

ICS 29.060.01

CCS K 12



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

GB/T 6109.4-2008

Replacing GB/T 6109.4-1988

**Enamelled round winding wire -- Part 4: Solderable
polyurethane enamelled round copper wire, class 130**

漆包圆绕组线 第4部分:130级直焊聚氨酯漆包铜圆线

(English Translation)

Issued on: April 23, 2008

Implemented on: December 1, 2008

Issued by: Standardization Administration of China

Table of Contents

Preface	
1 Scope	
2 Normative references	
3 Definitions, test methods and appearance General	
Size 4	
5 Resistance	
Elongation 1	
7 Resiliency	
8 Flexibility and adhesion	
9 Thermal Shock	
10 Softening	
11 Scratch (conductor nominal diameter 0.250mm and 2.000mm above and below)	
12 Solvent	
13 Breakdown Voltage	
14 Film continuity	
15 Temperature index	
16 Anti-freezing agent	
17 Solderable	
18 Thermal bonding	
19 3 dielectric loss factor	
20 Transformer oil resistant	
21 3 Loss	
23 Pinhole test	
30 3 Packaging	

Foreword

GB/T 6109 "enamelled round winding wires" is divided into 22 parts.

- Part 1. General requirements;
- Part 2. 155 polyester enamelled round copper wire;
- Part 3. 120 acetal enamelled round copper wire;

- Part 4. 130 solderable polyurethane enamelled round copper wire;
- Part 5. 180 polyester enamelled round copper wire;
- Part 6. 220 Polyimide enamelled round copper wire;
- Part --- Article 7. 130L grade polyester enamelled round copper wire;
- Part 9. 130 polyamide composite solderable polyurethane enamelled round copper wire;
- Part 10. 155 solderable polyurethane enamelled round copper wire;
- Part 11. 155 polyamide composite solderable polyurethane enamelled round copper wire;
- Part 12. 180 polyester or polyamide, polyester enamelled round copper wire;
- Part 13. 180 solderable polyester-imide enamelled round copper wire;
- Part 14. Polyamide-imide 200 enamelled round copper wire;
- Part 15. 130 self-adhesive straight welding polyurethane enamelled round copper wire;
- Part 16. 155 self-adhesive straight welding polyurethane enamelled round copper wire;
- Part 17. 180 self-adhesive Solderable polyesterimide enamelled round copper wire;
- Part 18. 180 self-adhesive polyester enamelled round copper wire;
- Part 19.200 self-adhesive polyester or polyester-polyamide-imide enamelled round copper wire;
- Part 20.200 polyester or polyester-polyamide imide enamelled round copper wire;
- Part 21.200 Polyester - amide - imide enamelled round copper wire;
- Part 22. 240 aromatic polyimide enamelled round copper wire;
- Part 23. 180 straight welding polyurethane enamelled round copper wire.

This is Part 4 GB/T 6109's. This section identical with IEC 60317-4:2000 "Standard winding wires products Part 4. 130 solderable polyurethane enamelled round copper wire, "Version 3.2 (in English).

For ease of use, this section made the following editorial changes.

- Deleted international standards foreword;
- With a decimal point instead of a comma as the decimal point, "";
- According to IEC 60317-0-1:2005 increase the appearance requirements;
- According to IEC 60317-0-1:2005 increases the pinhole pilot projects.

Since the implementation of this section instead of GB/T 6109.4-1988.

This section compared with the GB/T 6109.4-1988, the main changes are as follows.

- Conductor nominal diameter range increased from 0.018mm ~ 2.500mm were adjusted to 0.018mm ~ 2.000mm (Level 1) and 0.020mm ~ 2.000mm (level 2), and the elimination of three of the specifications;
- Clear temperature index 130, thermal shock temperature of 155 °C, thermal shock test using a predetermined diameter rod from the original standard by Conductor Nominal diameter range binning to press each conductor nominal diameter of the project;
- Increasing the breakdown voltage of the high temperature, index performance requirements;
- Solder time from 10s/mm and 15s/mm (levels 1 and 2), respectively, to 8s/mm and 12s/mm, while the shortest solder GB/T 6109.4-2008/IEC 60317-4:2000 Inter reduced from 3s to 2s;
- Increasing the pinhole pilot projects.

This part is proposed by the China Electrical Equipment Industrial Association.

This part of the National Standardization Technical Committee Wire and Cable (SAC/TC213) centralized.

This part of the unit responsible for drafting. Shanghai Electric Cable Research Institute.

Participated in the drafting of this section. Zhongshan Prudential Co. enameled wood, Donggang Wire Factory, Suzhou St. Lee Cable Co., Ltd., the first Gordon Electrical Equipment Co., Ltd., Zhejiang Great Wall Electronic Technology Group, Ltd. Hongbo cable.

1 Scope

GB/T 6109 This section provides a single paint polyurethane resin-based 130 solderable enamelled round copper wire requirements. in case Chemical characteristics of the original can retain the resin and satisfy all the requirements specified in the wire, the resin may be modified.

NOTE: chemically-modified resin is a variation of, or contain one or more additives to improve certain properties of the resin or its usage characteristics.

130 represents the thermal level, which requires a minimum temperature index of 130, a heat shock temperature of at least 155 °C.

Corresponding to the temperature index temperature in Celsius is not recommended wire temperature, because it depends on the type of equipment used include Many factors within.

Conductor nominal diameter range specified in this standard are.

--- Level 1. 0.018mm and 2.000mm above and below;

--- Level 2. 0.020mm and 2.000mm above and below.

Nominal press GB/T 6109.1-2008 prescribed in Chapter 4, the diameter of the conductor.

2 Normative references

The following documents contain provisions which, through reference to GB/T 6109 to the present, constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

Part 1 GB/T 6109.1-2008 enamelled round winding wire. General requirements (IEC 60317-0-1:2005, IDT)

3.1 Definitions, test methods - General

Definitions, test methods, see General GB/T 6109.1-2008 Chapter 3.

If GB/T 6109.1-2008 in this section are contradictory to this section shall prevail.

3.2 Appearance

See GB/T 6109.1-2008 in 3.3.

4 Dimensions

See GB/T 6109.1-2008 in Chapter 4.

5 Resistance

See GB/T 6109.1-2008 in Chapter 5.

6 Elongation

See GB/T 6109.1-2008 in Chapter 6.

7 Resiliency

See GB/T 6109.1-2008 in Chapter 7.

GB/T 6109.4-2008/IEC 60317-4:2000