

Content

Title :	Operation Directions Governing the Inspection of Fire-retardant Construction Materials <b>Ch</b>
Date :	2023.10.27
Legislative :	<p>1. Adopted and promulgated by the Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs on 10 July 2009</p> <p>2. Amended and promulgated by the Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs on 30 December 2013.</p> <p>3. Amended and promulgated by the Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs on 23 November 2022, entering into force on the date of promulgation, except for Clauses 3 to 6, 8 and 15, with the date of entry into force on 1 November 2023.</p> <p>4. Clauses 4, 9, 15, 19, 20 and Form FRP-01 amended and promulgated by the Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs on 27 October 2023, entering into force on the date of promulgation, except for Clauses 4 and 15, with the date of entry into force on 1 November 2023.</p>
Content :	<p><b>Chapter 1 General Rules</b></p> <p>1. These Directions are stipulated by the Bureau of Standards, Metrology and Inspection (BMSI) for implementing the inspection of fire-retardant construction materials.</p> <p>2. The provisions are applicable to fire-retardant construction materials as defined below: (1) Boards: a. Dressed rockwool boards for acoustic use: those with a thickness above the minimum thickness specified by relevant national standards up to 20 mm. b. Calcium silicate boards, fiber cement boards, regenerated fiber cement boards, cement bonded wood-wool boards, cement bonded wood-flake boards, gypsum board, slag gypsum boards, decorative exterior panel of fiber reinforced cement sidings (class D), fire-retardant hard fiberboards, fire-retardant insulation fiberboards and fire-retardant plywood: those with a thickness above the minimum thickness specified by relevant national standards. (2) Wall papers: wall papers (coverings) claiming to be incombustible or with fire-retardant, flame-retardant related performance.</p> <p>3. Inspection schemes: (1) Dressed rockwool boards for acoustic use, calcium silicate boards, fiber cement boards, regenerated fiber cement boards, cement bonded wood-wool boards, cement bonded wood-flake boards, gypsum boards, slag gypsum boards, decorative exterior panel of fiber reinforced cement sidings (class D), fire-retardant hard fiberboards and fire-retardant insulation fiberboards: Type-Approved Batch Inspection or Registration of Product Certification (Module II+IV, V or VII). (2) Fire-retardant plywood: Monitoring Inspection or Registration of Product Certification (Module II+IV, V or VII). (3) Wall papers: Monitoring Inspection or Registration of Product Certification (Module II+III).</p> <p>4. Inspection items: (1) Dressed rockwool boards for acoustic use, cement bonded wood-wool boards and cement bonded wood-flake boards: incombustibility, bending strength, and Chinese label. (2) Gypsum board (whether or not it has the function of moisture absorption and desorption): a. Ordinary gypsum board: incombustibility, bending strength, and Chinese labeling. b. Ordinary hard gypsum boards, decorated gypsum boards, decorated hard gypsum boards,</p>

fire-resistant gypsum boards, and grade-1 incombustibility laminated gypsum board [applicable to those with surface decoration, but not with surface die processing]: incombustibility, bending strength, impact resistance and Chinese labeling.

c. Gypsum sheathing boards: incombustibility, bending strength, peeling resistance in absorbing water and Chinese labeling.

d. Hard gypsum sheathing boards: incombustibility, bending strength, impact resistance, peeling resistance in absorbing water and Chinese labeling.

(3) Slag gypsum boards and calcium silicate boards (type a, c): incombustibility, flexural strength and Chinese labeling (for type a calcium silicate boards, an additional item on their bulk density).

(4) Fiber cement boards, regenerated fiber cement boards and decorative exterior panel of fiber reinforced cement sidings (class D): incombustibility, bending strength, impact resistance and Chinese labeling (for fiber cement boards and regenerated fiber cement boards, an additional item on their bulk density).

(5) Fire-retardant decorated hard fiber boards: incombustibility, impact resistance and Chinese labeling; for those using formaldehyde-based resins, an additional item on "formaldehyde emission."

