



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

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

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1 General Provisions	
1.0.1 This code is formulated with a view to implementing the national technical and	

1 General Provisions

1.0.1

This code is formulated with a view to implementing the national technical and economic policies, rationally using resources and saving energy, protecting environment, promoting application of advanced technologies, and ensuring healthy and comfortable working and living environment during design for heating, ventilation and air conditioning of civil buildings.

1.0.2

This code is applicable to the design for heating, ventilation and air conditioning of constructed, renovated and extended civil buildings, not applicable to the design for the buildings and temporary buildings with special purposes or special purification and protection requirements.

1.0.3 Heating, ventilation and air conditioning design scheme shall be determined through

economic and technical comparison according to service, function, application requirements, cooling/heating load features, environmental conditions and energy status of buildings, in combination with the national policies and guidelines with regard to safety, energy saving, environmental protection and hygiene. New technology, new process, new equipment and new material shall be adopted in priority during design.

1.0.4 Safety protection measures must be taken for the equipment and pipelines that may

endanger human body during design of heating, ventilation and air conditioning.

1.0.5 Spaces necessary for installation, operation and maintenance of equipment, pipelines

and accessories shall be provided during design of heating, ventilation and air conditioning system or holes for installation and maintenance shall be reserved during building design.

Transportation and hoisting conditions shall be provided or transport channels and hoisting facilities shall be arranged for large equipment and pipelines.

1.0.6 During design of heating, ventilation and air conditioning, shockproof or other

protective measures shall be taken into consideration according to the current national seismic fortification grade requirements.

1.0.7 Construction, debugging and acceptance requirements shall be taken into consideration for the design of heating, ventilation and air conditioning. Where there are special requirements in the design for construction, debugging and acceptance, they shall be stated in the design document.

1.0.8 Design for heating, ventilation and air conditioning of civil buildings shall not only

meet the requirements of this code but also comply with those stipulated in the current relevant ones of the nation.

2.0.1 Predicted mean vote (PMV)

PMV is one comprehensive evaluation index determined basing on the fundamental equation of thermal balance of human body and the grade of subjective thermal sensation in physiological psychology, in consideration of many relevant factors of the thermal comfort of human body. PMV means the average index number of votes of groups for 7 (+3~3) thermal sensation grades.

2.0.4 Central heating

The heating system, also called central heating system, for supplying heat to several heat users from heating source, where heating source and heat sink device are arranged respectively and heating medium pipelines are connected.

2.0.5 Standby heating

The heating arranged for keeping the required minimum room temperature in the buildings during non-operating time or service interruption time.

2.0.6 Capillary mat radiant system

A kind of hot water radiant heating and cooling system whose radiant terminal is made of small pipe, machined into parallel mat, and directly laid on the floor, ceiling or wall surface.

2.0.7 Heat settlement site

The site where the heat supplier and the heat user make a trade settlement directly through the calorie value measured by the heat meter.

3 Indoor Air Design Conditions

3.0.1

Heating indoor design temperature shall meet the following requirements.

3.0.2 Indoor design conditions for comfort air conditioning shall meet the following

requirements.

3.0.3 Indoor design temperature, relative humidity and their allowable fluctuation scope of industrial air conditioning system shall be determined according to process demands and health requirements. Air velocity in the personnel activity area should not be greater than 0.3m/s under heating conditions and should be 0.2 m/s~0.5m/s under cooling conditions.

4.1.1 Outdoor air design conditions of major cities shall be in accordance with Appendix A

in this code. The cities not listed in Appendix A shall be determined through calculation according to the requirements of this section. If the basic observation data fail to meet the requirements of this section, the outdoor design temperature for winter and summer may be determined by the simplified method listed in Appendix B of this code.

4.1.6 Outdoor design dry-bulb temperature for summer air conditioning shall adopt the dry-bulb temperature when unassured hours for average year are 50.

4.1.7 Outdoor design wet-bulb temperature for summer air conditioning shall adopt the wet-bulb temperature when unassured hours for average year are 50.

4.1.8 Outdoor design temperature for summer ventilation shall adopt the mean of mean

monthly temperature at 14.00 in the hottest month in the past years.

4.1.18 Statistics of outdoor design conditions should be carried out every 30 years. Less

than 30 years, outdoor design conditions can be adopted according to the actual years, but at least 10 years.

4.2.1 Solar irradiance in summer shall be determined through calculation basing on local

geographical latitude, atmospheric transparency and atmospheric pressure according to the solar declination on 21st, July.

4.2.2 Total solar irradiance of building on vertical plane and horizontal plane of each

orientation may be adopted according to Appendix C of this code.