

ICS 13.220.01

CCS P 16



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

GB 51309-2018

**Technical standard for fire emergency lighting and evacuate
indicating system**

Issued on: July 10, 2018

Implemented on: March 1, 2019

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

Table of Contents

- 1 General
- 2 terms
- 3 system design
 - 3.1 General provisions
 - 3.2 Lamps
- 4 Urban traffic tunnels shall meet the following requirements.

1 General

1.0.1 This standard is formulated in order to reasonably design the fire emergency lighting and evacuation indication system, ensure the construction quality of the fire emergency lighting and evacuation indication system, and ensure the normal operation of the system.

1.0.2 This standard applies to the design, construction, commissioning, testing, acceptance and maintenance of fire emergency lighting and evacuation indication systems installed in buildings and structures.

1.0.3 The design of the fire emergency lighting and evacuation indication system must follow the relevant national guidelines and policies, aiming at the characteristics of the users, so as to be safe, reliable, advanced in technology, economical and reasonable, energy-saving and environmentally friendly.

1.0.4 The design, construction, commissioning, inspection, acceptance and maintenance of the fire emergency lighting and evacuation indication system shall not only comply with this standard, but also comply with the current relevant national standards.

2.0.1 Fire emergency lighting and evacuate indicating system fire emergency lighting and evacuate indicating system

A system that provides lighting and evacuation instructions for personnel evacuation and places where work is still required in the event of a fire.

2.0.2 fire emergency luminaire

All kinds of lamps and lanterns that provide lighting and indication signs for personnel evacuation and fire fighting operations, including fire emergency lighting lamps and fire emergency sign lamps.

2.0.3 A type fire emergency luminaire A type fire emergency luminaire

Fire emergency lamps with rated working voltage of main power supply and battery power supply not greater than DC36V.

2.0.4 fire emergency lighting luminaire fire emergency lighting luminaire

Luminaires that provide lighting for personnel evacuation and places where work is still required in the event of a fire.

2.0.5 Fire emergency indicating luminaire fire emergency indicating luminaire

Use graphics and text to indicate the evacuation direction, and indicate the lamps for evacuation exits, safety exits, floors, refuge floors (rooms), and passages for the disabled.

2.0.6 Emergency lighting distribution box switch board for fire emergency lighting

Power supply and distribution device for self-powered fire emergency lamps.

2.0.7 A type switch board for fire emergency lighting

Emergency lighting distribution box with rated output voltage not greater than DC36V.

2.0.8 Centralizing power supply for fire emergency luminaries

It is a power supply device that supplies power for centralized power supply type fire emergency lamps by storing energy in batteries.

2.0.9 A type centralizing power supply for fire emergency luminaries

Centralized power supply for emergency lighting with rated output voltage not greater than DC36V.

2.0.10 Emergency lighting controller central control panel for fire emergency luminaires

It is a device that controls and displays the working status of centralized control fire emergency lamps, emergency lighting centralized power supply, emergency lighting distribution box and related accessories.

2.0.11 Central controlled fire emergency lighting system

The system is equipped with an emergency lighting controller, which centrally controls and displays the emergency lighting centralized power supply or emergency lighting distribution box and the fire emergency lighting and evacuation indication system of the working status

of the connected fire emergency lighting.

2.0.12 non-central controlled fire emergency lighting system

The system is not equipped with an emergency lighting controller, and the emergency lighting centralized power supply or emergency lighting distribution box respectively controls the fire emergency lighting and evacuation indication system that is connected to the working state of the fire emergency lighting.

3.1 General provisions

3.1.1 Fire emergency lighting and evacuation indication system (hereinafter referred to as "system") can be divided into centralized control system and non-centralized control system according to the control mode of fire emergency lighting (hereinafter referred to as "light").

3.1.2 The selection of the system type shall be determined according to factors such as the scale of the building or structure, the nature of use, and the difficulty of daily management and maintenance, and shall meet the following requirements.

1 The place where the fire control room is set up should choose a centralized control system;

2 A centralized control system should be selected for places where an automatic fire alarm system is installed but no fire control room is installed;

3 Other places can choose non-centralized control system.

3.1.3 The system design should follow the basic design principles of simple system architecture and simple control, including lighting layout, system power distribution, system control design in non-fire conditions, and system control design in fire conditions; It should include the design of emergency lighting controllers and system communication lines.

3.1.4 Before the system design, the evacuation indication plan for each horizontal evacuation area should be determined according to the structural form and use function of the building or structure, with the fire compartment, floor, tunnel section, subway platform and station hall as the basic unit. The evacuation indication plan shall include determining the evacuation route in each area, indicating the direction of the fire emergency sign lamps (hereinafter referred to as "direction sign lights") indicating the direction of evacuation, and indicating the direction of evacuation exits, safety exit fire emergency sign lamps (hereinafter referred to as "exit sign lights")) working status, and shall meet the following requirements.

1 For an area with an evacuation indication scheme, the evacuation indication scheme for this area shall be determined in accordance with the principle of shortest path evacuation.

2 Areas with two or more evacuation indication schemes shall comply with the following regulations.

1) For fire compartments that need to be evacuated by using adjacent fire compartments, the corresponding evacuation instruction scheme should be determined according to the shortest path evacuation principle and the principle of risk avoidance according to the two situations that the adjacent fire compartments can be borrowed and cannot be borrowed during a fire.

2) For places such as traffic tunnels, subway tunnels, subway platforms, and station halls that need to adopt different evacuation plans, the corresponding evacuation instruction plans should be determined according to the principle of shortest path evacuation and the principle of avoiding danger; The instruction scheme shall be the default evacuation instruction scheme for the place.

3.1.5 The emergency lighting controller, emergency lighting centralized power supply (hereinafter referred to as "centralized power supply"), emergency lighting distribution box and lamps in the system should be selected in accordance with the current national standard "Fire Emergency Lighting and Evacuation Instruction System" GB 17945 and Products related to the market access system.

3.1.6 In residential buildings, when the lamps are powered by their own batteries, the fire emergency lighting can also be used as daily lighting.

3.2 Lamps

I General provisions

3.2.1 The selection of lamps should meet the following requirements.

1. Lamps with energy-saving light sources should be selected, and the color temperature of the light source of fire emergency lighting fixtures (hereinafter referred to as "lights") should not be lower than 2700K.

2 The light-storage indicator signs should not be used to replace the fire emergency sign lamps (hereinafter referred to as "marker lights").

3 The battery power supply of lamps and lanterns should give priority to the battery with high safety and no harmful substances to the environment such as heavy metals.

4 The voltage level and power supply mode of lamps installed at or below 8m from the ground shall comply with the following regulations.

1) Type A lamps should be selected;

2) The sign lamps set on the ground should choose type A lamps with centralized power supply;

3) Residential buildings without fire control rooms, evacuation aisles, stairwells and other places can choose B-type lamps with their own power supply.