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

GB 20665-2015

Replacing GB 20665-2006

**Minimum allowable values of energy efficiency and energy
efficiency grades for domestic gas instantaneous water heaters
and gas fired heating and hot water combi-boilers**

家用燃气快速热水器和燃气采暖热水炉能效限定值及能效等级

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Foreword

4.3 in this Standard is mandatory, while the rest are recommended. This Standard was drafted as per the rules specified in GB/T 1.1-2009. This Standard replaced GB 20665-2006 Minimum Allowable Values of Energy Efficiency and Energy Efficiency Grades for Domestic Gas Instantaneous Water Heater and Gas Fired Heating and Hot Water Combi-Boilers; compared with GB 20665-2006, this Standard has the major technical changes as follows besides the editorial changes.

--- Change, in the scope, "this Standard is applicable to the water heater and heating furnace with heat load no greater than 70kW" into "this Standard is only applicable to the water heater and heating furnace with gas as the energy and heat load no greater than 70kW";

--- Add, in the normative references, GB 25034 Gas-Fired Heating and Hot Water Combi-boilers, CJ/T 336 Condensing Domestic Gas Instantaneous Water Heaters, CJ/T 395 Gas-Fired Heating and Hot Water Condensing Combi-Boilers.

--- Add, in Chapter 4, "

4.1 Basic Requirements";

--- Change the single limit on minimum allowable energy efficiency indicators for each level only against the original rated load and part of load heat efficiency in Table 1 into the lower limit of larger value and upper limit of smaller value against the heat efficiency.

--- In addition to the requirements stipulated in GB 6932 Domestic Gas Instantaneous Water Heater, add the relevant requirements stipulated in GB 25034 Gas-Fired Heating and Hot Water Combi-boilers, CJ/T 336 Condensing Domestic Gas Instantaneous Water Heaters, CJ/T 395 Gas-Fired Heating and Hot Water Condensing Combi-Boilers in the test

method. This Standard was proposed by Department of Resources Conservation and Environmental Protection of NDRC, and Department of Energy Conservation and Resources Utilization of MIIT. This Standard shall be under the jurisdiction of National Technical Committee for Standardization of Energy Fundamentals and Management (SAC/TC 20). Drafting organizations of this Standard. China National Institute of Standardization, National Test and Supervision Center of Gas Appliance, National Test and Supervision Center of Gas Appliance (Foshan), Guangdong Vanward New Electric Co., Ltd., Guangzhou Devotion Domestic Boilers Manufacturing Co., Ltd., A.O. Smith (China) Water Heater Co., Ltd., Guangdong Macro Gas Appliance Co., Ltd., Haier Water Heater Co., Ltd., Guangdong Midea Kitchen Appliances Manufacturing Co., Ltd., Vaillant (Beijing) Heating Equipment Co., Ltd., Shanghai Linnei Co., Ltd., International Copper Association (China), Vatti Corporation Limited, Ningbo Fotile Kitchen Ware Co., Ltd., and Noritz (China) Co., Ltd.. Chief drafting staffs of this Standard. Liu Wei, Chen Haigong, Liu Tong, Lin Li, Zhong Jiasong, Bi Dayan, Hu Dinggang, Zhen Tao, Liu Guorong, Gai Xinfeng, Xu Weichun, Shen Jun, Yi Hongbin, Xu Deming, and Zhang Kundong. The historical edition replaced by this Standard is as follows:

--- GB 20665-2006. Minimum Allowable Values of Energy Efficiency and Energy Efficiency Grades for Domestic Gas Instantaneous Water Heaters and Gas Fired Heating and Hot Water Combi-Boilers

1 Scope

China's energy efficiency standard for domestic gas water heaters and gas combi-boilers - the document behind the efficiency label a manufacturer must carry to sell in China. It sets the energy efficiency grades, the minimum allowable values of energy efficiency, the test methods and the inspection rules, and it applies to gas-fired instantaneous water heaters and to heating and hot water combi-boilers with a heat load of not more than 70 kW, gas being the energy source. Clause 4.3, which carries the minimum allowable values, is mandatory; the rest is recommended. Compared with the 2006 edition the scope was tightened to gas-fuelled appliances only, a clause of basic requirements was added, and the efficiency table was rewritten: where the old edition set a single limit for each grade against the thermal efficiency at rated load and at part load, this one sets a lower limit on the larger value and an upper limit on the smaller. The test methods were widened beyond GB 6932 on instantaneous water heaters to take in GB 25034 on combi-boilers and the condensing appliance specifications CJ/T 336 and CJ/T 395, so that condensing units are covered on their own terms. Issued on 15 May 2015 and in force since 1 June 2016, it replaces GB 20665-2006.

This Standard specifies the minimum allowable values of energy efficiency, energy-conservation evaluating value, energy efficiency grades, test methods and inspection rules for domestic gas instantaneous water heater (including condensing domestic gas

instantaneous water heater, hereinafter referred to as water heater), and gas fired heating and hot water combi-boilers. This Standard is applicable to the water heater and heating furnace with gas as the only energy and heat load no greater than 70kW. This Standard is not applicable to the gas storage water heater. The gas indicated in this Standard shall conform to the provisions of GB/T 13611.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB 6932-2001 Domestic Gas Instantaneous Water Heater

GB/T 13611 Classification and Essential Property of City Gas

GB 25034-2010 Gas-Fired Heating and Hot Water Combi-Boilers

3 Terms and Definitions

The following terms and definitions and the ones stipulated in GB 6932, GB 25034, CJ/T 336, CJ/T 395 are applicable to this document.

3.1 Minimum allowable values of energy efficiency for domestic gas instantaneous water heater and gas fired heating and hot water combi-boilers According to the prescribed test conditions, the minimum thermal efficiency value reached by domestic gas instantaneous water heater and gas fired heating and hot water combi-boilers.

4 Technical Requirements

4.1 Basic requirements The water heater and heating furnace applicable to this Standard shall conform to the provisions of GB 6932-2001, GB 25034-2010, CJ/T 336-2010, CJ/T 395-2012.

4.2 Energy efficiency grades The energy efficiency grades of water heater and heating furnace can be divided into three ones; thereof the Grade-1 is the highest one.

4.3 Minimum allowable values of energy efficiency The minimum allowable values of energy efficiency for water heater and heating furnace shall be Grade-3 energy efficiency stipulated in Table 1.

5 Test Methods

5.1 Domestic gas instantaneous water heater In addition to conforming to the following test conditions, the domestic gas instantaneous water heater shall also conform to the relevant

provisions of GB 6932- 2001.

5.2 Condensing domestic gas instantaneous water heater The test conditions and test methods of the condensing domestic gas instantaneous water heater shall be performed as per the requirements of CJ/T 336-2010; respectively measure the thermal efficiency for rated heat load and 50% rated heat load.

5.3 Gas-fired heating and hot water combi-boiler The test conditions in hot water state of gas-fired heating and hot water combi-boiler shall be performed as per the requirements of GB 25034-2010.

5.4 Gas-fired heating and hot water condensing combi-boilers The test conditions in hot water state of gas-fired heating and hot water condensing combi-boilers shall be performed as per CJ/T 395-2012;

6.2 Type Inspection

6.2.1 In case water heater and heating furnace occur one of the following situations, the type inspection for energy efficiency shall be performed.