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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC
OF CHINA

中华人民共和国国家标准

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GB 50019—2003

Code for Design of Heating Ventilation and
Air Conditioning

采暖通风与空气调节设计规范

Issued on November 5, 2003

Implemented on April 1, 2004

Jointly Issued by General Administration of Quality Supervision, Inspection and
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GB 5019-2003

Chief Development Department: Ministry of Construction of the People's Republic of China

Approval Department: Ministry of Construction of the People's Republic of China

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Introduction

This version is one of China's engineering construction standards in English series, which, in compliance with the relevant procedures and stipulations, has been organized to translate by China Association for Engineering Construction Standardization (CECS) authorized by Ministry of Housing and Urban-Rural Development (MOHURD) of the People's Republic of China. On December 4, 2008, MOHURD published it by means of Announcement of No. 177.

The English version has been translated directly from the Chinese Standard “Code for Design of Heating Ventilation and Air Conditioning” GB 50019—2003 published by China Planning Press. The copyright is owned by MOHURD. In the event of any discrepancy in the process of implementation, the Chinese version shall prevail.

Many thanks should go to the organizations like China Academy of Building Research who have offered strong support during the course of translation and revision of this version, and also to the staff from the relevant standard development organizations and groups who have provided practical assistance through their hard work.

For the sake of improving its quality, any kind of constructive criticism, comments and suggestions in association with this version is welcome. It would be greatly appreciated if they could be fed back to CECS.

Post address: China Association for Engineering Construction Standardization

Department of Standards and Norms,
Ministry of Housing and Urban-Rural Development
of the People's Republic of China

Announcement on Publishing the National Standard of “Code for Design of Heating Ventilation and Air Conditioning”

Code for design of heating ventilation and air conditioning, being implemented from April 1, 2004, has been approved as a national standard with a serial number of GB 50019-2003. Articles 3.1.9,4.1.8,4.3.4,4.3.11,4.4.11,4.5.2,4.5.4,4.5.9,4.7.4,4.8.17,4.9.1,5.1.10,5.1.12,5.3.3,5.3.4(1)(2),5.3.5,5.3.6,5.3.12,5.3.14,5.4.6,5.6.10,5.7.5,5.7.8,5.8.5,5.8.15,6.2.1,6.2.15,6.6.3,6.6.8,7.1.5,7.1.7,7.3.4,7.8.3,8.2.9,8.4.8 are compulsory provisions and must be enforced strictly. The former “Specifications for the Design of Heating Ventilating and Air-conditioning” GBJ 19-87 and No. 26 Announcement on Partial Revision of Standard in 2001 shall be abolished simultaneously.

Ministry of Construction of the People’s Republic of China

November 5, 2003

Foreword

According to the requirements of Document Jian Biao [1998] No, 244 issued by Ministry of Construction (MOC) —Notice on Printing the Development and Revision Plan of National Engineering Construction Standards in 1998, “Specifications for the Design of Heating Ventilating and Air-conditioning” GBJ 19—87 has been completely revised by a revision team organized by China Nonferrous Engineering and Research Institute and experts from design and research institutes and universities.

During the revision process, the revision team had a complete & vast investigation and summarization of experience and research result and made references from foreign countries on similar technologies. The team also solicited extensively opinions from relevant units nationwide in many ways, and repeatedly discussed and researched on the main issues. Finally, the new code was decided after a national review meeting attended by relevant authorities.

The code consists of 9 chapters and 9 appendixes, including general provisions, terms, indoors & outdoors design conditions, heating, ventilation, air conditioning, heating/refrigerating sources of air conditioning, monitoring and control, noise reduction and vibration isolation.

Main contents revised in this code are as follows:

1. Requirements on indoor warm comfortness, air quality and indoor fresh air were added;
2. Requirements on heating areas division were added;
3. Requirements on household heat metering for central heating were added;
4. Safety requirements on workshop of harmful and toxic products were added;
5. Section on emergency ventilation was added;
6. Section of fire-fighting and explosion prevention was deleted and the contents were added to relevant clauses on ventilation;
7. Requirements on buildings with central air conditioning and civil buildings with natural ventilation were added;
8. Content of air conditioning was completely revised and variable air volume system, low temperature ventilation system, splitting air conditioning unit with variable refrigerant flux, heat recovery system and water system of air conditioning were added;
9. Contents of heating & refrigerating sources of air conditioning were completely revised and design requirements on heating pump, cool storage, heat storage, heat exchangers were added. New requirements are added for design of cooling water of air conditioning;
10. Design requirements on directly-fired lithium bromide absorption water chiller (heater) were added;
11. “Automatic control” is changed to “Monitoring and Control”; requirements on monitoring and control of heating, ventilation, air conditioning systems and smoke prevention & exhausting were revised and added;
12. Requirements on vibration control design and the requirements on outdoor equipments noise control was added;
13. Outdoor Climate Conditions Sheet was deleted and Heating, Ventilation and Air Conditioning Climate Data Collection is published instead.

The provisions printed in bold type are compulsory ones and must be enforced strictly.

Ministry of Construction is in charge of the administration of this standard (code) and the

explanation of the compulsory provisions. China Nonferrous Metals Association is responsible for routine management and China Nonferrous Engineering and Research Institute is responsible for the explanation of specific technical contents.

All relevant organizations are kindly requested to sum up and accumulate your experiences in actual practices during the process of implementing this code. The relevant opinions and advice, whenever necessary, can be posted or passed on to Administration Team for Heating and Ventilation Code Execution of China Nonferrous Engineering and Research Institute (No. 12, Fuxing Road, Beijing, Post code: 100038) for reference of future revision.

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1 General Provisions

1.0.1 This code is worked out of to promote application of advanced technology, in heating, ventilation and air conditioning, reasonably utilize and save energy and resource, protect the environment ensure good quality and safety, improve working condition and build comfortable life.

1.0.2 The code is applicable to design of heating, ventilation and air conditioning in construction , extention and renovation of civil and industrial building.

The code is not applicable to design of buildings with requirements for special purpose, special requirements on purification and protection and design of clean workshops and temporary buildings.

1.0.3 Design scheme of heating, ventilation and air conditioning shall be defined and decided in accordance with purpose, functions, usages, composition of heating and cooling load, environments and power supply together with consideration to safety, environment protection, energy-saving and hygiene after an integrated technical and economic comparison. New technology, new methods, new equipment and new material shall be given priority in design.

1.0.4 In design of heating, ventilation and air-conditioning, spaces for installation, operation and maintenance of equipments, pipes and fittings shall be reserved and holes and openings for installation and maintenance shall be reserved in design if necessary, Transportation pass way and lifting facilities shall be established for large equipments and pipes.

1.0.5 For any equipment and pipe possibly harmful to human body, safety protection measures shall be taken during design for heating, ventilation and air conditioning.

1.0.6 For work within earthquake regions or collapsible loess zones, earthquake resistant and valid preventive measures shall be adopted as per the current national standards and codes in heating, ventilation and air conditioning design.

1.0.7 In heating, ventilation and air conditioning design, requirements of the construction and acceptance shall be considered in accordance with relavant codes and requirements. Special requirements on construction and acceptance shall be specified in the design documents.

1.0.8 Design of heating, ventilation and air conditioning works shall meet not only the requirements stipulated in this standard (code) , but also those in other current national standard.

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