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

GB/T 29044-2012

Water quality for heating and air conditioning systems

采暖空调系统水质

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Foreword

This document was issued on 31 December 2012 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 September 2013.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard was proposed by Ministry of Housing and Urban-Rural

Development of the People's Republic of China.

This Standard shall be under the jurisdiction of National Technical Committee on HVAC and Purification Equipment of Standardization Administration of China (SAC/TC 143).

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Water quality for heating and air conditioning systems

1 Scope

GB/T 29044-2012 specifies the water that circulates inside heating and air conditioning systems. The water in a closed heating loop or a chilled water circuit is a working fluid, and it quietly determines how long the system lasts: too much hardness and the heat exchange surfaces scale, which costs energy invisibly and continuously; the wrong pH or dissolved oxygen and the pipework and terminal units corrode from the inside; the wrong conditions in an open cooling circuit and it becomes a microbiological problem with health consequences of its own. None of this is visible until something fails, which is why the water needs a specification rather than being whatever came out of the tap on the day of

commissioning. This standard specifies the terms and definitions, the requirements and the inspection methods for water quality in heating and air conditioning systems. It applies to central air conditioning chilled and cooling water circuits, to direct evaporative cooling circulating water systems, and to the other heating and air conditioning water systems within its scope. Under ICS 91.140.01 and CCS P45, it is written for building services designers, commissioning and facilities management teams, and the water treatment contractors who maintain these circuits.

This Standard specifies the terms and definitions, requirements and inspection methods for water quality for heating and air conditioning systems.

This Standard is applicable to circulating cold water system for central air conditioning and circulating cold water system, circulating water system for direct-evaporative cooling and indirect-evaporative cooling, as well as central heating circulating hot water system with water temperature not exceeding 95°C.

This Standard is inapplicable to air conditioning humidification circulating water system.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 1576, Water quality for industrial boilers

GB/T 5750.2, Standard Examination Methods for Drinking Water - Collection and Preservation of Water Samples

GB/T 6904, Water used in industrial circulating cooling system and boiler - Determination of pH

GB/T 6908, Analysis of water used in boiler and cooling system - Determination of electrical conductivity

GB/T 11899, Water quality - Determination of sulfate - Gravimetric method

GB/T 11911, Water quality - Determination of iron and manganese - Flame

atomic absorption spectrometric method

GB/T 11914, Water quality - Determination of the chemical oxygen demand

- Dichromate method

GB/T 12157, Water for industrial circulating cooling system and boiler -
pressure of the heating and air conditioning circulating water system

3.2 cycle of concentration

the ratio of the salt content of the circulating water to the make-up water of the
open circulating cooling water system

3.3 indirect open circulating cooling water system for central air
conditioning

the central air conditioning circulating cooling water system that the circulating
cooling water and the cooled medium indirectly transfer heat, and the circulating
cooling water is in direct contact with the atmosphere to dissipate heat

3.4 indirect closed circulating cooling water system for central air
conditioning

the central air conditioning circulating cooling water system that the circulating
cooling water and the cooled medium indirectly transfer heat, and the circulating
cooling water and the cooling medium are indirect heat transfer

3.5 circulating water system for direct-evaporative cooling

the circulating cooling water system that cools and humidifies air through the
evaporation of water

3.6 circulating water system for indirect-evaporative cooling

the circulating cooling water system that cools the air through the evaporation
of water, and the air is not humidified when it is cooled

4 Requirements

4.1 Indirect open circulating cooling water system for central air
conditioning

4.1.1 Water quality for indirect open circulating cooling water system for central