(6) Plain fire-retardant hard fiberboards and fire-retardant insulation fiberboards: incombustibility, flexural strength and Chinese labeling; for those using formaldehyde-based resins, an additional item on "formaldehyde emission."

(7) Fire-retardant plywood: incombustibility, formaldehyde emission and Chinese labeling.

(8) Wall papers: incombustibility and Chinese labeling.

## Chapter 2 Requirements for Monitoring Inspection

### 5. Simplified Procedures:

#### (1) Fire-retardant plywood:

a. The fire-retardant plywood covered in the same batch of inspection application shall be of the same Commodity Classification of the Republic of China (C.C.C.) codes, the same country of origin, the same production premises or brands, the same thickness, the same grade of incombustibility and the same types.

b. Where the same batch of commodities of an applicant passes batch inspection in three consecutive batches, the rate of each batch afterwards sampled for inspection shall be reduced to 20%. Where non-compliance is found for twenty or more batches, the rate of each batch afterwards sampled for inspection shall be further reduced to 10%. The inspection items are the same as those specified in the preceding clause.

c. Where non-compliance is found, each batch of the commodities covered in the inspection application, that are of the same C.C.C. codes, the same country of origin, the same production premises or brands, the same thickness, the same grade of incombustibility and the same types, shall be sampled for inspection. The rate of 20% shall be resumed after compliance of three consecutive batches.

d. Batches not sampled for inspection are subject to checks of the appearance and the Commodity Inspection Mark, where necessary samples shall be taken for inspection. Exemption from checks of the appearance and the Commodity Inspection Mark mentioned earlier is granted on the condition that the inspection applicant completes the relevant labeling without applying for prior release of their fire-retardant plywood for ten consecutive times and approved to be in compliance with the requirements by the BSMI or its branches (hereinafter referred to as the inspection authority).

#### (2) Wall Papers:

a. The fire-retardant wall papers or paper coverings covered in the same batch of inspection application shall be of the same C.C.C. codes, the same country of origin and the same production premises or brands.

b. Where the same batch of commodities of an applicant passes batch inspection for the first batch, the rate of each batch afterwards sampled for inspection shall be reduced to 20%. Where non-compliance is found for twenty or more batches, the rate of each batch afterwards sampled for inspection shall be further reduced to 10%. The inspection items are the same as those specified in the preceding clause.

c. Where non-compliance is found, one batch of the commodities covered in the inspection application, that are of the same C.C.C. codes, the same country of origin and the same production premises or brands, shall be sampled for inspection. The rate of 20% shall be resumed after compliance of that batch.

d. Batches not sampled for inspection are subject to checks of the appearance and the Commodity Inspection Mark, where necessary samples shall be taken for inspection. Exemption from checks of

the appearance and the Commodity Inspection Mark mentioned earlier is granted on the condition that the inspection applicant completes the relevant labeling without applying for prior release of their wall papers for ten consecutive times and approved to be in compliance with the requirements by the inspection authority.

6. Quantity of Samples Taken for Inspection:

- (1) Fire-retardant plywood: more than 2 pieces of finished products, each with an area of at least 1.44 square meters.
- (2) Wall papers: at least 2 pieces of finished products are sampled for each classification of types and materials, with a length of at least 1,000 mm for each sampled piece.

7. Inspection agency: the BSMI, its Keelung Branch, Taichung Branch and Kaohsiung Branch.

8. Inspection Time:

- (1) Fire-retardant plywood: nine working days upon receipt of the samples for grade-1 incombustibility products, seven working days upon receipt of the samples for grade-2 and grade-3 incombustibility products.
- (2) Wall papers: Eight working days upon receipt of the samples.

