adopt distributed energy sources, reduce energy consumption, and promote the development of green buildings.

1.0.6 For the electrical design of civil buildings, products that meet the current national standards should be selected, and products that meet international advanced standards and meet engineering requirements can also be used. It is strictly forbidden to use products that have been eliminated by the state.

1.0.7 The electrical design of civil buildings should adopt new technologies that have been proven effective in practice to improve economic and social benefits.

1.0.8 In addition to complying with this standard, the electrical design of civil buildings shall also comply with the current relevant national standards.

2.1.1 standby power supply

The power required to maintain electrical installations or lighting systems when the normal power supply is cut off.

2.1.2 emergency power supply (EPS)

A power source used as part of an emergency power supply system.

2.1.3 uninterruptible power supply (UPS)

It can provide uninterrupted power supply backup power supply device that meets the power supply quality requirements of electronic information equipment and computer systems.

2.1.4 protective conductor protective conductor

Composed of a protective bonding conductor, a protective grounding conductor and a grounding conductor, it is a conductor for safety protection.

2.1.5 Earth conductor

A conductor that provides a conductive path or a part of a conductive path between the general ground terminal of the wiring system, electrical device or electrical equipment and the ground electrode or ground grid.

2.1.6 protective earth conductor (PE) protective earth conductor

Conductor for protective earthing.

2.1.7 Protective bonding conductor protective bonding conductor

Conductors for the protection of equipotential bonding.

2.1.8 neutral conductor (N) neutral conductor

A conductor connected to a neutral point and used for distribution of electricity.

2.1.9 Protective Earthed Neutral Conductor (PEN)

A conductor that has both the functions of a protective earthing conductor and a neutral

conductor.

2.1.10 earthing busbar

A protective conductor directly connected to the main grounding busbar (terminal), grounding pole or grounding grid.

2.1.11 Main earthing terminal

Main earth busbar main earth busbar Part of the grounding arrangement of electrical installations and can be used for terminals or busbars that are electrically connected to multiple grounding conductors.

2.1.12 residual current residual current

The vector sum of the current values of all charged bodies at a given point in an electrical circuit.

2.1.13 extra-low voltage (ELV)

The phase-to-phase voltage or the phase-to-ground voltage does not exceed the AC root mean square value of 50V, that is, the voltage that meets the relevant Class I voltage limits stipulated in the current national standard "Voltage Sections of Electrical Installations in Buildings" GB/T 18379.

2.1.14 safety extra low voltage system safety extra low voltage system (SELV)

An electrical system that is not earthed under normal conditions and whose voltage does not exceed extra-low voltage.

2.1.15 protection of extra low voltage system protection of extra low voltage system (PELV)

An electrical system that is normally earthed and whose voltage does not exceed extra-low voltage.

2.1.16 Exposed conductive part exposed-conductive-part

The conductive part that can be touched on the electrical equipment.

2.1.17 External conductive part extraneous-conductive-part

A conductive part that is not an integral part of an electrical device and is liable to be introduced into a potential.

2.1.18 Protective grounding protective earth; protective grounding

For electrical safety, connecting exposed conductive parts of a system, installation or equipment to a protective earthing conductor.

2.1.19 functional earthing; functional grounding

For purposes other than electrical safety, the grounding required to ensure the normal and stable operation of a system, device or equipment.

2.1.20 Functional switching device functional switching device

An electrical appliance that switches on, off or converts the power supply of electrical circuits or electrical equipment for the normal operation of electrical circuits or electrical equipment.

2.1.21 earth fault; ground fault

Unintentional conductive path between a live conductor and earth.

2.1.22 grounding configuration earthing arrangement; grounding arrangement

Earthing system earthing system All electrical connections and devices involved in the grounding of systems, installations and equipment are called grounding arrangements, also known as grounding systems.

2.1.23 earth electrode; ground electrode

A conductive part that is buried in soil or a specific conductive medium and has electrical contact with the earth.

2.1.24 earth-electrode network; ground-electrode network

An integral part of a grounding arrangement consisting only of grounding electrodes and their interconnections.

2.1.25 Equipotential bonding equipotential bonding

An electrical connection between multiple conductive parts in order to achieve equipotentiality.

2.1.26 lightning protection device

The sum of air receptors, down conductors, grounding grids, surge protectors and other connecting conductors.