

Translated English of Chinese Standard: GB 20286-2006
www.ChineseStandard.net → Buy True-PDF → Auto-delivery.
Sales@ChineseStandard.net

GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 13.220.50

Q 10

GB 20286-2006

**Requirements and mark on burning behavior of fire
retarding products and subassemblies in public place**

公共场所阻燃制品及组件燃烧性能要求和标识

Issued on: June 19, 2006

Implemented on: March 1, 2007

**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	5
4 Classification, grading and naming	6
5 Burning behavior requirements.....	7
6 Marking	10
7 Test reports	12
Annex A (Informative) Public places as specified in Orders No. 39 and No. 61 of the Ministry of Public Security	14
Annex B (Normative) Method for testing the burning behavior of upholstered furniture which is exposed to an open flame ignition source.....	15
Annex C (Normative) Method for testing burning behavior of subassemblies and furniture which are exposed to an open flame ignition source	21
Annex D (Normative) Use of fire retarding products in public places.....	25

Foreword

Clauses 5 and 6 of this Standard are compulsory; the rest are voluntary.

This Standard was drafted in accordance with GB 8624, *Classification for burning behavior of building materials and products*, and GB 50222, *Code for fire prevention in design of interior decoration of buildings*, taking into consideration the actual applications of related products in China.

Annex A to this Standard is informative; Annexes B, C and D are normative.

This Standard was proposed by Ministry of Public Security of the People's Republic of China.

This Standard shall be under the jurisdiction of Subcommittee on Fire Protection Materials of National Technical Committee on Fire Protection of Standardization Administration of China.

The responsible drafting organizations of this Standard: Sichuan Fire Research Institute of Ministry of Public Security, China Fire Retardant Society, China Textile Academy, China Academy of Building Research.

The contributory drafting organizations of this Standard: China National Furniture Association, Sichuan University, Fuexin Textile Fire Retarding Materials Co., Ltd., Chengdu Railway Fire Prevention Products Factory, Shandong Huamao Fire Retarding New Materials Technology Co., Ltd.

The main drafters of this Standard: Gao Wei, Lu Guojian, Zhou Zhengmao, Xu Lu, Qian Jianmin, Zhang Yu, Ji Guangqi, Zhao Chenggang, Ma Yi, Wang Yuzhong, Ma Daozhen, Liu Yingjun, Kuang Tianshen, Huang Xianbo.

Requirements and mark on burning behavior of fire retarding products and subassemblies in public place

1 Scope

This Standard specifies the definitions and classification, requirements and marking for burning behavior of fire retarding products and subassemblies in public places.

This Standard applies to the fire retarding products and subassemblies in public places (refer to Annex A) as specified in Order No. 39 and Order No. 61 of the Ministry of Public Security.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 2408, *Plastics – Determination of burning characteristics – Horizontal and vertical test* (GB/T 2408-1996, eqv ISO 1210:1992)

GB 4943-2001, *Safety of information technology equipment* (idt IEC 609650:1999)

GB/T 5454, *Textiles – Burning behavior – Oxygen index method* (GB/T 5454-1997, neq ISO 4589:1984)

GB/T 5455, *Textiles – Burning behavior – Vertical method*

GB/T 8333, *Test method for flammability of rigid cellular plastic – Vertical burning method*

GB 8624, *Classification for burning behavior of building materials and products*

GB/T 8627, *Test method for density of smoke from the burning or decomposition of building materials*

GB/T 11020, *Test methods for the determination of the flammability of solid*

materials.

3.3

fire retarding

Suppression, mitigation or termination of flame propagation.

4 Classification, grading and naming

4.1 Classification

Fire retarding products and subassemblies in public places can be classified into 6 categories:

- a) fire retarding building products;
- b) fire retarding fabrics;
- c) fire retarding plastics/rubbers;
- d) fire retarding foam plastics;
- e) fire retarding furniture and subassemblies;
- f) fire retarding wires and cables.

4.2 Grading

Fire retarding products and subassemblies (except building products) in public places can be classified into 2 grades in accordance with the burning behavior:

- fire retarding grade 1;
- fire retarding grade 2.

4.3 Naming

Fire retarding products (except building products) are named using the following method: the category of products is indicated within the brackets behind the fire retarding grade; fire retarding wires and cables shall also be indicated of the category of fire retarding samples; fire retarding fabrics shall be indicated whether they are washable; washable fabrics shall also be indicated within the brackets washable type and washable times. The examples of names and codes of all kinds of fire retarding products are as follows:

grade one non-washable fire retarding fabrics	fire retarding grade 1 (fabrics, non-washable)
---	--

Annex A

(Informative)

Public places as specified in Orders No. 39 and No. 61 of the Ministry of Public Security

A.1 The public venues for entertainment as specified in Order No. 39 of the Ministry of Public Security, *Provisions on the Administration of Fire Safety in Public Entertainment Venues*, include:

- a) places for performance and projection such as movie theaters, video theaters and auditoriums;
- b) entertainment venues for singing and dancing such as ballrooms and karaoke lounges;
- c) night clubs, music cages and dining places which have an entertainment function;
- d) recreational, amusement places;
- e) commercial fitness and leisure places such as bowling alleys, roller rinks and sauna bathrooms.

