

Translated English of Chinese Standard: GB/T14403-2014

www.ChineseStandard.net

Sales@ChineseStandard.net

GB

NATIONAL STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 13.220.40

C 80

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

GB/T 14403-2014 How to BUY & immediately GET a full-copy of this standard?

1. www.ChineseStandard.net;
2. Search --> Add to Cart --> Checkout (3-steps);
3. No action is required - Full-copy of this standard will be automatically & immediately delivered to your EMAIL address in 0~25 minutes.
4. Support: Sales@ChineseStandard.net. Wayne, Sales manager

Issued on: June 09, 2014

Implemented on: October 01, 2014

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;

Standardization Administration of the People's Republic of China.

Table of contents

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Test device	5
5 Test conditions	7
6 Sample preparation	8
7 Test procedures	8
8 Expression of test results	9
9 Test report.....	10

Test method for combustion heat release of building materials

1 Scope

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 10 Pa ± 2 Pa. The deviation between the furnace inside temperature and the time-temperature standard curve shall not exceed ± 15 °C. The function expression of the time-temperature standard curve is as shown in the equation (1):

$$T - T_0 = 345 \lg(8t + 1) \quad \dots\dots\dots (1)$$

Where:

T - The value of the furnace inside temperature at the time t, in the unit of degrees Celsius (°C);

T₀ - The initial temperature value in the furnace, in degrees Celsius (°C);

t - The value of the test time, in minutes (min).

$$Q_{chr} = PCI \times \Delta m \quad \dots\dots\dots (3)$$

Where:

Q_{chr} - Combustion heat release, in megajoule per square meter (MJ/m²);

PCI - Net heat of combustion, in megajoule per kilogram (MJ/kg);

Δm - The mass loss per unit area, in kilograms per square meter (kg/m²).

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;
- i) Test date.

_____ **END** _____

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----