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

GB/T 16810-2026

Replacing GB/T 16810-2006

Tests and requirements for the fire resistance of safes

保险柜耐火性能要求和试验方法

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 16810-2006 "Requirements and Test Methods for Fire Resistance Performance of Safes". Compared with GB/T 16810-2006, Apart from structural adjustments and editorial changes, the main technical changes are as follows:

---The classification by operating temperature of stored items, by type of fire resistance test, and by fire resistance test time has been changed (see 4.1.1, 4.1.2, 4.1.4). (Sections 4.1, 4.2.1, and

4.2.2 of the.2006 edition)

---Added categorization by additional feature type (see 4.1.3);

---The fire resistance designation has been changed (see 4.2, 4.4 in the.2006 edition);

- The classification by structural type has been removed (see section 4.3 of the.2006 edition);
- Changes were made to the fire resistance requirements and the availability of stored items (see Chapter 5, Chapter 5 of the.2006 edition);
- The fire resistance designation has been changed (see 6.3, Chapter 13 of the.2006 edition);
- Added an internal pressure measurement probe, an internal humidity sensor, and a water impact testing device (see 7.3, 7.5, 7.7);
- The arrangement of temperature measurement points inside the specimen has been changed (see 8.1.2, 8.1.3, and 8.1.2 in the.2006 version);

1 Scope

GB/T 16810-2026 is the Chinese national standard covering how long a safe protects what is inside it in a fire - the furnace test with the interior temperature and humidity monitored against the limit that paper, or media, can survive, followed by a drop test onto rubble. It replaces GB/T 16810-2006 and has been in force since 1 October 2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, replacing GB/T 16810-2006. The document is under the responsibility of the National Fire and Rescue Administration. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the fire resistance performance requirements and test specimen requirements for safes, and describes the fire resistance test, fire resistance drop test, rapid heating test, and rapid... A method for heating, fire resistance, and drop resistance testing. This document applies to fire resistance testing of safes containing paper, storage equipment, valuables, etc.

4.1 Classification and Codes

4.1.1 Classification and Codes Based on the Operating Temperature of Stored Items Safes are classified and coded according to the operating temperature of the stored items, as specified in Table 1.

4.1.2 Classification and Codes by Fire Resistance Test Type Safes are classified and designated according to the type of fire resistance test, as specified in Table 2.

4.1.3 Classification and Codes by Additional Function Type Safes are classified and coded according to their additional functions as specified in Table 3.

4.1.4 Classification and Codes by Fire Resistance Test Time Safes are classified and designated according to their fire resistance test time, as specified in Table 4.

4.2 Fire resistance code The designation of fire resistance codes is shown in Figure 1.

5 Fire resistance requirements

5.1 Fire resistance The fire resistance of the safe should meet the requirements of Table 5.

5.2 Availability of stored items

5.2.1 Newsprint used for testing inside the safe refers to ordinary newsprint, magazine paper with or without a cover. Magazine paper without a cover... The pH of the paper surface should be less than 7.0.

5.2.2 Before the fire resistance test, ensure that the stored items for the test inside the safe are available.

5.2.3 After the fire resistance test, the stored items inside the safe are considered usable if they meet the following conditions.

- a) The newsprint is not broken, cracked, stuck together and cannot be separated, and shows no obvious discoloration or deterioration;
- b) After the water shock test (where applicable), the stored items should not show obvious signs of soaking;
- c) The contents of M-type items are readable and none are missing;
- d) Category Q items should meet the requirements stated by the enterprise.

6 Specimen Requirements

6.1 Specimen Selection Representative specimens of the same product model were selected for testing. Tests were conducted on aspects such as structure, materials, wall thickness, hinges, and the number of doors (drawers). All products are identical except for their size; the product with the largest size is selected as the test specimen.

6.2 Number of Specimens Only fire resistance testing is conducted, with one specimen. The tests include fire resistance and fire drop resistance tests, fire resistance and rapid heating tests, and fire resistance... For both the fire test and the rapid heating combined with fire resistance and drop test, the number of specimens is 2, and the 2 specimens should be completely identical.

6.3 Fire resistance rating Each safe's nameplate should contain the following information.

- a) The fire resistance rating of the safe as determined by tests according to this document;

b) Implementation standards.

7 Experimental Apparatus and Testing Instruments

7.1 Refractory Testing Furnace The refractory test furnace shall comply with the provisions of GB/T 9978.1 and meet the requirements of this document for refractory test, refractory drop test, and emergency loading test. Requirements for different heating conditions in thermal tests.

7.2 Furnace internal temperature thermocouple The thermocouples used for furnace temperature control should comply with the requirements of GB/T 9978.1.

7.3 Furnace internal pressure measurement probe The pressure measurement probe inside the furnace shall comply with the requirements of GB/T 9978.1.

7.4 Thermocouple for internal temperature of the specimen The thermocouple wire diameter for measuring the internal temperature of the specimen is

0.5 mm, and the maximum permissible deviation should not be lower than level 2 in GB/T 16839.1.

7.5 Internal humidity sensor of the specimen The allowable deviation for sensors measuring the internal humidity of the specimen is $\pm 5\%$.

7.6 Specimen Lifting Device In the fire resistance and drop test, the lifting device should be able to lift the specimen to a height of 9.1m.

7.7 Water Impact Test Apparatus The water impact testing apparatus shall comply with the provisions of GB/T 26784.

8.1 Arrangement of temperature measurement points inside the specimen

8.1.1 General Requirements The arrangement of temperature measuring points inside the specimen should not affect the specimen's sealing performance, and the maximum permissible error for arranging the temperature measuring points is $\pm 2\text{mm}$.

8.1.2 Arrangement of internal temperature measurement points for Class H specimens

8.1.2.1 For the single-leaf door specimen, four temperature measuring points are arranged in each independent structure inside, all 150 mm from the inner top and 150 mm from the inner sidewall. 25mm. The first two temperature measuring points are 25mm from the inner surface of the door leaf, and the last two temperature measuring points are 150mm from the inner rear wall, as shown in Figure 2.

8.1.2.2 For test specimens of double-leaf doors, in addition to the four temperature measuring points arranged as per 8.1.2.1, a fifth temperature measuring point should be