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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 50016-2014

Replacing GB 50016-2006

Code for Fire Protection Design of Buildings (2018 Edition)

建筑设计防火规范（2018年版）

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1 General Provisions

1.0.1 This code is formulated with a view to preventing fire accidents in buildings, reducing fire hazards and protecting personal and property safety.

1.0.2 This code is applicable to the following constructed, renovated and extended buildings.

1.0.3 This code is not applicable to the fire protection design of buildings such as factory-buildings (storages) for gunpowder, explosive and their products as well as fireworks and firecrackers.

1.0.4 Where occupancies for different purposes are arranged in the same building, fire separation shall be provided between them. The fire protection design for this building and their functional occupancies shall be determined according to the relevant requirements of this code.

1.0.5 The fire protection design of buildings shall comply with the relevant national principles and policies, and guarantee, on the whole, safety and usability, advanced technology as well as economy and rationality according to the characteristics of buildings and fire hazards in them.

1.0.6 In addition to meeting the requirements of this code, the buildings with height

larger than 250m shall also be taken with stricter fire prevention measures according to the actual conditions. Their fire protection design shall be submitted to the national fire authorities for subject study and demonstration.

1.0.7 In addition to the requirements of this code, the fire protection design of buildings shall also comply with those specified in the current relevant standards of the nation.

2.1 Terminologies

2.1.1 High-rise building

The residential buildings with height larger than 27m and the non-single-storey factory-buildings, storages and other civil buildings with height larger than 24m.

Note. The calculation of building height shall meet those specified in Appendix A of this code.

2.1.2 Podium

The ancillary building with height not larger than 24m, which is beyond the projection of the main body of high-rise building but is connected with the main body.

2.1.3 Important public building

The public building which may cause heavy casualties, property loss and severe social impact in case of fire.

2.1.4 Commercial facilities

Small business houses such as stores, post offices, savings banks, barbershops located on the first floor or on the first floor and second floor of residential buildings, with the building area of each separated unit not larger than 300m2.

2.1.5 High rack storage

Mechanical or automatic rack storage, with rack height larger than 7m.

2.1.6 Semi-basement

A floor of a building, with the average height of the room ground below the outdoor design ground for 1/3~1/2 of the average clear height of such room.

3.1 Classification of Fire Hazards

3.1.1 Fire hazards of production shall be classified according to such factors as the properties and quantity of substances used or generated during production, may be classified into Categories A, B, C, D and E, and shall be in accordance with those specified in Table 3.1.1.

3.1.2 When production with different fire hazards is carried out in a factory-building or in any fire compartment of the factory-building, the fire hazard category of production in factory-building or in fire compartment shall be determined according to the part with higher fire hazard; when the quantity of flammables or combustibles used or generated during production process is small and is insufficient to constitute explosion or fire hazard, the fire hazard category may be determined according to the actual conditions; when one of the following conditions is met, the fire hazard category may be determined according to the part with lower fire hazard.

3.1.4 When articles of different fire hazards are stored in a storage or in any fire compartment of storage, the fire hazard of this storage or fire compartment shall be determined according to the articles with the highest fire hazard.

3.1.5 As for the storages of Categories D and E articles, if the weight of combustible package is larger than 1/4 of that of the articles or the volume of combustible package is larger than 1/2 of that of the articles, the fire hazard shall be determined as Category C.

4.1 General Requirements

4.1.1 Class A, B and C liquid tank farm, LPG tank farm, combustible and combustion-supporting gas tank farm and stackyard for combustibles shall be arranged at the edge of urban (area) or in the relatively independent safety zone and should be arranged at the windward side in the wind direction with the annual minimum frequency.

Class A, B and C liquid tanks (tank farm) should be arranged in the zone with low terrain. Where they are arranged in the zone with high terrain, security facilities shall be adopted.

LPG tank (tank farm) should be arranged in the zone where liquefied petroleum is not easy to be stored such as in places with flat and open terrain.

4.1.2 Category A liquid in barrel or bottle shall not be stored outdoors.

4.1.3 Non-combustible solid protection wall with the height not less than 1.0m shall be arranged around the LPG tank group or tank farm.

4.1.4 Class A, B and C liquid tank farm, LPG tank farm, combustible and combustion-supporting gas tank farm and stackyard for combustibles shall be arranged separately from the loading area, auxiliary production area and office area.

4.1.5 The smallest horizontal distance between Class A, B and C liquid tanks, LPG tanks, combustible and combustion-supporting gas tanks, combustibles stacks and overhead power lines shall meet the requirements of 10.2.1 of this code.

4.2 Fire Separation Distance of Class A, B, C Liquid Tanks (Tank Farm)

4.2.1 The fire separation distance between Class A, B and C liquid tanks (tank farm)/ barreled Class B and C liquid stackyard and other buildings shall not be less than those specified in Table 4.2.1.

4.2.10 The distance between zero-position tank and railway for loading and unloading line which it belongs to shall not be less than 6m.

4.2.11 The fire separation distance between the tanks (tank farm) of oil depot and building, the arrangement of and fire separation distance between the storage tanks in oil depot and the fire separation distance between storage tank and such buildings as pump room and loading and unloading arms in oil depot shall meet the requirements of the current national standard "Code for Design of Oil Depot" (GB 50074).

5.1 Classification and Fire Resistance Class

5.1.1 Civil buildings may be classified into single-/multi-storey civil buildings and high-rise civil buildings according to their building height and number of storeys. High-rise civil buildings may be classified into Category I and Category II according to their building height, use function and floor building area. The classification of civil