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

GB/T 14403-2014

Replacing GB/T 14403-1993

Test method for combustion heat release of building materials

建筑材料燃烧释放热量试验方法

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1 Scope

GB/T 14403-2014 is the Chinese national standard on test method for combustion heat release of building materials, in the field of environment and health protection, safety. 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 27 March 2014 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 October 2014. Classification: ICS 13.220.40, CCS C80. 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, test equipment, sample preparation, test conditions, test procedures, test results expression, and test reports for the combustion heat release of building materials,. This standard applies to the combustion test of the flat-like building materials which will not generate combustion melt droplets, in order to measure its unit area mass loss and combustion heat release.

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 Standard.

GB/T 5907 Fire protection vocabulary - Part 1. General terms

GB/T 14107 Terminology of fire protection - Part 2

GB/T 14402 Reaction to fire tests for building materials and products - Determination of the heat of combustion

3 Terms and definitions

The terms and definitions as defined in GB/T 5907 and GB/T 14107 AND the following terms and definitions apply to this document.

3.1 Net heat of combustion It refers to the heat as released from the complete combustion of the unit mass material wherein the water (including the water vapor generated from the moisture contained in the material AND the water vapor generated in the combustion of hydrogen as contained in the material) in the combustion

4.2.1 Thermocouple Furnace inside temperature is measured by an armored thermocouple of level II accuracy, measuring range 0 °C ~ 1100 °C, outer diameter 3 mm, AND equipped with protective sleeve. The armoring and protective sleeve shall be steel materials with resistance to fouling. The distance from the temperature measuring point in which the thermocouple inserts to the sample surface center is 100 mm ± 5 mm.

4.2.2 Pressure measuring device The static pressure in the furnace shall be measured by a steel sampling catheter with an inner diameter of 15 mm ± 5 mm. The installation position is as shown in section A-A and C-C of Figure 1.

5 Test conditions

5.1 It shall install one sample for each test, AND the other openings of the test furnace shall be sealed with refractory bricks of the same thickness and density as the furnace wall and the furnace lid.

5.2 The combustion chamber inside temperature shall be not less than 15 °C or higher than 25 °C 24 h before the test.

5.3 The burner fuel is the domestic No.0 or -10 light diesel.

5.4 After 5 min of the test, the sample shall be subjected to continuous test under the conditions that the inside pressure of the combustion chamber reaches to

9 Test report

The test results are only relevant to the performance of the sample under specific test

conditions, AND they shall not be used as a sole basis for evaluating the potential fire hazard in the actual use of the material. The test report shall include the following basic information.

- a) Name and address of the laboratory;
- b) The standard on which the test is based;
- c) Building material name, model specifications, name and address of manufacturer, and date of production;
- d) The appearance, thickness, composition and mass per unit area of the sample;
- e) The sample size, test surface;
- f) The number of tests;
- g) The test results, including the mass loss per unit area of the sample and its arithmetic mean, and combustion heat release;
- h) The combustion products of the sample;

10 Pa ±

2 Pa. The deviation between the furnace inside temperature and the time-temperature standard curve shall not exceed $\pm 15^\circ\text{C}$. The function expression of the time-temperature standard curve is as shown in the equation (1). Where. T - The value of the furnace inside temperature at the time t , in the unit of degrees Celsius ($^\circ\text{C}$); T_0 - The initial temperature value in the furnace, in degrees Celsius ($^\circ\text{C}$); t - The value of the test time, in minutes (min). Where. Q_{chr} - Combustion heat release, in megajoule per square meter (MJ/m^2); PCI - Net heat of combustion, in megajoule per kilogram (MJ/kg); Δm - The mass loss per unit area, in kilograms per square meter (kg/m^2).