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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 32468-2025

Replacing GB/T 32468-2015

Copper clad aluminum plates, sheets, strips and foils

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Foreword

GB/T 32468-2025 was issued on 28 March 2025 by the State Administration for Market Regulation and the National Standardization Administration of the People's Republic of China and takes effect on 1 October 2025. The /T in the designation marks it as a recommended rather than a compulsory national standard.

This is the official English translation published by openstd, the national public service platform for standards information. SAC/TC 243 is in charge of the English translation; where the English and the Chinese differ, the Chinese original is the authoritative text.

The document was drafted according to the rules of GB/T 1.1-2020 Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents.

It replaces GB/T 32468-2015 Copper clad aluminum plates, sheets and strips in whole. Besides structural adjustment and editorial changes, the technical deviations from the 2015 edition are: the product transition structure type has been added; the product designation, category, temper, copper cladding thickness ratio and specification have been revised; the

tolerance of the copper cladding thickness ratio over 20 per cent to 30 per cent has been revised and a tolerance for the ratio over 30 per cent to 50 per cent has been added; the thickness, width and length tolerances of plate, sheet, strip and foil have been revised; the flatness of plate and sheet and the edgewise curvature of strip have been revised; and the mechanical properties of plate, sheet, strip and foil have been revised.

The document was proposed by the China Nonferrous Metals Industry Association and prepared by SAC/TC 243, the National Technical Committee on Nonferrous Metals of the Standardization Administration of China. It was first issued in 2015 as GB/T 32468-2015, and this is the first revised edition.

1 Scope

China's national standard for copper clad aluminum plate, sheet, strip and foil - a composite in which a layer of copper or copper alloy is metallurgically bonded to an aluminium or aluminium alloy core. The point of the material is arbitrage between two metals: copper conducts and solders and resists corrosion, aluminium is roughly a third of the weight and a fraction of the price, and a clad product buys most of the copper surface behaviour at a large saving in cost and mass. That bargain only holds if the bond is real, which is why this document spends most of its length on the interface - the copper cladding thickness ratio and its tolerance, the peel strength measured by manual stripping and at defined peel angles, the shear strength, the recombination rate, and the intermetallic compound that forms between copper and aluminium and, past a certain thickness, embrittles the joint that it originally created. Around that core it specifies the classification and product sign, the chemical composition, dimensions and tolerances, mechanical properties, thermal stability, resistivity, folding resistance and surface quality, together with the test methods, the inspection rules, and the provisions for marking, packaging, transport, storage, accompanying documents and order content. It applies to material used in power, communications, electronics, construction, heat conduction and other industries. This 2025 edition is the first revision of the standard, replacing GB/T 32468-2015 in whole; among the technical changes it adds the transition structure type, revises the product designation and specification tables, extends the copper cladding thickness ratio tolerances to ratios above 30 per cent, and revises the thickness, width, length, flatness, edgewise curvature and mechanical property requirements.

The document specifies the classification and sign, the technical requirements, the test methods, the inspection rules, the marking, packaging, transport and storage, the accompanying documents and the order contents of copper clad aluminum plate, sheet, strip and foil.

It applies to copper clad aluminum plate, sheet, strip and foil used in the power, communications, electronics, construction, heat conduction and other industries.

2 Normative reference

For dated references only the cited edition applies; for undated references the latest edition of the referenced document, including any amendments, applies. The list covers the mechanical and physical test methods (tensile testing, bend testing, resistivity, Vickers hardness, thermal cycling), the chemical composition and analysis standards for both wrought copper and wrought aluminium, the two coating thickness measurement methods used to determine the cladding ratio, the dimensional measurement standard for copper sheet and strip, and GB/T 8888 for packing, marking, transportation, storing and the certificate of quality. GB/T 8165-2008 on stainless steel clad plate is cited as the model for clad-product practice. The full list is reproduced in the normative references of this record.

3 Terms and definitions

Six terms are defined for the purposes of the document, and together they describe both the product and the way its quality is judged.

3.1 Copper clad aluminum plates, sheets, strips and foils: a composite plate, strip or foil that takes aluminum and aluminum alloys as the base layer, onto which a certain thickness of copper or copper alloy sheet or strip is continuously laminated on one side or both sides, the composite being processed by rolling or other methods, with a metallurgical bond at the interface.

3.2 Copper cladding metal: the copper and copper alloys that play the various functional roles in the product.

3.3 Aluminum base metal: the aluminum and aluminum alloys that play the auxiliary role in the product.

3.4 Peel strength: the force required to peel the cladding metal, per unit width, from the surface of the base layer.

3.5 Recombination rate: the percentage of the metallurgical bond area between the cladding metal and the base layer over the total interface area.

3.6 Intermetallic compound, IMC: one or more kinds of compound formed by diffusion between the two materials of the composite, which provides the bond strength between them and which affects the bond strength between copper and aluminum.

4.1 Product classification

The products are classified into four categories according to the type of cross-section, shown schematically in Figure 1: single-side copper-aluminum composite, double-side copper-aluminum composite, single-side copper-aluminum transition and double-side copper-aluminum transition. The transition types, new in this edition, carry the copper layer

over only part of the width.

The designation, category, temper, copper cladding thickness ratio and specification of each product shall conform to Table 1, which lists the combinations offered for each pairing of copper and aluminium designation - among them T2 over 1060, T2 over 8030, T2 over 3003, H68 over 3003 and H70 over 3003 - together with the temper (soft annealed O, hard rolled H18 or annealed half-hard H24), the admissible band of copper cladding thickness ratio, and the thickness, width and length ranges available for each. Special requirements may be settled by negotiation between supplier and purchaser.

4.2 Product sign

The product sign is written in the order product name, document number, designation, temper, precision grade, copper cladding thickness ratio and specification, and the clause gives worked examples for a double-side copper-aluminum transition plate, a single-side composite strip and a single-side composite foil.

5.1 Chemical composition

The chemical composition of the copper cladding metal shall comply with GB/T 5231 and that of the aluminum base metal with GB/T 3190; the composite is thus controlled through the two parent metal standards rather than through a composition table of its own.

5.2 Dimensions and tolerances

The copper cladding thickness ratio tolerance is given in Table 2 as a proportion of the nominal ratio K, with a tighter proportional band for ratios from 8 per cent to 20 per cent and a wider one for ratios above 20 per cent up to 50 per cent; it may also be settled by negotiation between supplier and purchaser.

Thickness tolerances are given in two tables, one for products with a cladding ratio up to 30 per cent and one for products above 30 per cent, each entered by nominal thickness and by width range, with the note that where tolerances are specified as all plus or all minus the tabulated values are doubled.

Width tolerances are given separately for plate and sheet and for strip and foil, and the clause continues with the length tolerances of plate and sheet, the flatness of plate and sheet and the edgewise curvature of strip, all of which were revised in this edition.

7.5 Inspection results judgment

Inspection results are rounded off as specified in GB/T 8170 and judged on the rounded values.

If the chemical composition is unqualified the whole lot is judged unqualified. If instead the copper cladding thickness ratio, the mechanical properties, the bending properties, the peel