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PEOPLE'S REPUBLIC OF CHINA

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GB/T 6891-2018

Replacing GB/T 6891-2006

Aluminum and Aluminum Alloy Profiled Sheet

铝及铝合金压型板

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Aluminum and Aluminum Alloy Profiled Sheet

1 Scope

This Standard specifies the requirements, test methods, inspection rules, marking, package, transportation, storage, quality certificate, and ordering form (or contract) contents of aluminum and aluminum profiled sheet.

This Standard is applicable to the aluminum and aluminum alloy profiled sheet (hereinafter referred to as profiled sheet) for the civil buildings, building envelopes, and automobile bodies.

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 document.

GB/T 3190 Wrought Aluminum and Aluminum Alloys-Chemical Composition Limits

GB/T 3199 Wrought Aluminum and Aluminum Alloy Products - Packing, Marking, Transporting and Storing

GB/T 3880.1 Wrought Aluminum and Aluminum Alloy Plates, Sheets and Strips for General Engineering - Part 1: Technical Conditions of Delivery

GB/T 3880.2 Wrought Aluminum and Aluminum Alloy Plates, Sheets and Strips for General Engineering - Part 2: Mechanical Properties

GB/T 3880.3 Wrought Aluminum and Aluminum Alloy Plates, Sheets and Strips for General Engineering - Part 3: Tolerances on Forms and Dimensions

GB/T 7999 Optical Emission Spectrometric Analysis Method of Aluminum and Aluminum Alloys

GB/T 8013.3 Anodic Oxide Coatings and Organic Polymer Coatings on Aluminum and Its Alloys - Part 3: Organic Polymer Coatings

GB/T 8170 Rules of Rounding off for Numerical Values & Expression and Judgement of Limiting Values

layer code.

Example 1:

The marking for uncoated profiled sheet with designation of 3105, state of H16, model of YX10001, length of 6000mm is as follows:

Profiled sheet GB/T 6891-3105H16-YX10001×6000

Example 2:

The marking for the polyester paint roller coating profiled sheet with designation of 3105, state of H46, model of YX10001, length of 6000mm, color number of 2345, film layer code of LRA15 is as follows:

Profiled sheet GB/T 6891-3105H46-YX10001×6000 color 2345LRA15

3.2 Quality assurance

3.2.1 Base material

The quality of base material shall conform to the provisions of GB/T 3880.1.

3.2.2 Fluorocarbon paint coating

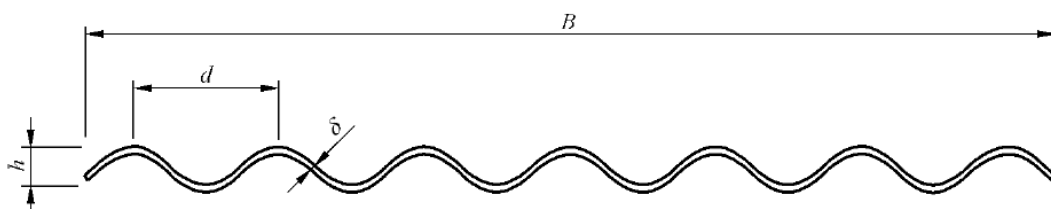
The quality of fluorocarbon paint coating can refer to A.2.3 of GB/T 5237.5-2017.

3.3 Chemical composition

The chemical composition of the profiled sheet shall conform to the provisions of GB/T 3190.

3.4 Size deviation

3.4.1 The cross-sectional dimension of the profiled sheet shall conform to the provisions of the drawings specified by both the supplier and the purchaser. The marking of the cross-sectional dimension can refer to Figure 1.



Key:

B – width;

Hardness		After the pencil scratch test, the hardness of the film layer shall be no less than HB	After the pencil scratch test, the hardness of the film layer shall be no less than 1H
Adhesion	Dry adhesion	Reach Level-0 or Level-I	Reach Level-0
	Wet adhesion	---	Reach Level-0
	Boiling-water adhesion	---	Reach Level-0
Coating flexibility ^a		If it is $\leq 2T$, the film layer shall be free of cracks or peeling off	---
Impact resistance		The film layer shall be free of cracks or peeling off after the impact test (square impact)	The film layer is allowed to crack slightly after the impact test (impact of recoil); however, when the adhesive tape is used for further inspection, the surface of the film layer shall be free of stick-falling phenomenon
High temperature water boiling resistance		---	The appearance of the film layer after the test shall be free of peeling, blistering, wrinkling, etc.; the adhesion shall reach Level-0
Wear resistance		---	Sand-falling test results: the wear factor shall be no less than 1.6L/ μm
Hydrochloric acid resistance		After the hydrochloric acid resistance test, there shall be no bubbles, discoloration or other obvious changes	
Nitric acid resistance		---	After the nitric acid resistance test, compare the exposed and unexposed samples, the color change $\Delta E_{ab}^* \leq 5$
Mortar resistance		After the mortar resistance test, there is no peeling off or other obvious changes	
Solvent resistance		70 times without revealing	100 times without revealing
		Wipe for 100 times, the film layer after wiping has no revealing phenomenon	