Chapter 3 Relevant Requirements for Type Test

9. Principles of Type Determination:

(1) Fiber cement boards, regenerated fiber cement boards, calcium silicate boards, slag gypsum boards, cement bonded wood-wool boards, cement bonded wood-flake boards and fire-retardant insulation fiberboards:

- a. Same type: those with the same production premise (including plants at different locations of the production premise), classification (classified based on bulk density) and incombustibility.
  - b. Main type: among products of the same type, the one with the least thickness shall be regarded as the main type.
  - c. Series of type: among products of the same type, those other than the main type shall be regarded as series of type.
  - d. Under the same type, where there are general boards and decorated boards, the general boards with the least thickness are regarded as the main type, while the general boards with other thicknesses and decorated boards are listed as series of type.
- (2) Dressed rockwool boards for acoustic use, gypsum boards, fire-retardant hard fiberboards and fire-retardant plywood:
- a. Same type: those with the same production premise (including plants at different locations of the production premise) and incombustibility.
  - b. Main type: among products of the same type, the one with the least thickness shall be regarded as the main type.
  - c. Series of type: among products of the same type, those other than the main type, e.g. with other thickness, shall be regarded as series of type.
  - d. Under the same type, where there are general boards and decorated boards, the general boards with the least thickness are regarded as the main type, while the general boards with other thicknesses and decorated boards are listed as series of type.

(3) Decorative exterior panel of fiber reinforced cement sidings (class D):

- a. Same type: those with the same production premise (including plants at different locations of the production premise) and incombustibility.
- b. Main type: among products of the same type, the one with the least thickness shall be regarded as the main type.
- c. Series of type: among products of the same type, those other than the main type, e.g. with other thickness, shall be regarded as series of type.
- d. Under the same type, where there are hollow boards and solid boards, the hollow boards with the least thickness are regarded as the main type, while the hollow boards with other thicknesses and solid boards are listed as series of type.

(4) Wall papers:

- a. Same type: those with the same production premise (including plants at different locations of the production premise). The ones with different colors of the same name shall be regarded as one type, represented by codes with descriptors [e.g. elegance (XXXXX)].
- b. Main type: among products of the same type, select any one as the main type.
- c. Series of type: among products of the same type, those other than the main type shall be regarded as series of type [e.g. sun (XXXXX) or moon (XXXXX)].

10. The applicant shall apply for type tests to the inspection authority or BSMI designated testing laboratories by submitting a type classification table (Form FRP-01, FRP-02 or FRP-03), the following technical documents and samples:

- (1) Product-component table, specimen of Chinese label, and a list of specifications (including composition, appearance, descriptions of surface processing and cross-sectional view of the product composition).
- (2) Color photographs (4"×6" or larger) of finished products or color catalog provided by the manufacturer.
- (3) Summary of production processes (including fire-retardant treatment process; an additional self-declaration of whether formaldehyde resin is used for fire-retardant hard fiberboards and fire-retardant insulation fiberboards).
- (4) For dressed rockwool boards for acoustic use, a test report issued by a third-party testing laboratory on the absence of asbestos in any product of the same type is required.
- (5) For calcium silicate boards, fiber cement boards, regenerated fiber cement boards, cement bonded wood-wool boards, cement bonded wood-flake boards, gypsum boards, slag gypsum boards and decorative exterior panel of fiber reinforced cement sidings (class D), a test report issued by a third-party testing laboratory on the absence of asbestos and a test report on the "total content of chloride ion" showing compliance with the corresponding standard in any of the products of the same type are required.
- (6) For gypsum board products with the function of moisture absorption and desorption, a test report issued by a third-party testing laboratory on the moisture absorption and desorption function of any product of the same type is also required in addition to those mentioned in the preceding paragraph.

