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

GB 16154-2018

Replacing GB 16154-2005

**General technical specification for civil water heating coal
stoves**

民用水暖煤炉通用技术条件

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Foreword

5.2.1, 5.2.2, 5.3, 5.4.7,

5.5 of this standard are mandatory, and the rest are recommended. This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB 16154-2005 "General technical conditions for civil water heaters." This standard is compared with GB 16154-2005, except The main technical changes outside the editorial revision are as follows:

--- Removed the speed of fire (see

5.1.3.2 of the.2005 edition);

--- Redefine the rated heat supply and thermal efficiency (see

3.4 and 3.5,.2005 and

--- Increased thermal efficiency and firepower intensity indicators (see

5.2.2 and 5.2.3,.2005 edition and 5.1.3.2);

--- Increased the "air pollutant emission limit of furnaces" (see 5.3);

--- Added content for safe use requirements (see 5.5). This standard is proposed and managed by the Ministry of Agriculture and Rural Affairs of the People's Republic of China.

This standard was drafted. China Rural Energy Industry Association, Beijing Zhongyan Environmental Energy Technology Testing Center, Hebei Xinhua New Boiler Manufacturing Co., Ltd., Shandong Duole Heating Equipment Co., Ltd., Beijing Laowan Biomass Energy Technology Co., Ltd., Shijiazhuang City Chunyan Heating Equipment Co., Ltd., Hebei Guanglei Furnace Co., Ltd., Gaobeidian City Qinqin Heating Equipment Factory, Renqiu City Innovation Heating Equipment Co., Ltd., Zhangzhou Fangzheng Furnace Co., Ltd. The main drafters of this standard. Jia Zhenhang, Hao Fangzhou, Yang Mingzhen, Liu Wenyi, Sun Tiezhu, Xing Lili, Li Fenglin, Kang Tieliang, Zhang Jiayi, Liu Huqun, Guan Zhiling. The previous versions of the standards replaced by this standard are.

---GB 16154-1996, GB 16154-2005. General technical conditions for civil water heaters

1 Scope

GB 16154 is the product standard for the coal-fired stove with a water jacket used to heat a house in rural northern China - the appliance at the centre of the winter air quality problem and of the campaign to replace it. It sets the model designation, the technical requirements for thermal efficiency, heat output, flue draught, the safety of the water circuit and the emission of carbon monoxide and particulate, the test methods and the inspection rules. Being a GB without the /T suffix, it is what a stove must meet to be sold at all. Issued on 13 July 2018, in force since 1 August 2019, replacing GB 16154-2005. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the edition it replaces are taken from there. The clause text, the tables and the numeric limits are not reproduced on this page - they are in the document itself, which is delivered in full in English translation.

This standard specifies the model representation method, technical requirements, test methods, inspection rules, etc. of the civil water heater. This standard is applicable to clean coal such as briquette, washing coal, etc., with rated heat supply less than 50kW, rated working pressure as normal pressure, and circulation. The system is not more than 10m in height, and the outlet water temperature is not higher than 85°C. The civil water heating coal stove with cooking function can refer to carried out.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB 567 rupture disc safety device

GB/T 16155 Civil water heating coal stove performance test method

NY/T 1703 Civil Water Heater Heating System Installation and Acceptance Specifications

3 Terms and definitions

The following terms and definitions apply to this document. 3.1

3.2 Protect and secure the outer casing of components such as hot water jackets, furnace tiles and insulation materials.

3.3 A component made of refractory material for holding coal and forming a combustion chamber. 3.4 3.5 3.6 3.7

4 Model representation

4.1 Representation in uppercase Chinese Pinyin letters and Arabic numerals.

4.2 The model consists of five parts.

- a) The first part indicates the main use of the civil water heater;
- b) The second part indicates the type of fuel;
- c) The third part indicates the rated heat supply;
- d) The fourth part indicates the improvement of the serial number;
- e) The fifth part indicates that the furnace has an anecdote function.

4.3 The symbols and meanings of the various components of the model are as follows:

a) Part 1. Use the pinyin letter N to indicate. N

--- indicates the civil water heater.

b) Part II; expressed in Chinese Pinyin letters F or Q. F

--- indicates burning honeycomb coal; Q

--- means burning other briquette or clean coal.

c) Part III. The nominal heat supply is expressed in Arabic numerals, with one digit after the decimal point.

5.1 Basic requirements

5.1.1 Structure The structure of the stove should be reasonable in design, good in sealing, easy to operate, safe and reliable.

5.1.2 Appearance Beautiful appearance, smooth surface, no burrs.

5.1.3 Auxiliary accessories The auxiliary machine and accessories of the stove should meet the corresponding national product standards.

5.1.4 Safety device

5.1.4.1 The furnace should be equipped with rupture discs.

5.1.4.2 The bursting pressure should not exceed

0.2 MPa, and the inner diameter of the discharge hole should not be less than 25 mm.

5.1.4.3 The rupture discs shall comply with the provisions of GB 567.

5.2 Thermal performance indicators

5.2.1 The rated heat supply is not less than the nominal value.

5.2.2 Thermal efficiency η . $\eta \geq 65\%$.

5.2.3 If there is an anecdote function, its cooking intensity P_c . bituminous coal $P_c \geq 1.5\text{kW}$, anthracite, briquette $P_c \geq 1.0\text{kW}$.

5.2.4 The fire sealing capacity should be greater than 10h.

5.3 Furnace air pollutant emission limit The air pollutant emission limits of the stove are shown in Table 1. Table

1 Limits of atmospheric pollutant emission concentration of stoves Flue gas pollutant emission index Particulate matter/(mg/m³) $\leq$

50 Sulfur dioxide/(mg/m³) $\leq$ 100 NO_x/(mg/m³) $\leq$ 150 Carbon monoxide /% $\leq$

0.2 Smoke blackness (Lingeman blackness)/grade $\leq$ 1

5.4 Manufacturing requirements

5.4.1 Casting parts should be smooth and free from defects such as cracks, pores and blisters.

5.4.2 Welded parts shall be flat and uniform, without defects such as burn through, slag inclusions, pores, and incomplete penetration.

5.4.3 Stamping parts shall be free from defects such as cracks, wrinkles, flash edges and burrs.

5.4.4 The surface of sheet metal parts should be flat and free of defects such as cracks, wrinkles, bumps, etc. The machined surface should not have defects such as smashing, bumping and scratching.

5.4.5 The riveted parts should be firm and the rivets should be free from looseness and skew.

5.4.6 The outer wall surface of the furnace should be treated with anti-rust treatment. The anti-rust layer should be waterproof and not easy to fall off.