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

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**Standard for fire protection design of iron and steel metallurgy
enterprises**

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1 General

1.0.1 This standard is formulated in order to prevent and reduce fire hazards in iron and steel metallurgical enterprises and protect personal and property safety.

1.0.2 This standard is applicable to the fire protection design of new construction, expansion and reconstruction projects of iron and steel metallurgical enterprises, and not applicable to the places where explosives or blasting equipment are processed, stored, distributed, and used in iron and steel metallurgical enterprises.

1.0.3 The fire protection design of iron and steel metallurgical enterprises should be combined with engineering reality, and actively adopt new technologies, new processes, new materials and new equipment, so as to be safe, applicable, advanced in technology, and economical and reasonable.

1.0.4 Iron and steel metallurgical enterprises in two or more process plant areas should unify fire protection planning and fire protection design.

1.0.5 The fire protection design of iron and steel metallurgical enterprises shall not only comply with the provisions of this standard, but also comply with the relevant current national standards.

2.0.1 main workshop

Plants containing main production process equipment, such as steelmaking main plant, hot rolling main plant, etc.

2.0.2 process plant

Relatively independent production unit areas, such as steelmaking plants, self-owned power plants, etc.

2.0.3 main electrical room

Set up buildings that serve the main motor of the rolling mill, converter devices, power transformation (distribution) equipment, automatic control equipment, etc. in the steel rolling system.

2.0.4 main control building (room) main control building

Set up buildings that serve automatic control equipment, power transformation (distribution) equipment, etc. for production other than steel rolling systems.

2.0.5 general step-down transformer substation

It is set up separately, receives power from the power system externally, and supplies and distributes power to the whole plant after the voltage is reduced by the transformer.

2.0.6 cable tunnel cable tunnel

It is a fully enclosed underground structure for laying cables and has passages for installation and inspection.

2.0.7 cable corridor cable corridor

It is a fully enclosed above-ground building (structure) made of non-combustible or flammable materials, which is used for laying cables and has passages for installation and inspection.

2.0.8 Nitrate chamber

An independent space excavated for each production part in an underground mine.

3.0.1 The fire hazard classification of buildings (structures) shall comply with the provisions in Table 3.0.1.

Those not specified in the table shall comply with the relevant provisions of the current national standard "Code for Fire Protection Design of Buildings" GB 50016.

Table 3.0.1 Fire Hazard Classification of Buildings (Structures)

Continued Table 3.0.1 3.0.2 For the buildings with the following secondary fire resistance grades during production or when a fire occurs, the metal load-bearing components whose surface heat radiation temperature is lower than 200°C may not take fire protection and heat insulation measures, and the parts directly affected by the flame or the heat radiation

temperature is higher than For parts at.200°C, non-combustible materials or other fire and heat insulation protection measures should be taken.

1 Single-storey Category C factory building with automatic fire extinguishing system;

2 Class D and E factory buildings.

3.0.3 The underground hydraulic station and underground lubricating oil station (storage) should adopt reinforced concrete structure or brick-concrete structure, and its fire resistance rating should not be lower than Class II.

3.0.4 When steel structures are used in dry coal sheds or indoor coal storage yards, effective fire protection measures with a fire resistance rating of not less than 1.00h shall be adopted for steel structure load-bearing members within 1.5m outside the designed maximum coal pile outline.

3.0.5 The maximum allowable building area of fire compartments of buildings (structures) shall comply with the following regulations.

1 The underground lubricating oil station and hydraulic station shall not be larger than 500m², and when an automatic fire extinguishing system is installed, it can be expanded by 1.0 times;

2 When the main workshop complies with the provisions of Article 3.0.2 and Article 3.0.8 of this standard, the area of its fire compartment is not limited;

3 The fire compartment of the coal pit shall not be larger than 3000m²;

4 The maximum permissible building area of the fire compartment of other buildings shall comply with the relevant provisions of the current national standard "Code for Fire Protection Design of Buildings" GB 50016.

3.0.6 Iron-making blast furnaces and pulverized coal preparation, steel-making converter and electric furnace areas, steel-rolling galvanizing and continuous annealing unit areas, and gas generator main workshops in iron and steel metallurgical enterprises. The workshops are single-story and not higher than 24m, but the local operating platform, chimney, equipment, etc. are higher than 24m, and the fire protection design can be determined as a single layer.

3.0.7 The building area and fire compartment area of the closed coal storage yard should not exceed 12000m². When the area exceeds 12000m², measures should be taken according to the following requirements.

1 The coal shall be placed in separate piles, the distance between the bottom of the coal pile shall not be less than 10m or a partition wall of not less than 2m shall be set between the coal piles;

2 Fire extinguishing facilities of fire monitors shall be provided.

3.0.8 The auxiliary production rooms of Category A, B and C installed in the main factory buildings of Category D and E shall be divided into separate fire compartments, and non-combustible walls with a fire resistance rating of not less than 3.00h and non-combustible walls with a fire resistance rating of 1.50h shall be adopted. The floor is separated from other parts.

4.1 General provisions

4.1.1 When planning the factory area, fire protection planning should be carried out at the same time, and should be based on the characteristics and fire hazards of the enterprise and its adjacent buildings (structures), factories or facilities, combined with terrain, wind direction, traffic, water sources and other conditions, reasonably arranged.

4.1.2 The workshops that store or use Class A, B, and C liquids, flammable gases, and produce a large amount of smoke, dust, and toxic and harmful gases during the production process should be arranged on the edge of the factory area or in the main production workshops and staff living areas. The wind is on the windward side.

4.1.3 The plane layout of the mine factory area should meet the following requirements.

1 The wellhead of underground mines and the level of ketone must be placed in a safe zone;

2 When the hoisting shaft of an underground mine is used as a safety exit, the ground at the wellhead shall be level and accessible;

3 No inflammable and explosive storage yards and warehouses shall be arranged within 200.0m around the wellhead of underground mines, and no processes with open flames or sparks such as forging and riveting shall be arranged within 20.0m from the wellhead;

4 Timber yards, soil dumps and slag yards with the risk of spontaneous combustion fires should be arranged on the windward side of the air inlet wellhead in the perennial minimum frequency wind direction, and the distance from the air inlet wellhead should not be less than 80.0m;

5 The distance between Category E buildings (structures) and mine shafts and air inlet shafts shall not be less than 15.0m.

4.1.4 When the corridor of the belt conveyor and the high-voltage line are arranged alternately or in parallel, the distance shall comply with the relevant provisions of the current national standard "Code for Urban Power Planning" GB/T 50293.

4.1.5 The greening of the factory area shall comply with the following regulations.