#### 11. Principles of Type Test:

- (1) Decorative exterior panel of fiber reinforced cement sidings (class D):
  - a. For products of the same type where only solid boards or hollow boards are available: the greatest thickness ones of the main type and series of type are sampled for testing.
  - b. For products of the same type where both solid boards and hollow boards are available: the greatest thickness ones of the main type and series of type from hollow boards, and the smallest thickness of series of type from solid boards are sampled for testing.
- (2) For boards other than decorative exterior panel of fiber reinforced cement sidings (class D): the greatest thickness ones of the main type and series of type are sampled for testing.
- (3) For the above-mentioned products with general boards and decorated boards under same type: the greatest thickness ones of the main type and series of type from general boards, and the smallest thickness ones of series of type from decorated boards are sampled for testing.
- (4) Wall papers: one product of the main type is sampled (for example, elegance [12345]) and one product of the series of type is sampled for each type (for example, sun [12345], moon [12345], etc.) for testing.

12. Where any changes or modifications are made to the products, an application shall be made to the inspection authority or BSMI designated testing laboratory that issued the original test report for renewed test reports. The following test principles shall apply:

- (1) Decorative exterior panel of fiber reinforced cement sidings (class D):
  - a. For products of the same type where only solid boards or hollow boards are available: where ones with less thickness of the main type are added, tests shall be performed on ones with that thickness, which shall be listed as the main type; where ones with more thickness of series of type are added, tests shall be performed on those with more thickness.
  - b. For products of the same type where both solid boards and hollow boards are available: where ones with less thickness of the main type for hollow boards are added, tests shall be performed on ones with that thickness, which shall be listed as the main type; where ones with more thickness of series of type are added, tests shall be performed on those with more thickness; where ones with less thickness of the main type for solid boards are added, tests shall be performed on those with less thickness.
- (2) For boards other than decorative exterior panel of fiber reinforced cement sidings (class D): where ones with less thickness of the main type are added, tests shall be performed on ones with

that thickness, which shall be listed as the main type; where ones with more thickness of series of type are added, tests shall be performed on those with more thickness.

(3)For the above-mentioned products with general boards and decorated boards under same type: where ones with less thickness of the main type for general boards are added, tests shall be performed on ones with that thickness, which shall be listed as the main type; where ones with more thickness of series of type are added, tests shall be performed on those with more thickness; where ones with less thickness of the main type for decorated boards are added, tests shall be performed on those with less thickness.

(4)Wall papers: where series of type are added, one product from those series of type is sampled for testing.

13.The test items of the preceding two clauses are the same as those stated in Clause 4.

#### Chapter 4 Requirements for Type-Approved Batch Inspection

##### 14.Application Procedures for Type Approval:

(1)The applicant shall apply to the inspection authority for type approval by submitting the application form, type test reports mentioned in Clause 10 and technical documents to obtain type approval certificates.

(2)The type test report may be replaced by a test report under the CNS Mark Certification system of which the issuance date shall be within one year prior to the date of application for type approval and the tested samples are drawn following the same sampling principles for type test. One CNS Mark test report can be only used to replace the type test report for one main type or one series of type.

(3)Under the condition that changes are not made to the specifications of fire-retardant construction materials, the inspection reports issued based on sampling tests within one year prior to the date of application may be used in place of type test reports on incombustibility for the main type or series of type.

(4)Processing time for reviewing type-approval applications: 14 working days after the inspection authority accepts the application (not including the time for delivery of documents or samples). Where additional samples are drawn for testing, such period shall be extended to another 7 working days after receipt of samples.

(5)The terms of validity for a type-approval certificate shall be three years. The certificate holder may apply for an extension of the validity period.

##### 15.Requirements for batch inspection:

(1)The obligatory inspection applicant shall make the application for inspection to the inspection authority having jurisdiction over the port of entry or location of the production premise by submitting an application form and a copy of the type-approval certificate before the products are imported or released from the production premise. The obligatory inspection applicant shall indicate the production date or batch number of the product on the application form.

(2)The products of the same batch shall be fire-retardant construction materials of the same type.

(3)The inspection authority may sample products for inspection based on a rate of 10%. Where applications for inspection have reached 20 batches or more without non-compliance records, the sampling rate of each batch may be reduced to 5%. Where there are different types in the sampled batch, the inspection authority shall sample one type for inspection. Batches not sampled will be subject to document review to simplify the inspection process, or batch-by-batch verification when it is deemed necessary.

