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PEOPLE'S REPUBLIC OF CHINA**

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**Design code for heating ventilation and air conditioning of
industrial buildings
(English Translation)**

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1 General

1.0.1

This specification is formulated for industrial enterprises to improve working conditions, increase labor productivity, ensure product quality and personal safety, adopt advanced technology in heating, ventilation and air conditioning design, rationally utilize and save energy and resources, and protect the environment.

1.0.2

This code is applicable to the heating, ventilation and air conditioning design of new, expanded and reconstructed industrial buildings and structures. This specification does not apply to the heating, ventilation and air conditioning design of buildings with special purposes, special purification and special protection requirements, clean workshops and temporary buildings.

1.0.3

The heating, ventilation and air conditioning design scheme should be based on the requirements of the production process, the purpose and function of the building, the use requirements, the composition characteristics of the cooling and heating loads, the environmental conditions, and the energy status, combined with the current national health, safety, energy saving, and environmental protection. The principles and policies, etc., will be determined through comprehensive technical and economic comparisons in conjunction with relevant majors. New technologies, new processes, new equipment, and new materials should be adopted in the design.

1.0.4

In the design of heating, ventilation and air conditioning, the construction and acceptance requirements and the relevant construction and acceptance specifications that should be implemented should be specified. When there are special requirements for construction and acceptance, it shall be stated in the design documents.

1.0.5

The heating, ventilation and air conditioning design of industrial buildings shall not only comply with this specification, but also comply with the current relevant national standards.

2.0.1 Industrial building

A collective term for production plants, warehouses, public auxiliary buildings, and living and administrative auxiliary buildings.

2.0.2 Activity area activity area

This code specifically refers to the activity area of people in the building, and generally refers to the space within 3m from the ground, floor or operating platform.

2.0.3 Work site work site

Posts or work places where personnel often or regularly stay for professional activities or production management.

2.0.4 Explosive gas atmosphere explosive gas atmosphere

Under atmospheric conditions, a mixture of gas, vapor or mist combustible substances and air, after ignition in the mixture, the combustion will spread throughout the environment of the unburned mixture.

2.0.5 Dry-type collection

The collected dust or smoke is in a dry state, and the dust removal method does not increase the moisture content.

2.0.6 Wet separation

The dust removal method in which the collected dust or smoke is in the form of mud.

2.0.7 Technological air conditioning industrial air conditioning system

Refers to the air conditioning system that mainly meets the requirements of the production process, supplemented by personnel comfort, and has high requirements for indoor temperature, humidity, and cleanliness.

2.0.8 Comfort air conditioning

The air conditioner is set up to meet the needs of people's work and life.

2.0.9 Zoning two-pipe water system

According to the load characteristics of the building, the air-conditioning waterway is divided into two two-pipeline systems for cold water and hot and cold water.

2.0.10 Two fluid humidification two fluid humidification

A technology that uses compressed air to atomize water and use fine water mist to humidify the air.

2.0.11 Mine air conditioning mine air conditioning

In mines in severe cold and cold areas, in order to prevent freezing of the wellhead in winter or to maintain a certain ambient temperature on the working surface, the technology of heating the mine inlet air; and in hot or deep wells with high original rock temperature, in order to maintain a certain temperature Ambient temperature, artificial refrigeration and air-conditioning cooling technology for mines.

3 Basic rules

3.0.1

The thermal comfort evaluation of the indoor environment of a building shall comply with the relevant provisions of the current national standard "Measurement of PMV and PPD Indexes in Moderate Thermal Environments and Regulations on Thermal Comfort Conditions" GB/T 18049, and the estimated average thermal sensation index (PMV) value should be greater than or equal to -1, and should be less than or equal to 1, and the value of the percentage of predicted unsatisfactory (PPD) should be less than or equal to 27%.

3.0.2

Heat insulation and cooling measures should be taken in high-temperature workplaces. High-temperature workplaces should comply with the relevant provisions of the current national standard "Classification of High-temperature Work" GB/T 4200, and the working environment should be classified and evaluated.

3.0.3

Heating, ventilation and air conditioning equipment should be selected according to the design working conditions.

3.0.4

In the design of heating, ventilation and air-conditioning systems, necessary space for installation, operation and maintenance of equipment, pipes and fittings shall be reserved, and holes for installation and maintenance shall be reserved in the building design. For large equipment and pipelines, transportation channels and lifting facilities should be provided.

3.0.5

In the design of heating, ventilation and air conditioning, safety protection measures should be taken for equipment and pipelines that may cause human injury

3.0.6

For projects located in earthquake areas or collapsible loess areas, anti-seismic and anti-subsidence measures should be taken in the design of heating, ventilation and air conditioning as required.

3.0.7

The water quality of the heating and air-conditioning system shall comply with the relevant provisions of the current national standard "Water Quality of Industrial Boilers" GB/T 1576 or "Water Quality of Heating and Air-Conditioning Systems" GB/T 29044.

3.0.8

Ventilation, air-conditioning and refrigeration equipment shall be equipped with backup equipment under the following circumstances.

1 Anti-virus and explosion-proof ventilation equipment, when the equipment stops running will cause safety accidents, or when the equipment is only allowed to stop running for a short time;

2 Ventilation, air-conditioning and refrigeration equipment, if the equipment stops running, it will cause abnormal operation of the process system in the burdened area, and will cause economic losses or even accidents, when the damage is serious.

3.0.9

Steam condensate should be recycled.

3.0.10

When the technical and economic conditions are reasonable for heating, ventilation and air-conditioning systems, waste heat should be recovered.

3.0.11

For heating, ventilation, and air-conditioning water system equipment, pipes and their components, the working pressure shall not exceed the allowable pressure.