Table 3 – Continued

Item	Film layer performance of the following coating sheet					
	Roller coating			Spray coating		
	LRA15	LRF2-25	LRF3-34	LF2-25	LF3-34	LF4-55
Detergent resistance	---			There shall be no blistering or other obvious changes; the		

It shall be carried out as per the pencil hardness method specified in GB/T 8013.3.

4.4.2 Flexibility

It shall be carried out as per the T-bending method specified in GB/T 8013.3.

4.4.3 Hydrochloric acid resistance

4.4.3.1 The hydrochloric acid resistance of the spray coated profiled sheet shall be carried out as per the dripping method specified in GB/T 8013.3.

4.4.3.2 The hydrochloric acid resistance of the roller coated profiled sheet shall be carried out as per the standing method specified in GB/T 8013.3.

4.4.4 Nitric acid resistance

It shall be carried out as per the gas phase method specified in GB/T 8013.3.

4.4.5 Solvent resistance

It shall be carried out as per the Wiping Method II specified in GB/T 8013.3.

4.4.6 Heat and humidity resistance

It shall be carried out as per the constant heat and humidity test method specified in GB/T 8013.3.

4.4.7 Other film layer performances

Other film layer performances shall be carried out as per the provisions of GB/T 8013.3.

4.5 Appearance quality

The appearance quality shall be tested as per the visual examination or method agreed by the supplier and the purchaser.

5 Inspection Rules

5.1 Inspection and acceptance

5.1.1 The product shall be inspected by the supplier to ensure that the product quality conforms to the provisions of this Standard and ordering form (or contract); and fill in the quality certificate.

5.1.2 The purchaser shall inspect the received products as per the provisions of this Standard. If the inspection results are inconsistent with the provisions of this Standard and the ordering form (or contract), it shall be proposed to the supplier in written form;

5.7.7 When the appearance quality of any specimen is unqualified, then such profiled sheet shall be judged to be unqualified.

6 Marking, Package, Transportation, Storage and Quality Certificate

6.1 Marking

6.1.1 Product marking

On the products that pass the inspection, there shall be the following contents (or labels with the following contents):

- a) Supplier's name and address;
- b) Product name;
- c) Seal of the supplier's quality inspection department (or signature or stamp of the quality inspection personnel);
- d) Designation, state and size specification (or model);
- e) Film layer code and color (or color number);
- f) Product batch number or date of production;
- g) This Standard number.

6.1.2 Marking on package box

The marking on package box of the product shall conform to the provisions of GB/T 3199.

6.2 Package, transportation and storage

6.2.1 When profiled sheets are packaged, it shall be folded in a simple package. The sheet stack shall be covered with Kraft paper; cover a thin layer of plastic film on top of the sheet stack; then bundle with strapping band or steel strip. The height of each profiled sheet stack shall not exceed 500mm; the gross weight per stack is no more than 2t. Wooden boards or foam boards are needed to separate the profiled sheets during bundling period; never damage the profiled sheet; the package shall be rain proof.

6.2.2 During the transportation period, there shall be reliable support or fixing measures; avoid non-uniform extrusion, mechanical damage, rain and damp. Others

shall conform to the provisions of GB/T 3199.

6.2.3 The profiled sheet shall be stored in a dry and ventilated indoor environment. When stored in the open air, it shall be covered by rainproof cover; and there shall be a slope of no less than 3% in the direction of drainage to prevent the water accumulation.

6.3 Quality certificate

Each batch of profiled sheets shall be attached with quality certificate indicating:

- a) Supplier's name;
- b) Product name;
- c) Designation, state and size specification (or model);
- d) Film layer code and color (or color number);
- e) Batch number or date of production;
- f) Weight or number of pieces;
- g) Results of each analysis and inspection; and seal for the supplier's quality inspection department;
- h) This Standard number.

7 Ordering Form (or Contract) Contents

The ordering form (or contract) ordering the profiled sheets listed in this Standard shall include the following contents:

- a) Supplier's name;
- b) Product name;
- c) Designation, state and size specification (or model);
- d) Size deviation, accuracy level;
- e) Film layer luster value, film layer code and color (or color number);
- f) Weight or number of pieces;
- g) The purchaser's special requirements.

--- Test requirements for wear resistance;

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Contact: Wayne Zheng, Sales@ChineseStandard.net

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

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