(4)Number of samples: more than three pieces of finished gypsum board, with each one having an area of at least 1.44 square meters; more than two pieces of finished products for other fire-retardant construction materials, with each one having an area of at least 1.44 square meters.

(5)Inspection items of sampled products:

a.Dressed rockwool boards for acoustic use: labeling check and at least one of the three items on "incombustibility," "bending strength" and/or "asbestos identification."

b.Cement bonded wood-wool boards, cement bonded wood-flake boards, slag gypsum boards, calcium silicate boards, fiber cement boards, decorative exterior panel of fiber reinforced cement sidings (class D) and gypsum board: labeling check and at least one of the four items on "incombustibility," "total content of chloride ion," "bending strength/flexural strength" and/or "asbestos identification."

- c. Fire-retardant hard fiberboards and fire-retardant insulation fiberboards: labeling check and at least one of the items on "incombustibility" and/or "flexural strength/impact resistance."
- (6) Inspection agency:
- a. Asbestos identification: the BSMI.
  - b. Incombustibility, bending strength, flexural strength, impact resistance, total content of chloride ion: the BSMI, its Keelung Branch, Taichung Branch or Kaohsiung Branch.
- (7) Time required for inspection: 9 working days for grade-1 incombustibility products upon receipt of the samples. 7 working days for grade-2 and grade-3 incombustibility products upon receipt of the samples.
- (8) Commodities that have failed the inspection shall be further processed as follows:
- a. Where non-compliance is found, the rate of 10% shall be resumed on the condition that products of the same type pass inspection for a consecutive three batches.
  - b. If products of the same batch contain different types and the types sampled in accordance with paragraph (3) fail inspection, the applicant shall return or destroy the batch, or re-apply to the inspection authority for inspection of the whole batch by submitting a corrective action plan in accordance with the Regulations Governing Disposition of Commodities Failing Inspection.
- (9) The inspection authority may sample products and inspect relevant items if it receives reports or when there is doubt about the consistency of compliance with inspection standards of products covered in the application.

#### Chapter 5 Requirements for Registration of Product Certification

16. Processing time for reviewing applications for Registration of Product Certification (RPC): 14 working days after the inspection authority accepts the application (not including the time required for delivery of supplementary documents or samples). Where samples are tested, such period shall be extended to another 7 working days upon receipt of samples.

17. The term of validity for RPC certificate shall be three years. The certificate holder may apply for an extension, which is limited to one time only.

18. For applications made for fire-retardant construction materials by choosing modules IV, V or VII, the applicant shall be equipped with a cone calorimeters and provide documents proving purchase of the equipment and two photos (4"x6") showing the place of installation along with the application documents. The inspection authority may perform on-site check where necessary.

19. The cone calorimeters mentioned in the preceding clause may be replaced by the following method:

(1) Establishing a comparison module:

a. The production premise shall be equipped with regular inspection and testing equipment, such as those specified in CNS 6532, ISO 1182, ASTM-E84, UL 723, ISO 1716, EN 13823, ISO 11925-2, ISO 9705 or other equipment with the same level.

b. A cut-off value is determined for each production premise by comparing test results produced by regular inspection and testing equipment with those produced by cone calorimeters mentioned in CNS 14705-1.

(2) Production control: using regular inspection and testing equipment to inspect products and using the cut-off value determined by the comparison module to control the quality of products.

(3) Outsourcing testing on a regular basis:

a. Having the certified products tested on their fire-retardant performance regularly by the inspection authority, BSMI designated testing laboratories or testing laboratories accredited by Taiwan Accreditation Foundation in accordance with CNS 14705-1.

b. Modifying the cut-off value by comparing the test results produced by outsourced testing laboratories with those produced by the production premise.

c. Frequency of outsourcing: Having one product of each certified type produced in each quarter tested against CNS 14705-1 by outsourced testing laboratories.

