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

GB/T 13338-2018

Replacing GB/T 13338-1991

**Basic rules for the measurement and calculation of thermal
equilibrium of fuel-fired furnace in industry**

工业燃料炉热平衡测定与计算基本规则

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 13338-1991 "Basic Rules for Determination and Calculation of Thermal Balance of Industrial Fuel Furnace", and GB/T 13338-1991 Compared to the main technical changes are as follows:

- Chapter 2 "normative reference documents", updated the number, name and nature of the reference standard;
- Chapter 2 "normative reference documents", added GB/T 218, deleted the abolished standard GB 2586, GB 2588;
- Chapter 3 "Terms and Definitions", the new term "

1 Scope

GB/T 13338-2018 is the Chinese national standard on basic rules for the measurement and calculation of thermal equilibrium of fuel-fired furnace in industry, in the field of manufacturing engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 7 June 2018 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2019. Classification: ICS 25.180.10, CCS K61. 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 issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the terms and definitions of thermal equilibrium measurement and

calculation for industrial furnaces using fuel, thermal balance and heat budget, and thermal balance measurement. Requirements, calculation methods, and measurement reports. This standard applies to industrial furnaces using solid, liquid and gaseous fuels, such as rolling steel heating furnaces, soaking furnaces, heat treatment furnaces, cupolas, stepping Furnace, hood furnace, conveyor belt furnace, etc., as well as tunnel kiln, downdraft kiln and other industrial furnaces (hereinafter referred to as "industrial furnaces") for various purposes Balance measurement and calculation.

Note. The measurement items listed in this standard do not have to be carried out for all kinds of industrial furnaces. This standard does not include all the thermal balance tests of various industrial furnaces. Set the project. The measurement items of various industrial furnaces are specified in the respective heat balance standards, and the items not included in this standard are supplementally listed.

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/T 211 Determination method of total moisture in coal Industrial analysis method of
GB/T 212 coal

GB/T 214 Determination method of total sulfur in coal

GB/T 218 Determination method of carbonate carbon dioxide content in coal

GB/T 260 Determination of water content of petroleum products - Distillation method

GB/T 384 petroleum product calorimetry

GB/T 388 Determination of sulfur content of petroleum products (oxygen bomb method)
Preparation method of GB/T 474 coal sample

GB/T 475 commercial coal sample manual method

GB/T 476 Determination of carbon and hydrogen in coal

GB/T 508 petroleum product ash determination method

GB/T 1884 Laboratory test method for density of petroleum and liquid petroleum products
(densitometer method)

GB/T 1885 petroleum meter

GB/T 2587 energy-saving equipment energy balance rules

3 Terms and definitions

The following terms and definitions as defined in GB/T 2587 apply to this document.

3.1 Heating period heatingperiod The heating cycle that continues from the start of heating to the complete stop. All kinds of batch industrial furnaces are specified in the relevant standards according to the requirements of 5.2. Provisions.

3.2 Thermal stable state A thermal state of an industrial furnace where the total sum of heat (sumQr) entered into the industrial furnace system is equal to the sum of the system's heat expenditure

3.2 Thermal Stability" "

3.3 Effective Heat" and its definition;

5.5.2.1 Determination of fuel consumption", increase "gas flow meter and according to pressure";

5.5.2.2 Sampling analysis of fuel and determination of calorific value", clarifying the calorific value of solid fuel, liquid fuel and gaseous fuel Determination together and calculation method;

5.5.3.2 Air temperature" increased "cold thermometer, hot air thermocouple";

5.5.7.3 Material temperature" increased "radiation pyrometer";

6.1.3 Physical heat brought into by combustion air", regarding "b) gas fuel air coefficient , analysis and fuel by furnace flue gas The composition is calculated as follows: ", a simplified formula is added;

6.4 Thermal efficiency", added "equipment thermal efficiency refers to the effective use of energy in order to achieve a specific purpose The quantitative representation is equal to the percentage of effective energy and energy supplied. This standard was proposed by the China Electrical Equipment Industry Association. This standard is under the jurisdiction of the National Technical Committee for Standardization of Industrial Electric Heating Equipment (SAC/TC121). This standard was drafted. Xi'an Electric Furnace Research Institute Co., Ltd., Suzhou Xinchangguang Thermal Energy Technology Co., Ltd., Shaanxi Kehui Thermal Technology Limited liability company, National Electric Furnace Quality Supervision and Inspection Center, China Electrotechnical Society Electric Heating Professional Committee. The main drafters of this standard. Wang Zhichao, Chen Jinge, Zhang Jianlian, Yu Weijiang, Li Wei, Yuan Fanglan, Zhang Yongwu, Tong Binbin. The previous versions of the standards replaced by this standard are.

---GB/T 13338-1991. Basic rules for the determination and calculation of thermal balance of industrial fuel furnaces