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

GB/T 25085.5-2026

**Road vehicles - Automotive cables - Part 5: Dimensions and
requirements for 600 V a. c. or 900 V d. c. and 1 000 V a. c. or 1
500 V d. c. single core copper conductor cables**

(English Translation)

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1 Scope

This Document specifies the dimensions and requirements for single-core copper conductor cables with a nominal system voltage not exceeding 600 V A.C. or 900 V D.C. and 1000 V A.C.

or 1500 V D.C.

This Document applies to single-core cables for general-purpose road vehicles, and also to the cores in multi-core cables.

NOTE: A list of commonly used cable product models covered in this Document is provided in

Appendix

NA.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 25085.1-2024 Road vehicles - Automotive cables - Part 1.Vocabulary and design guidelines (ISO 19642-1.2023, IDT)

NOTE: The quoted contents from ISO 19642-1.2023 have no technical differences with the contents quoted from ISO 19642-1.2019.

GB/T 25085.2-2024 Road vehicles - Automotive cables - Part 2.Test methods (ISO 19642-2.2023, IDT)

NOTE: The quoted contents from ISO 19642-2.2023 have no technical differences with the contents from ISO 19642-2.2019.

EN 13602 Copper and copper alloys - Drawn, round copper wire for the manufacture of electrical conductors

ASTM B1 Standard Specification for Hard Drawn Copper Wire

ASTM B3 Standard Specification for Soft or Annealed Copper Wire

ASTM B33 Standard Specification for Tin Coated Soft or Annealed Copper Wire for Electrical Purposes

ASTM B298 Standard Specification for Silver Coated Soft or Annealed Copper Wire

ASTM B355 Standard Specification for Nickel Coated Soft or Annealed Copper Wire

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 25085.1-2024 apply.

The websites for the terminology databases maintained by ISO and IEC for standardization are as follows.

4.1 General test conditions

The test conditions of GB/T 25085.2-2024 shall be applied.

Cables shall be tested according to the provisions of Table 2.

If the supplier and purchaser agree to modify or change the test methods and requirements, all changes and modifications shall be clearly recorded.

4.2 Safety precautions

The precautions described in the "WARNING" at the beginning of this Document shall be followed.

4.3 Voltage range

The upper limit of rated voltage of the cables described in this Document is as follows.

--- Maximum 600 V A.C. or 900 V D.C.;

--- Maximum 1000 V A.C. or 1500 V D.C.

Conductor specification of 0.35 mm² shall not be applied to 1000 V A.C. or 1500 V D.C cable.

NOTE: Appendix B contains cable color identification information for determining the rated voltage values in this Document.

4.4 Temperature grade

All temperature grades in GB/T 25085.1-2024 apply to copper conductor cables.

4.5 Conductor material

The conductor shall be stranded from bare copper or copper-plated wire as shown in Table 1.

Conductors with a specification greater than or equal to 0.5 mm² shall consist of annealed soft copper wire or annealed compressed copper wire.

Conductors with a specification less than 0.5 mm² shall consist of annealed soft copper wire, annealed soft compressed copper wire, non-annealed hard copper wire, or copper alloy wire.

Specific requirements for the conductor shall conform to the provisions for the used materials.

Elongation requirements shall be determined through negotiation between the supplier and the purchaser.

For all conductors except alloy conductors, the resistance and cross-sectional area (CSA) of the finished cable shall conform to the provisions of Table 10. When alloy conductors are used, the resistance requirements shall be determined through negotiation between the supplier and the purchaser.

NOTE: See Appendix A for examples of stranded wires.

Table 1 -- Conductor description

4.6 Conductors

The conductors of finished cables shall conform to the provisions for cross-sectional area (CSA) and resistance in Table 10.

The maximum diameter of the conductor shall conform to the provisions of Table 11.

The stranding structure of the conductor is not a normative requirement.

NOTE 1: Existing stranding structures for copper conductors are shown in Table A.1.

NOTE 2: Recommended stranding structures for copper conductors are shown in Table A.2.

Other stranding structures that meet the above requirements and are determined through negotiation between the supplier and the purchaser may be used for copper conductors.

4.7 Insulation thickness

This Document specifies the following two different insulation thicknesses.

--- Thick-wall insulation;

--- Thin-wall insulation.

The minimum wall thickness for different conductor specifications shall conform to the provisions of Table 11.

The nominal wall thickness is calculated from the minimum wall thickness in Table 11 using the following Formula.

Where.

W_{min} - minimum wall thickness, in mm;

W_{nom} - nominal wall thickness, in mm.

4.8 Outer diameter of cable

The outer diameter of the cable for each conductor specification and insulation thickness shall conform to the provisions of Table 11.