20. Products which are certified in accordance with the preceding clause shall be subject to the following requirements each year after certification:

(1) Test reports issued by outsourced testing laboratories shall be sent to the inspection authority that issued the RPC certificate by the end of the year for purpose of record keeping. The inspection authority shall perform border or ex-factory inspection in accordance with Article 7 of the Regulations Governing Registration of Product Certification for those failing to do so. The

inspection authority may sample products and perform tests if there is doubt about the test results. The inspection authority shall complete inspection of samples received within one month. The RPC certificate shall be rescinded in accordance with Subparagraph 1, Article 42 of the Commodity Inspection Act if non-compliance is found.

(2) A CNS mark test report may supersede an entrusted inspection report mentioned in the preceding clause. One CNS mark test report can only replace an entrusted inspection report of one main type or one type of series. The test reports issued by outsourced testing laboratories may be replaced by a test report under the CNS Mark Certification system. One CNS Mark test report can be only used to replace the type test reports from outsourced testing laboratories for one main type or one series of type.

## Chapter 6 Other Inspection Requirements

### 21. The Commodity Inspection Mark:

(1) The obligatory applicant shall affix the Commodity Inspection Mark to the body or the smallest packaging of each piece of board products, and affix the Mark to the body or the packaging unit of wall papers.

(2) Where the Commodity Inspection Mark is affixed to the smallest packaging or packaging unit, the manufacturing date or batch number shall be indicated on the body. Where monitoring inspection or type-approved batch inspection is selected as the conformity assessment procedure, the obligatory applicant shall fill out the manufacturing date or lot number in the inspection application form of the batch of products covered. The inspection authority that accepts the application for inspection shall note the manufacturing date or lot number of the subject batch of products in the Monitoring Inspection Certificate or Certificate of Inspection after they pass inspection.

(3) Products that pass monitoring inspection shall be affixed with the Commodity Inspection Mark label printed by the BSMI. Products certified under the RPC scheme or Type-Approved Batch Inspection scheme shall be affixed with self-printed Commodity Inspection Mark.

### 22. Chinese labeling:

(1) Calcium silicate boards, slag gypsum boards, fiber cement boards, regenerated fiber cement boards, decorative exterior panel of fiber reinforced cement sidings (class D), cement bonded wood-wool boards, cement bonded wood-flake boards and gypsum board: "(a) Type and its symbol"

can be labeled on the outer packaging while the rest shall comply with the Chinese labeling requirements stated in each inspection standard.

(2) Dressed rockwool boards for acoustic use: the body of each piece or the smallest packaging shall

be labeled according to the inspection standards.

(3) Fire-retardant hard fiberboards and fire-retardant insulation fiberboards: In addition to labeling the items required in the inspection standards, the manufacturing date or lot number shall be labeled on the body or the smallest packaging.

(4) The items required to be labeled in each piece according to the inspection standards, the text may

be in Chinese or English. The outer packaging of the product shall be labeled in Chinese in accordance with Article 11 of the Commodity Inspection Act.

23. For dressed rockwool boards for acoustic use with a density below 160kg/m<sup>3</sup>, an application of exemption from inspection of bending strength may be made to the BSMI by providing documents demonstrating compliance with relevant international standards. Where the application is approved and the products pass inspection, the inspection authority that accept the application shall note "inspection of bending strength exempted" in the Certificate of Inspection or RPC certificate.

24. For fire-retardant construction materials with thickness larger than the minimum thickness specified in relevant CNS and there are no texts about that thickness and product requirements, the test items closest to that thickness shall be applicable. Measurement of the thickness shall avoid parts with significant unevenness on the surface. Where it is not easy to avoid those parts, the smallest value shall be used to determine the applicable test items.

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Attachments : Form FRP-01 Type Classification Table of Products .pdf  
Form FRP-02 Type Classification Table of Products .pdf  
Form FRP-03 Type Classification Table of Products .pdf

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Data Source : Ministry of Economic Affairs R.O.C.(Taiwan) Laws and Regulations Retrieving System