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

GB/T 2882-2023

Replacing GB/T 2882-2013

Nickel and nickel alloy tubes

镍及镍合金管

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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 2882-2013 "Nickel and Nickel Alloy Tubes": Compared with GB/T 2882-2013, except for structural adjustment and editing In addition to the modifications, the main technical changes are as follows:

- a) The grade indication of pipes has been changed (see Table 1, Table 7, Table 1, Table 8 of the:2013 version);
- b) The specifications of the pipes have been changed (see Table 1, Table 1 of the:2013 edition);
- c) The nominal dimensions of the pipe have been changed (see Table 2, Table 3 of the:2013 edition);
- d) Added high-precision requirements for pipe straightness (see Table 6);
- e) The requirements for room temperature mechanical properties of pipes have been changed (see Table 7, Table 8 of the:2013 version);
- f) Added requirements for eddy current testing of pipes (see 5:6);
- g) Changed the surface quality requirements (see 5:7, 3:7 of the:2013 edition);
- h) The inspection rules have been changed (see Chapter 7, Chapter 5 of the:2013 edition): 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: Baoji Titanium Group Co., Ltd., Chinalco Shenyang Nonferrous Metal Processing Co., Ltd., Baoji Titanium Industry Co., Ltd., Ferrous Metals Technical and Economic Research Institute Co., Ltd., Shenyang Nonferrous Metals Research Institute Co., Ltd., Jiangsu Longda Superalloy Co., Ltd., Ningbo Jiangfeng Electronic Materials Co., Ltd: The main drafters of this document: Hu Zhijie, Wang Qiaoli,

Xue Kai, Zhang Ye, Yang Lijuan, Han Zhiwei, Cheng Wei, Ding Wuzhou, Zhang Guimin, Zhou Xiangdong, Zhang Daoyan, Wu Dongqing, Xie Chen, Zhang Jiawei, Hao Xuebo, Yao Lijun: The previous versions of this document and the documents it replaces are as follows:

- First published in 1981 as GB/T 2882-1981 "Nickel and Nickel-Copper Alloy Tubes";
- In the first revision in:2005, the contents of GB/T 8011-1987 "Nickel and Nickel Alloy Seamless Thin-Wall Tubes" were incorporated (GB/T 8011- The previous version releases in 1987 are: first released in 1987), released as GB/T 2882-2005 "Nickel and Nickel Alloy Tubes";
- Second revision in:2013;
- This is the third revision: Nickel and nickel alloy tubes

1 Scope

China's national product standard for nickel and nickel alloy tubes. It specifies the designations, the specifications and dimensions, the technical requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of seamless tube in nickel and its alloys. Nickel tube is bought for one reason: it survives what other metals do not. Commercially pure nickel resists caustic alkali at concentrations and temperatures that destroy stainless steel, which is why it lines the evaporators of chlor-alkali plants. The nickel-copper alloys resist seawater and hydrofluoric acid. The nickel-chromium-molybdenum alloys resist oxidising and reducing acids in the same vessel, which is the condition most chemical plant corrosion problems reduce to. And the nickel-chromium-iron alloys hold their strength and their oxidation resistance at temperatures where steel is finished. In every one of those services the tube is the component in contact with the medium, and it is bought when the alternative is replacing a carbon steel item every year. The 2023 revision is a working revision rather than a restructuring. The way grades are designated is changed and the specification and nominal dimension tables are revised; a high-precision class is added for straightness; the room temperature mechanical property requirements are changed; eddy current testing of the tube is added as a requirement; the surface quality requirements are changed; and the inspection rules are revised. The addition of eddy current testing is the substantive one: it is a full-length non-destructive examination that finds the discontinuities a sample-based mechanical test cannot, on a product whose failure mode is a leak rather than a rupture. Issued on 27 November 2023 and in force since 1 June 2024, it replaces GB/T 2882-2013.

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:

GB/T 241 Hydraulic test method for metal pipes

GB/T 242 Metal pipe expansion test method

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

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 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: Table

1 Grade, status and specifications Brand status Specification mm outer diameter wall thickness length N2, N4, DN soft state (M), hard state (Y) 0:35~18 0:05~5:00 N5, N7, N8 soft state (M), stress relief state (Y0) 5:00~115 1:00~8:00 100~15000