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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 33824-2025

Replacing GB/T 33824-2017

Aluminium and aluminium alloys sheet and strip for cans and caps of new energy power batteries

新能源动力电池壳及盖用铝及铝合金板、带材

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Standardization Administration of the PRC

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1 Scope

This document specifies the product classification, technical requirements, test methods, inspection rules, marking, packaging, transportation, storage, and accompanying documents and order form contents of aluminum and aluminum alloys sheet and strip for cans and caps of new energy power batteries.

This document applies to aluminium and aluminium alloys sheet (hereinafter referred to as "sheet") as well as aluminium and aluminium alloys strip (hereinafter referred to as "strip") for cans and caps of new energy power batteries used in electric vehicles, electric bicycles, power energy storage, communication energy storage and other fields.

This document is also applicable to aluminum and aluminum alloys sheet and strip used for battery boxes, explosion-proof disks, explosion-proof valves, welding rings, pole ears, pole blocks, pole posts, connecting pieces, flexible connectors, side panels, etc.

2 Normative references

GB/T 2523

GB/T 3190

GB/T 3199

GB/T 3246.1

GB/T 3880.1

GB/T 3880.3-2024

GB/T 4156

GB/T 5125

GB/T 7999

GB/T 8005.1

GB/T 12966

GB/T 16865

GB/T 17432

GB/T 20975

GB/T 22588

GB/T 26492.3

GB/T 42916

3 Terms and definitions

For the purpose of this document, terms and definitions given in GB/T 8005.1 and GB/T 26492.3 apply.

4.1 Designation, state and dimensions

The designation, state and dimensions of sheets and strips are shown in Table 1.Other designations, states and dimensions, if required by the buyer, shall be negotiated between the supplier and the buyer, and indicated in the order.

4.2 Product identification

Product markings are indicated in the order of product name, document number, designation, state and dimensions. Examples of marking are as follows. Example 1.

The sheet, of designation 3003, H14 state, thickness 0.50 mm, width 314.0 mm, and length 1 032.0 mm, is marked as.

Sheet GB/T 33824-3003H14-0.50x314.0x1032.0 Example 2.

The strip, of designation 1060, O state, thickness 1.00 mm, width 1 260.0 mm, is marked as.

Strip GB/T 33824-1060O-1.00x1260.0

5.1 Chemical composition

The chemical composition of the product shall comply with the requirements of GB/T 3190 Special requirements, if required by the buyer, shall be determined through negotiation between the supplier and the buyer and shall be indicated in the order form.

5.2.1 Thickness

The thickness deviation of sheets and strips shall comply with the requirements of GB/T 3880.3-2024 for medium and high precision grades.

5.2.2 Width

When the buyer has requirements for the salt spray corrosion resistance of the sheets and strips used for battery cans, caps and side panels, this shall be indicated in the order form, and the supplier shall provide the salt spray corrosion test results.

5.9 Microstructure

5.9.1 Requirements for the grain size of sheets and strips, if required by the buyer, shall be determined through negotiation between the supplier and the buyer, and indicated in the order form.

5.9.2 When the supplier and the buyer disagree on the earing ratio or cupping value test results, the texture may be measured and the texture test results provided. Appendix A gives examples of texture analysis results for sheets and strips of different earing ratios.

5.10 Appearance quality

5.10.1 The burr height on the edge of the strip should not exceed the minimum of 4%-T (T is the nominal thickness) and 0.045 mm.

5.10.2 Other appearance qualities of sheets and strips shall comply with the

requirements of GB/T 3880.1.

6.1 Chemical composition

Chemical composition analysis shall be carried out in accordance with the provisions of GB/T 20975 (all parts) or GB/T 7999, and arbitration analysis shall be carried out in accordance with the provisions of GB/T 20975 (all parts).

6.2 Dimensional deviation

The surface roughness test shall be carried out in accordance with the provisions of GB/T 2523, and other dimensional deviation tests shall be carried out in accordance with the provisions of GB/T 3880.3-2024.

6.3 Mechanical properties

The mechanical properties test shall be carried out in accordance with the provisions of GB/T 16865.

6.4 Earing ratio

The earing ratio test shall be carried out in accordance with the provisions of GB/T 5125.

6.5 Cupping value

The cupping value test shall be carried out in accordance with the provisions of GB/T 4156.

6.6 Conductivity

The conductivity test shall be carried out in accordance with the provisions of GB/T 12966.

6.7 Thermal conductivity

The thermal conductivity test shall be carried out in accordance with the provisions of GB/T 22588.

6.8 Salt spray corrosion resistance

The salt spray corrosion test method shall be determined by negotiation between the supplier and the buyer and shall be indicated in the order form.

6.9 Microstructure

The grain size test shall be carried out in accordance with the provisions of GB/T 3246.1.

The test method for texture is shown in Appendix B.

6.10.1 Burr height

Select the trimming positions on both sides of the strip and cut the samples along the trimming edge. The sample length shall be greater than 30 cm. Use a measuring tool of corresponding accuracy to measure the distance from the top of the burr to the edge of the sample. If necessary, measurements can be made with the aid of an image measuring instrument or microscope.

6.10.2 Other appearance qualities