

ICS 25.160.20

CCS J 33



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

GB/T 15620-2025

Replacing GB/T 15620-2008

**Solid wire electrodes, solid strip electrodes, solid wires and
solid rods for fusion welding of nickel and nickel alloys**

镍及镍合金实心焊丝和焊带

(English Translation)

Issued on: June 30, 2025

Implemented on: January 1, 2026

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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 replaces GB/T 15620-2008 Nickel and nickel alloy welding wire. Compared with GB/T 15620-2008, except for the structural adjustment and In addition to the logical changes, the main technical changes are as follows.

- a) Added content related to welding strips (see Chapter 1, 3.3, 4.1, 4.2, 5.1, 5.3, 5.4, 5.5, 6.1, 6.3, 6.4, and Chapter 8);
- b) Added the terms and definitions of "solid welding wire", "solid filler wire" and "solid welding ribbon" (see Chapter 3);
- c) Added Ni6073, Ni6699, Ni6043, Ni6045, Ni6054, Ni6055, Ni6056, Ni6693, Ni8034, Ni8827, Ni9946, Ni1024, Ni1362, Ni6007, Ni6035, Ni6205, Ni7208, Ni7740, Ni6231B,

Ni6680 has a total of 20 chemical composition classifications (see 5.4);

d) The chemical composition code of Ni6058 has been changed (see 5.4, 4.1 of the 2008 edition);

e) Some chemical composition requirements have been modified (see 5.4, 4.1 of the 2008 edition);

f) Added typical values and test methods of tensile properties of deposited metal (see 5.6, 6.4);

g) The provisions for sampling when conducting chemical composition analysis on welding wire have been modified (see 6.4, 5.1.1 of the 2008 edition);

h) Added the rules on amendment (see Chapter 7);

i) The inspection rules have been changed (see Chapter 8, Chapter 6 of the 2008 edition);

j) Deleted the requirements for "packaging, marking and quality certificate" (see Chapter 7 of the 2008 edition);

k) Added the requirements for "Technical Supply Conditions" (see Chapter 9).

This document is modified to adopt ISO 18274:2023 "Welding materials - Nickel and nickel alloy solid wire, solid strip and solid filler wire".

Compared with ISO 18274:2023, this document has many structural adjustments. The structural number changes between the two documents are shown in the table below. See Appendix A;

This document has many technical differences compared to ISO 18274:2023.

A list of these technical differences and their reasons is given in Appendix B.

The following editorial changes have been made to this document.

--- To coordinate with the existing standard, the name of the standard is changed to "Nickel and nickel alloy solid welding wire and welding strip";

--- Deleted Appendix A (informative) welding material naming system and expressed the relevant content in C.1;

--- Deleted Appendix C (Informative) Chemical composition comparison of welding wire and welding strip BS2901-5:1990 and DIN1736:1995 The models of AWS A5.14/A5.14M.2024 and JIS Z3334:2017 have been updated for comparison.

1 Scope

This document specifies the types, technical requirements, test methods, amendment rules and inspection rules and technical supply conditions, etc.

This document applies to nickel and nickel alloy solid welding wire and solid filler wire (hereinafter referred to as welding wire), solid welding strip (hereinafter referred to as welding strip) for fusion welding.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 2652 Destructive tests on welds of metallic materials - Longitudinal tensile test of weld metal in fusion welded joints (GB/T 2652-2022, ISO 5178:2019, IDT)

GB/T 3375 Welding terminology

GB/T 5185 Welding and related process code (GB/T 5185-2005, ISO 4063:1998, IDT)

GB/T 8170-2008 Rules for rounding off values and expression and determination of limit values

GB/T 25774.1-2023 Inspection of welding materials Part 1: Preparation of test specimens for mechanical properties of steel, nickel and nickel alloy deposited metal (ISO 15792-1:2020, MOD)

GB/T 25775 Technical conditions for supply of welding consumables - Product types, dimensions, tolerances and markings (GB/T 25775-2010, ISO 544:2003,MOD)

GB/T 25778 Welding Consumables Procurement Guide (GB/T 25778-2010, ISO 14344:2010, MOD)

3 Terms and Definitions

The terms and definitions defined in GB/T 3375, GB/T 5185 and the following apply to this document.

3.1 Solid wire

A wire-shaped welding material with a uniform solid circular cross-section that serves as both filler metal and electrode during welding.

3.2 Solid filler wire

A wire-shaped welding material with a uniform solid circular cross-section that serves only as filler metal but not as an electrode during welding.

3.3 Solid strip

Strip welding with a uniform solid rectangular cross-section and a thickness of not less than 0.10 mm, used as both filler metal and electrode during welding Material.