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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 28427-2026

Replacing GB/T 28427-2012

Cables for electrified railways - 27.5 kV single-phase AC power cables and cable accessories

电气化铁路电缆 27.5kV单相交流电力电缆及附件

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Standardization Administration of the PRC

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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 replaces GB/T 28427-2012 "27.5kV Single-Phase AC Cross-linked Polyethylene Insulated Cables and Accessories for Electrified Railways" and is consistent with... Compared with GB/T 28427-2012, apart from structural adjustments and editorial changes, the main technical changes are as follows:

a) The scope has been changed (see Chapter 1, Chapter 1 of the.2012 edition);

b) The terms "approximate value" and "hypothetical value" and their definitions have been removed (see

3.4 of the.2012 edition);

c) The definitions of the terms "intermediate value," "conductor connection hardware," "terminal," "indoor terminal," and "outdoor terminal" have been changed (see 3.2-3.6). (2012 edition, 3.3, 3.5~3.8)

d) Added requirements for the performance of ethylene propylene rubber insulation compounds, the designation for polyethylene sheathing materials, and the designation and material properties of polyamide sheathing materials. (See 4.2, 4.3, Table 6, and Table 9);

e) The designation for the halogen-free, low-smoke outer sheath has been changed (see 4.3,.2012 edition of 4.3);

f) The usage environments for other cable accessories have been removed (see

5.2.2.3 in the.2012 edition);

g) The altitude correction for the terminal accessory withstand voltage has been changed (see 5.2.2.2,.2012 version 5.2.2.2);

h) The technical specifications for cross-linked polyethylene insulation materials and semi-conductive shielding materials have been changed (see Tables 6 and 7, Table 6 in the.2012 edition);

i) The shielding, isolation sleeve, armor, and outer sheath have been modified (see 7.1.3~7.1.5, 7.1.7, and 7.1.3~

7.1.6 in the.2012 version);

1 Scope

GB/T 28427-2026 is the Chinese national standard covering the 27.5 kV cable that feeds a railway catenary - single phase, carrying a load that swings with every train, in a trackside environment of vibration, ballast and rodents, with the terminations and joints that go with it. At 31,000 words it replaces GB/T 28427-2012, and it belongs with the traction switchgear standard GB/T 32580.5-2026 of the same batch. It was issued on 28 January 2026 and has been in force since 1 August 2026, replacing GB/T 28427-2012. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the voltage markings, materials, usage characteristics, and conditions for 27.5kV single-phase AC power cables and accessories used in electrified railways. Cable product codes and designations, cable technical requirements, cable accessory technical requirements, inspection rules and markings, packaging, transportation and storage. The test conditions, cable tests, and cable accessory tests are described. This document applies to single-phase AC cables with a rated voltage U0 of 27.5kV for electrified railways, as well as their indoor and outdoor terminals, intermediate joints, and other components. Production and inspection of internal tapered insert-type separable connectors. Other related products should follow the same procedures.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 2951.11-2008 General Test Methods for Insulation and Sheath Materials of Cables and Optical Fibers - Part

11.General Test Methods Thickness and dimensional measurement, mechanical property testing

GB/T 2951.12-2008 General Test Methods for Insulation and Sheath Materials of Cables and Optical Fibers - Part

3 Identification Marking of Wires and Cables

GB/T 7113.2 Insulating hoses - Part

10 Spark Test for Extruded Sheaths

GB/T 3048.11 Electrical Performance Test Methods for Wires and Cables - Part

11 Dielectric Loss Tangent Test

GB/T 3048.12 Electrical Performance Test Methods for Wires and Cables - Part

12 General Test Methods Thermal aging test method

GB/T 2951.13-2008 General Test Methods for Insulation and Sheath Materials of Cables and Optical Fibers - Part

13.General Test Methods Density determination methods. water absorption test, shrinkage test

GB/T 2951.14-2008 General Test Methods for Insulation and Sheath Materials of Cables and Optical Fibers - Part

13 Impulse Voltage Test

GB/T 3512 Accelerated aging and heat resistance test of vulcanized rubber or thermoplastic rubber in hot air

GB/T 3956-2008 Conductors of Cables

GB/T 6995.3 Methods for Identification Marking of Wires and Cables Part

14 General Test Methods Low temperature test

GB/T 2951.21-2008 General Test Methods for Insulation and Sheath Materials of Cables and Optical Fibers - Part

21.Elastomer Compounds Test methods include ozone resistance test, heat extension test, and mineral oil immersion test.

GB/T 2951.31-2008 General Test Methods for Insulation and Sheath Materials of Cables and Optical Fibers - Part

31.Polyvinyl Chloride Blends Specialized test methods. high temperature pressure test, crack resistance test

GB/T 2951.32-2008 General Test Methods for Insulation and Sheath Materials of Cables and Optical Fibers - Part

32.Polyvinyl Chloride Blends Specialized test methods. weight loss test, thermal stability test