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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 14986.2-2025

Replacing GB/T 32286.1-2015

Soft magnetic alloys - Part 2: Nickel-iron alloys

软磁合金 第2部分：铁镍合金

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 2 of GB/T 14986 "Soft Magnetic Alloys". GB/T 14986 has been published in the following parts.

- Part 1: General requirements;

- Part 2: Iron-nickel alloys;

- Part 3: Iron-cobalt alloys;

- Part 4: Iron-chromium alloys;

- Part 5: Iron and aluminum alloys.

This document replaces GB/T 32286.1-2015 "Soft magnetic alloys Part 1: Iron-nickel alloys" and GB/T 14987-2016 "High hardness High resistance iron-nickel soft magnetic alloy cold-rolled strip". This document is based on GB/T 32286.1-2015 and integrates GB/T 14987-2016.

Compared with GB/T 32286.1-2015, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) The scope of application of the document has been changed (see Chapter 1, Chapter 1 of the 2015 edition);

b) Added the term "peak permeability" (see 3.1);

c) The requirements for smelting methods have been changed (see 6.1, 6.2 of the 2015 edition);

d) Added corrosion-resistant nickel-iron alloy 1J336 and higher permeability and higher saturation magnetic induction intensity nickel-iron alloy 1J348 (see Table 1);

e) The sulfur content requirements have been changed (see Table 1, Table 5 of the 2015 edition);

f) The requirements for allowable deviation of chemical composition have been changed (see 7.1.2, 6.1 of the 2015 edition);

g) The upper limit of the width of cold-rolled iron-nickel alloy strips with a thickness greater than 0.04 mm, except for high-hardness and high-resistance iron-nickel alloys, has been changed (see 7.6.1.1.2, 5.1.1.1 of the 2015 edition);

h) Added provisions for numerical rounding (see 9.5).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Iron and Steel Association.

This document is under the jurisdiction of the National Technical Committee on Steel Standardization (SAC/TC183).

This document was drafted by: Beijing Beiye Functional Materials Co., Ltd., Northeast Special Steel Group Co., Ltd., Antai Technology Co., Ltd.

Company, Jiangsu Hongyun Precision Industry Co., Ltd., Haiyan Zhongda Metal Electronic Materials Co., Ltd., Metallurgical Industry Information Standards Research Institute, Iron and Steel Research Institute Research Institute Co., Ltd., Xi'an Steel Research Institute Functional Materials Co., Ltd., Panzhihua Iron and Steel Group Jiangyou Great Wall Special Steel Co., Ltd., Fushun Special Steel Co., Ltd.

Co., Ltd., Zhejiang Qingshan Iron and Steel Co., Ltd., and Chengdu Kaitian Electronics Co., Ltd.

The main drafters of this document are: Xu Mingzhou, Xue Jianing, Wang Lianchao, Li Jun, Ju Xiang, Zhang Yunheng, Zhang Jinglin, Li Bo, Xu Ding, Pan Yanfeng, Ji Dengping, Yan Chengming, Yang Fan, Li Chongyang, Wang Shu, Guo Xiaodong, Zhu Yahui, Xu Xiaofeng, Wang Lin, Yu Yipeng, Liu Jie, Fang Yi, Guan Yulong, and Wang Beibei.

The previous versions of the documents replaced by this document are as follows.

- GB/T 32286.1, first issued in 1988 as GB n198-1988 and first revised in 2015 as GB/T 32286.1-2015;

- GB/T 14987, first issued in 1982 as GB n161-1982, first revised in 1994 as GB/T 14987-1994, second revised in 2016.

Introduction

Soft magnetic alloys are a type of alloy with high magnetic permeability and low coercivity in weak magnetic fields. They are widely used in radio electronics industry, precision In instruments, remote control and automatic control systems, it is mainly divided into iron-nickel soft magnetic alloys, iron-cobalt soft magnetic alloys, iron-aluminum and other soft magnetic alloys It is a very important material in the modern industrial field.

GB/T 14986 "Soft Magnetic Alloys" aims to standardize the production, procurement and application of soft magnetic alloys and is intended to consist of four parts.

- Part 1: General requirements. The purpose is to specify requirements that are common to other parts so that they can be referenced in other parts.

- Part 2: Iron-nickel alloys. The purpose is to specify the technical requirements of

iron-nickel soft magnetic alloys.

- Part 3: Iron-cobalt alloys. The purpose is to specify the technical requirements of iron-cobalt soft magnetic alloys.

- Part 4: Other alloys. The purpose is to specify the technical specifications of other soft magnetic alloys except iron-nickel and iron-cobalt soft magnetic alloys, such as iron and aluminum. Require.

1 Scope

This document provides the classification of iron-nickel soft magnetic alloy materials, and specifies the order content, manufacturing process, technical requirements, inspection rules, packaging, labeling, etc.

The corresponding test methods are described in the label, storage and quality certificate.

This document applies to the production, procurement and application of the following iron-nickel soft magnetic alloy materials (hereinafter referred to as alloy materials).

- Corrosion-resistant iron-nickel alloy 1J336 cold-rolled strip, hot-rolled (forged) bar and plate;

- Higher magnetic permeability and higher saturation magnetic induction strength iron-nickel alloy 1J346, 1J348, 1J350, 1J354 cold rolled strip, cold drawn wire, cold drawn (rolled) tubes, hot-rolled (forged) bars and plates;

- High magnetic permeability iron-nickel alloy 1J476, 1J477, 1J479, 1J480, 1J485, 1J486 cold-rolled strip, cold-drawn wire, cold-drawn (rolled) tube Hot-rolled (forged) bars and plates, 1J476, 1J479, 1J485 cold-rolled plates;

- Cold-rolled strips of nickel alloys 1J334, 1J350J, 1J352, 1J465, 1J467, 1J483 and 1J340;

- Cold-rolled strip of magnetic temperature-compensated iron-nickel alloys 1J330, 1J331, 1J332, 1J333, and 1J338;

- Cold-rolled strip of constant permeability iron-nickel alloy 1J466;

- Cold rolled strip of high hardness and high resistance iron-nickel alloys 1J487 and 1J488.

2 Normative references

GB/T 223

GB/T 3658

GB/T 4340.1

GB/T 6146