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

GB/T 6109.1-2025

Replacing GB/T 6109.1-2008

**Enamelled round winding wire - Part 1: General requirements
(English Translation)**

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Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative References	
3 Terms, Definitions, General Rules, and Appearance	
3.1 Terms and Definitions	
3.2 General Rules	
3.3 Appearance	
4 Size	
4.1 Conductor diameter	
4.2 Conductor out-of-roundness (conductor nominal diameter $\geq 0.063\text{mm}$)	
4.3 Minimum film thickness and minimum self-adhesive layer thickness (conductor nominal diameter $\geq 0.063\text{mm}$)	
4.4 Maximum outer diameter	
5 Resistors	
6 Elongation	
7 Resilience	
7.1 Conductor nominal diameter of 0.080 mm and above to 1.600 mm and below	
7.2 Conductor nominal diameter 1.600mm or above	
8 Flexibility and adhesion	
8.1 Round bar winding test (conductor nominal diameter 1.600 mm and below)	
8.2 Tensile test (conductor nominal diameter $\geq 1.600\text{ mm}$)	
8.3 Sudden Break Test (Conductor nominal diameter 1.000 mm and below)	
8.4 Peel test (conductor nominal diameter $\geq 1.000\text{ mm}$)	
9 Thermal shock	
9.1 Conductors with a nominal diameter of 1.600 mm and below	
9.2 Conductors with a nominal diameter of 1.600 mm or more	
10 Softening and breakdown	
11 Scratch-resistant	
12 Solvent resistant	
13 Breakdown voltage	
13.1 General Rules	

- 13.2 Conductors with a nominal diameter of 0.100 mm and below
- 13.3 Conductors with nominal diameters from 0.100 mm to 2.500 mm and below
- 13.4 Conductors with a nominal diameter of 2.500 mm or more
- 14 Coating film continuity (conductor nominal diameter 1.600mm and below) 15.
- Temperature index 15
- 16 Refrigerant
- 17 Direct weldability
- 18 Thermal bonding or solvent bonding 16.
- 19 Dielectric loss coefficient
- 20 Transformer oil resistant
- 21 Weightlessness
- 23 Pinhole Test
- 30 Packaging
- Appendix A (Informative) Intermediate Dimensions of Nominal Conductor Diameter (R40)
- Appendix B (Normative) Calculation Method for Linear Resistance
- B.1 For conductors with a nominal diameter of 0.071 mm and below,
- B.2 For conductors with a nominal diameter of 0.071 mm or more but less than 0.280 mm,
- Appendix C (Informative) Resistor
- Appendix NA (Informative) Table 25. Model Numbers and Comparison of Enamelled Round Winding Wires
- NA.1 Model Example Comparison Table
- NA.2 Symbols and codes for enameled round windings
- Appendix NB (Informative) Comparison of Test Methods and Test Item Categories for Enamelled Round Winding Wire

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 is Part 1 of GB/T 6109 "Enamelled Round Winding Wire". GB/T 6109 has already published the following parts.

---Part 1: General Provisions;

---Part 2: Grade 155 Polyester Enameled Copper Round Wire;

- Part 3: Grade 120 acetal enameled copper round wire;
- Part 4: Grade 130 direct-welding polyurethane enameled copper round wire;
- Part 5: Grade 180 Polyesterimide Enameled Copper Round Wire;
- Part 6: Grade 220 polyimide enameled copper round wire;
- Part 7.130L grade polyester enameled copper round wire;
- Part 9: Grade 130 Polyamide Composite Direct Soldering Polyurethane Enameled Copper Round Wire;
- Part 10: Grade 155 direct-welding polyurethane enameled copper round wire;
- Part 11: Grade 155 Polyamide Composite Direct Soldering Polyurethane Enameled Copper Round Wire;
- Part 12: Grade 180 polyamide composite polyester or polyesterimide enameled copper round wire;
- Part 13: Grade 180 direct-welding polyesterimide enameled copper round wire;
- Part 14: Grade.200 polyamide-imide enameled copper round wire;
- Part 15: Grade 130 self-adhesive direct-soldering polyurethane enameled copper round wire;
- Part 16: Grade 155 self-adhesive direct-soldering polyurethane enameled copper round wire;
- Part 17: Grade 180 self-adhesive direct-soldering polyesterimide enameled copper round wire;
- Part 18: Grade 180 self-adhesive polyesterimide enameled copper round wire;
- Part 19: Grade.200 self-adhesive polyamide-imide composite polyester or polyesterimide enameled copper round wire;
- Part 20: Grade.200 polyamide-imide composite polyester or polyesterimide enameled copper round wire;
- Part 21: Grade.200 Polyester-Amide-Imine Enameled Copper Round Wire;
- Part 22: Grade 240 Aromatic Polyimide Enameled Copper Round Wire;
- Part 23: Grade 180 direct-welding polyurethane enameled copper round wire.

This document supersedes GB/T 6109.1-2008 "Enamelled Round Winding Wire - Part 1: General Provisions" and is consistent with GB/T 6109.1-2008.

In comparison, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- Added "Method for Representing Winding Wire Products" (see 3.2.2);
- Added a minimum coating thickness requirement for the "intermediate dimension of the conductor's nominal diameter" (see 4.3.3);
- Added the standard requirements for bare copper wire used in enameled windings in the "Resistance" section, along with reference resistance nominal values (see Chapter 5);
- Added a general rule on "breakdown voltage" (see 13.1);
- Added minimum breakdown voltage values at room temperature for conductors with nominal diameter (R40) of 0.100 mm and below (see Table 9);
- The requirements for the test environment in the "Test Methods" section have been revised (see 3.2.1, 3.2 in the 2008 edition);
- The magnification requirement for the magnifying glass in "Appearance" has been changed (see 3.3, 2008 version 3.3);
- Changed the minimum enamel thickness for both non-self-adhesive enameled wire size (R20) and self-adhesive enameled wire size (R20) in "Conductor Diameter".

Maximum outer diameter requirements (see 4.1, Table 1, 2008 edition);

- The range of applicable conductor nominal diameters for "Resistors" has been changed (see Chapter 5, Chapter 5 of the 2008 edition);
- The specified value for "elongation" has been changed (see Chapter 6, Chapter 6 of the 2008 edition);
- The regulation on "breakdown voltage of conductors with nominal diameter of 0.100mm and below" has been revised, now divided into conductor nominal diameter (R20) and conductor standard...

The intermediate dimension of the diameter (R40) is referred to as 13.2, 13.1 in the 2008 edition;

- The regulation regarding "breakdown voltage of conductors with nominal diameters of 0.100mm and above to 2.500mm and below" has been revised, now divided into conductor nominal diameters...

The intermediate dimension between the diameter (R20) and the nominal conductor diameter (R40) (see 13.3, 13.2 of the 2008 edition);

- The minimum breakdown voltage at room temperature for conductors with nominal diameter (R20) of 0.100 mm and below in Table 8 has been revised (see Table 8, 2008). Table 8 of the version);

- The maximum number of pinholes per 30m in "Table 13 Coating Film Continuity" has