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Copper clad aluminum plate, sheets and strips
(English Translation)

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard was proposed by China Non-ferrous Metals Industry Association.

This Standard shall be under the jurisdiction of the National Technical Committee for Standardization of Non-ferrous Metals (SAC/TC 243).

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Copper clad aluminum plate, sheets and strips

1 Scope

This Standard specifies the terms and definitions, requirements, test methods, inspection rules, symbols, packaging, transportation, storage, quality certificate, and content of the order form (or contract) of the copper clad aluminum plate, sheets and strips.

This Standard is applicable to the copper clad aluminum plate, sheets and strips used in electricity, communications, electronics, construction, thermal conductivity and other industries.

2 Normative references

The following documents are essential to the application of this document. For dated references, only the editions with the dates indicated are applicable to this document. For undated references, only the latest editions (including all the amendments) are applicable to this document.

GB/T 228.1-2010 Metallic materials - Tensile testing - Part 1.Method of test at room temperature

GB/T 232 Metallic materials - Bend test

GB/T 2423.22 Environmental testing - Part 2.Tests methods - Test N. Change of temperature

GB/T 3190 Wrought aluminium and aluminium alloy - Chemical composition

GB/T 4340.1 Metallic materials - Vickers hardness test - Part 1.Test method

GB/T 5121 (all parts) Methods for chemical analysis of copper and copper alloys

GB/T 5231 Designation and chemical composition of wrought copper and copper alloys

GB/T 6462 Metallic and oxide coatings - Measurement of coating thickness - Microscopical method

GB/T 7999 Optical emission spectrometric analysis method of aluminum and aluminum alloys

GB/T 8165-2008 Stainless steel clad plates, sheets and strips

GB/T 8888 Wrought heavy non-ferrous metal products - Packing, marking, transportation, storing and certificate of quality

GB/T 20975 (all parts) Methods for chemical analysis of aluminium and aluminium alloys

GB/T 26303.3 Measuring methods for dimensions and shapes of wrought copper and copper alloys - Part 3. Sheets and strips

GJB 446 Test method for 90 degree peel strength of adhesives (metal to metal)

YS/T 482 Methods for analysis of copper and copper alloys - The atomic emission spectrometry

3 Terms and definitions

The following terms and definitions are applicable to this document.

3.1 Copper clad aluminum plate, sheets and strips

USE aluminum and aluminum alloys as base metal. Continuously COMPOUND a certain thickness of composites for copper and copper alloy plates, sheets and strips on one side or both sides, by using continuous casting and semi-molten rolling composite method or other methods. The composite interfaces are in metallurgical bond.

3.2 Metallurgical bond

It refers to the bond formed by the inter-diffusion of atoms between the interfaces of two kinds of metal.

3.3 Cladding copper metal

It refers to the copper and copper alloys playing a variety of functional roles in the copper clad aluminum plate, sheets and strips.

3.4 Base aluminum metal

It refers to the aluminum and aluminum alloys playing the auxiliary role in the copper clad aluminum plate, sheets and strips.

4.8.1 PLACE the copper clad aluminum plate, sheets and strips in an

environment with a temperature of 85°C and a relative humidity of 85% for 1,000h. The peel strength of copper and aluminum shall conform to the

provisions of Section 4.6.

4.8.2 CYCLE the copper clad aluminum plate, sheets and strips within the

temperature range of -50°C to 130°C for 1,000 times. The peel strength of copper and aluminum shall conform to the provisions of Section 4.6.

4.9 Surface quality

There shall be no cracks, raw edges, peelings, leakage of aluminum, adhesion of aluminum, bubbles and pits on the surfaces of the copper clad aluminum plate, sheets and strips. It is allowed to have surface defects that can be removed by grinding. However, after removal, the surface quality shall conform to the requirements for the tolerance of the cladding copper metal's thickness ratio.

5.1 Chemical composition

As for the cladding copper metal, the chemical compositions shall be analyzed according to the provisions of GB/T 5121 (all parts) or YS/T 482, and the referee shall be carried out in accordance with the provisions of GB/T 5121 (all parts).

As for the base aluminum metal, the chemical compositions shall be analyzed according to the provisions of GB/T 20975 (all parts) or GB/T 7999, and the referee shall be carried out in accordance with the provisions of GB/T 20975 (all parts).

5.2 Contour dimensions and tolerances

The contour dimensions and tolerances of the copper clad aluminum plate, sheets and strips shall be tested according to the provisions of GB/T 26303.3.

5.3.1 The cladding copper metal's thicknesses of the copper clad aluminum

plate, sheets and strips shall be tested according to the provisions of GB/T 6462.

5.3.2 SELECT three penetrative test pieces on the cross sections of the

copper clad aluminum plate, sheets and strips according to the positions A-A,