A.2 The public places as specified in Order No. 61 of the Ministry of Public Security, *Provisions on the Administration of Fire Control Safety of State Organs, Organizations, Enterprises and Institutions*, include:

- a) public gathering places such as shopping malls (marketplaces), hotels (restaurants), stadiums (gymnasiums), assembly halls and public entertainment venues (collectively called public gathering places);
- b) hospitals, nursing homes and boarding schools, nurseries and kindergartens;
- c) passenger stations, wharves and civil airports;
- d) culture relic protection sites which have fire risks, such as public libraries, exhibition halls, museums and archives.

Annex C

(Normative)

Method for testing burning behavior of subassemblies and furniture which are exposed to an open flame ignition source

C.1 Scope of application

This Annex specifies the method for testing burning behavior of subassemblies and furniture which are exposed to an open flame ignition source.

This Annex applies to assemblies and furniture or the solid models of subassemblies and furniture.

C.2 Test apparatus

C.2.1 The test apparatus consist of ignition source, conical collector, smoke exhaust pipe, fan, weighing platform, measuring device and so on.

C.2.2 When an ignition source is used as specified in 3.3 of GA 111-1995, the ignition source can be moved as needed and fixed securely. The igniter can be fueled by industrial propane or natural gas.

C.3 Measuring device

C.3.1 For the measuring device for the volume flow rate of gases see 5.2.1 of GA 111-1995.

C.3.2 For the gas sampling and gas analyzing apparatus see 5.3.1 and 5.3.2.1 ~ 5.3.2.2 of GA 111-1995.

C.3.3 For the measuring device for smoke density see 5.4 of GA 111-1995.

C.3.4 The mass loss of test samples is weighed using the weighing platform, which comply with the following requirements:

- a) During the test, use the weighing platform to support test samples; place one piece of reinforced inorganic board of $(1.2\text{ m} \pm 0.1\text{ m}) \times (2.4\text{ m} \pm 0.1\text{ m})$ on the platform; the boundaries of the weighing platform are $100\text{ mm} \pm 10\text{ mm}$ beyond the upper surface of the inorganic board to prevent test materials from overflowing.
- b) The measuring range of the weighing platform is not less than 90 kg with the

C.6.4 Adjust the gas flow to the specified value to make the heat release output at 100 kW.

C.6.5 Open the gas valve; the igniter is fired at the same time.

C.6.6 Increase the air output of the fan to ensure all products generated by sample combustion can be collected.

C.6.7 After 10 min of ignition, turn off the igniter.

C.6.8 In case of one of the following cases, stop the test:

- a) after the igniter is turned off, all flame combustion stops;
- b) the test is carried out for 30 min.

C.6.9 During the process of the test, take photographs and videos of samples.

C.6.10 After the completion of the test, print out test data.

C.7 Test records

Test records shall include the following content:

- a) the name of sample manufacturer or sample provider;
- b) the description of samples (including the detailed description of the structure and materials of samples);
- c) the dimensions, weight or density of samples;
- d) the test data and test participants;
- e) the test results.
 - 1) the heat release rate-time curve;
 - 2) the total heat release-time curve;
 - 3) the concentration of carbon dioxide;
 - 4) the concentration of carbon monoxide;
 - 5) the concentration of smoke;
 - 6) the mass loss rate;
 - 7) the stop time of flame combustion;

Annex D

(Normative)

Use of fire retarding products in public places

D.1 For building products (including floor coverings) used for ceilings, walls, floors, built-in furniture and so on, when the fire prevention codes for design specify that a product of higher burning behavior grade is required to be used, such fire prevention codes shall be implemented as specified.

D.2 For the cabinets and countertops used in the kitchen: the burning behavior of their materials shall not be lower than grade B as specified in GB 8624; the smoke density rating shall not be lower than grade s2; the additional grade of flaming droplets/particles shall not be lower than grade d1; the smoke toxicity grade shall not be lower than grade t1. For the gas pipes and electric conduits which are made of plastics, the burning behavior of their materials shall not be lower than fire retarding grade 1 as specified in Table 2.

D.3 The furniture and subassemblies used in public places including seats, sofas and mattresses, except that the foam plastics and fabrics used need to comply with the requirements of this Standard, the furniture and subassemblies themselves shall also comply with the requirements of this Standard.

D.4 For the decorative upholsteries used for ceilings and walls in public places: the burning behavior of their materials shall not be lower than grade C as specified in GB 8624; the smoke density rating shall not be lower than grade s2; the additional grade of flaming droplets/particles shall not be lower than grade d1; the smoke toxicity grade shall not be lower than grade t1.

D.5 For the fire retarding wires/cables and the electric appliances which may cause heat, used in public places, fire retarding wire conduits or fireproof materials shall be used for protection when they are arranged on combustible materials.

D.6 When non-washable fire retarding fabrics are used, fire retarding treatment shall be carried out once again after washing for each time; their fire retarding performance shall be as required by this Standard. When washable fire retarding fabrics are used, their use can be continued only when they pass the inspection once again when their washing times exceed the washing times indicated in marking. The fire retarding fabrics which require washing frequently, such as curtains, heavy curtains and bedspreads, shall be washable fire retarding fabrics.

D.7 When fire retarding foam plastics are used as thermal insulation materials at evacuation exits and in places where there are intensive human activities, the surface

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 -----