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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 2054-2023

Replacing GB/T 2054-2013

Nickel and nickel alloy plate and sheet

镍及镍合金板

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Foreword

This document complies with the provisions of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting: This document replaces GB/T 2054-2013 "Nickel and Nickel Alloy Plate": Compared with GB/T 2054-2013, except for structural adjustment and editing In addition to the modifications, the main technical changes are as follows:

- a) The grade indication of the plate has been changed (see Table 1, Table 7, and Table 8, Table 1, Table 7, and Table 8 of the:2013 edition);
 - b) Changed the requirements for chemical composition of plates (see 5:1, 3:2 of the:2013 edition);
 - c) The specifications of the plates have been changed (see Table 1, Table 1 of the:2013 version);
 - d) The dimensional allowable deviation of hot-rolled plates has been changed (see Table 2, Table 2 of the:2013 edition);
 - e) Added requirements for unevenness of hot-rolled products with a thickness of 3:0mm~4:0mm (see Table 5);
 - f) Added requirements for side curvature of rectangular plates (see 5:2:5);
 - g) The requirement for diagonal difference of rectangular plates is deleted (see Table 6 of the:2013 edition);
 - h) The requirements for beveling of rectangular plates have been changed (see 5:2:6, 3:3:5 of the:2013 edition);
 - i) The tensile strength and elongation after fracture requirements of annealed N6 sheets have been changed, and the hardness requirements of some grades have been changed (see Table 7, Table 7 of the:2013 version);
 - j) The batch group requirements have been changed (see 7:2, 5:2 of the:2013 version):
- Please note that some content in this document may be subject to patents: The publisher of

this document assumes no responsibility for identifying patents: This document is proposed by the China Nonferrous Metals Industry Association: This document is under the jurisdiction of the National Nonferrous Metals Standardization Technical Committee (SAC/TC243): This document was drafted by: Baotou Group Co., Ltd., Nonferrous Metals Technology and Economic Research Institute Co., Ltd., Chinalco Shenyang Nonferrous Metals Processing Co., Ltd., Baoji Titanium Industry Co., Ltd., Shenyang Nonferrous Metals Research Institute Co., Ltd., Jiangsu Longda Superalloy Co., Ltd., Jinchuan Group Nickel Alloy Co., Ltd., Nanjing Damai Technology Industrial Co., Ltd., Ningbo Jiangfeng Electronic Materials Co., Ltd: The main drafters of this document: Hu Zhijie, Cheng Wei, Yang Lijuan, Han Zhiwei, Ding Wuzhou, Wang Xin, Xue Kai, Zhang Guimin, Zhang Ye, Qi Hang, Li Tingting, Zhou Xiangdong, Zhu Tingxian, Wu Yuning, Liao Peijun, Ma Zhongxian, Feng Junning, Yao Lijun: The previous versions of this document and the documents it replaces are as follows:

- First published in 1970 as YB703-1970 "Nickel and Nickel Alloy Plate and Strip";
- The first revision in 1980, published as GB/T 2054-1980 "Nickel and Nickel Alloy Plate";
- In the second revision in:2005, GB/T 11088-1989 "Nickel and Nickel Alloy Plates and Strips for Electric Vacuum Devices" was incorporated (The previous versions of GB/T 11088-1989 were released as follows: In 1970, it was first released as YB757-1970 "Nickel for Electric Vacuum" The content of the plate part in "Nickel and Nickel Alloy Strips") was published as GB/T 2054-2005 "Nickel and Nickel Alloy Plate";

1 Scope

China's national product standard for nickel and nickel alloy plate and sheet. It specifies the classification and marking, the technical requirements, the test methods, the inspection rules, the marking, packaging, transport and storage, the accompanying documents and the order content, and it applies to nickel and nickel alloy plate and sheet. Nickel and its alloys are bought where nothing cheaper survives. Commercially pure nickel resists caustic alkali at concentrations and temperatures that destroy stainless steel, which makes it the material of the chlor-alkali industry and of caustic evaporators. The nickel-copper alloys hold in seawater and in hydrofluoric acid. The nickel-chromium-molybdenum alloys resist reducing and oxidising acids in the same vessel, which is what a mixed-acid process demands and what no stainless can do. And the nickel-based superalloys keep their strength at temperatures where steel has none. In every case the metal is expensive and it is chosen because failure of the equipment is unacceptable, which shapes what the standard controls. The composition limits are the first thing, since corrosion resistance in these alloys is destroyed by small excesses of the wrong element - carbon above the limit in a nickel-chromium-molybdenum alloy precipitates carbides at the grain boundaries and opens the material to intergranular attack. The heat treatment and delivery condition are the second, because the corrosion behaviour of a solution-annealed plate and a sensitised one

are entirely different at the same composition. Then the mechanical properties, the dimensional tolerances and flatness, the surface condition, and the non-destructive examination. The order content chapter is not filler for a material supplied in many alloys, thicknesses and conditions. Issued on 27 November 2023 and in force since 1 June 2024, it replaces GB/T 2054-2013.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 228:1-2021 Tensile testing of metallic materials Part 1: Room temperature test method GB/T 230:

1 Rockwell hardness test of metallic materials Part 1: Test methods GB/T 4340:

GB/T 5235 Processing nickel and nickel alloy grades and chemical composition

GB/T 6394 Method for determination of average grain size of metals

GB/T 8170 Numerical rounding rules and expression and determination of limit values

GB/T 8647 (all parts) Chemical analysis methods for nickel

GB/T 8888 Packaging, marking, transportation, storage and quality certificate of heavy non-ferrous metal processing products

GB/T 15007 Corrosion-resistant alloy grades YS/T 325 (all parts) Chemical analysis method of nickel-copper alloy

3 Terms and definitions

There are no terms or definitions to be defined in this document:

4 Classification and tagging

1 Product classification The brand, status and specifications of the product should comply with the provisions of Table 1: Please see Appendix A for comparison between this document and the corresponding grades of relevant domestic and foreign standards: