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

GB/T 4074.1-2024

Replacing GB/T 4074.1-2008

**Test methods of winding wires - Part 1: General
(English Translation)**

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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 1 of GB/T 4074 Winding Wire Test Methods: GB/T 4074 has been published in the following parts:

- Part 1: General provisions;
- Part 2: Dimensional measurement;
- Part 3: Mechanical properties;
- Part 4: Chemical properties;
- Part 5: Electrical properties;
- Part 6: Thermal properties;
- Part 7: Test method for determining the temperature index of enameled winding wire;

--- Part 8: Test method for determination of temperature index of enameled winding wire - Rapid method;

--- Part 21: High frequency pulse voltage resistance:

This document replaces GB/T 4074.1-2008 "Winding wire test methods Part 1: General provisions" and is compatible with GB/T 4074.1-2008 Compared with the previous version, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

--- Added the definition of "curing" (see 3.1:8);

--- Added the definition of "zero defect winding wire" (see 3.1:18);

--- Deleted "Type test (T)" (see 3.17 of the:2008 edition);

--- Deleted "sampling experiment (R)" (see 3.18 of the:2008 edition);

--- Deleted the definition of "routine test (S)" (see 3.19 of the:2008 edition);

--- Changed the temperature and humidity ranges in the general test method (see 3.2, Chapter 3 of the:2008 edition):

This document is equivalent to IEC 60851-1:2021 "Test methods for winding wires - Part 1: General provisions":

The following minimal editorial changes were made to this document:

--- In order to coordinate with the existing standards, the name of the standard is changed to "Winding Wire Test Methods Part 1: General Provisions":

Introduction

Winding wire is one of the main raw materials for power, motor, electrical appliances, home appliances, electronics, communications, transportation, power grid, aviation and other fields:

It has a wide range and covers many fields, and has become an important mechanical industrial product:

GB/T 4074 Winding Wire Test Methods is the only test method standard for measuring winding wire products in China: It is very important for product testing and market regulation:

It plays an important role in both market and product improvement:

GB/T 4074 aims to establish the test method standards for the performance of different types of winding wire products and is intended to consist of the following 9 parts:

--- Part 1: General provisions: The purpose is to establish the terms, definitions and general

test principles for winding wire test methods:

--- Part 2: Dimensional measurement: The purpose is to establish test methods for measuring the dimensions of different products of winding wire:

--- Part 3: Mechanical properties: The purpose is to establish test methods for the mechanical properties of different types of winding wire products:

--- Part 4: Chemical properties: The purpose is to establish test methods for the chemical properties of different types of winding wire products:

--- Part 5: Electrical properties: The purpose is to establish test methods for the electrical properties of different types of winding wire products:

--- Part 6: Thermal properties: The purpose is to establish test methods for the thermal properties of different types of winding wire products:

--- Part 7: Test method for determining the temperature index of enameled winding wire: The purpose is to establish a method for determining the temperature index of enameled winding wire:

experiment method:

--- Part 8: Test method for determining the temperature index of enameled winding wire: Rapid method: The purpose is to establish the determination of the temperature index of enameled winding wire:

Rapid test method for the temperature index:

--- Part 21: High-frequency impulse voltage resistance performance: The purpose is to establish the test method for the high-frequency impulse voltage resistance performance of winding wires:

Winding wire test methods Part 1: General provisions

1 Scope

This document describes the general provisions for testing methods for winding wires and also gives the terms and Definition: For the table of contents of GB/T 4074.2-2024 to GB/T 4074.6-2024, see Appendix A:

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 4074.2-2024 Winding wire test methods Part 2: Dimensional measurement (IEC 60851-2:2019, IDT) GB/T 4074.3-2024 Winding wire test methods Part 3: Mechanical properties (IEC 60851-3:2023, IDT) Note: There is no technical difference between the referenced content of GB/T 4074.3-2024 and the referenced content of IEC 60851-3:2019:

GB/T 4074.4-2024 Test methods for winding wires Part 4: Chemical properties (IEC 60851-4:2016, IDT) GB/T 4074.5-2024 Winding wire test methods Part 5: Electrical properties (IEC 60851-5:2019, IDT) GB/T 4074.6-2024 Winding wire test methods Part 6: Thermal properties (IEC 60851-6:2012, IDT)

3 Terms, definitions and general test methods

3.1

Terms and Definitions the following terms and definitions apply to this document:

3.1.1

Self-adhesive layer bonding layer the material coated on the surface of the enameled wire has the specific function of making the enameled wires adhere to each other:

3.1.2

Bunched wire

A winding wire composed of multiple thin-diameter insulated wires bundled together in a non-predetermined geometric position, which may or may not have an outer sheath:

Coating:

3.1.3

Thermal class

Thermal properties of winding wires expressed in terms of temperature index and thermal shock temperature:

3.1.4

Coating

A material applied to a conductor or insulating wire by an appropriate method and then dried and/or cured: