

ICS 43.040.10



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

GB/T 25085.9-2026

Road vehicles - Automotive cables - Part 9: 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. round, sheathed, screened or unscreened multi or single core copper conductor cables

(English Translation)

Issued on: February 27, 2026

Implemented on: September 1, 2026

Issued by: State Administration for Market Regulation

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1 Scope

This Document specifies the dimensions and requirements for round, sheathed, multi core or 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 sheathed multi core or single core cables for general-purpose road vehicles, and also to the wire cores in sheathed multi-core or single 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.

ISO 19642-5 Road vehicles - Automotive cables - Part 5.Dimensions and requirements for 600 V A.C. or 900 V D.C. and 1000 V A.C. or 1500 V D.C. single core copper conductor cables

NOTE: GB/T 25085.5-2025 Road vehicles - Automotive cables - Part 5.Dimensions and requirements for 600 V A.C. or 900 V D.C. and 1000 V A.C. or 1500 V D.C. single core copper conductor cables (ISO 19642-5.2019, IDT)

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 1.

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

Rated voltage shall be determined by the rated value of 600 V A.C. or 900 V D.C. and 1000 V

A.C. or 1500 V D.C. of the wire core.

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

4.4 Temperature grade

Rated temperature grades are determined by the rated temperatures of all wire core and the sheath.

The rated value of cable shall be equal to the minimum rated values of a single wire core and sheath.

For detailed information on temperature grade, see GB/T 25085.1-2024.

4.5 Conductor material

The conductor materials shall meet the requirements of ISO 19642-5.

4.6 Conductors

The conductors of each wire core in multi-core or single-core shall meet the requirements of

ISO 19642-5.

4.7 Sheath thickness

This Document allows to take two different sheath thicknesses.

--- Thick-wall sheath;

--- Thin-wall sheath.

The insulation wall thickness of each wire core in single core or multi core shall meet the requirements of ISO 19642-5.

4.8 Outer diameter of wire core

The maximum and minimum outer diameters of each wire cores in the multi-core or single-core shall be as required in ISO 19642-5.

4.9 Representative conductor specification for testing

When a test is required, all combinations of conductor specifications, insulation thickness, and insulation materials shall conform to the relevant provisions.

However, when the supplier and purchaser agree that testing of a representative specification is permitted, only the larger and smaller conductor specifications may be tested to demonstrate the conformity of the cable family.

4.10 Test items and requirements according to GB/T 25085.2-2024

Other manufacturing processes (such as stranding, braiding, and sheath extrusion) in multi-core cables can affect the performance of the wire core in the finished cable. Therefore, the dimensions of the used wire core and the maximum conductor resistance shall meet the requirements of ISO 19642-5, with the following supplementary information.

Minimum wall thickness can follow the design guidelines in A.4 of GB/T 25085.1-2024.

Maximum resistance of wire core can follow the design guidelines in A.5 of GB/T 25085.1-2024.

The maximum conductor resistance value and the minimum wall thickness of the insulation layer should be recorded in the supplier's datasheet and used as a basis for evaluation.

Preferred structural dimensions for round, sheathed, shielded or unshielded, multi-core or single-core copper conductor cables are given in Tables A.1 ~ A.6 of Appendix A.

It is not feasible to provide a complete definition for all possible multi-core cables. In addition to the preferred structure, other structural designs can be performed using the calculation rules in Appendix A of GB/T 25085.1-2024.

The diameter before the sheath can be calculated according to A.3 of GB/T 25085.1-2024.

The wall thickness of the sheath and padding layer can be calculated according to A.6 of GB/T

25085.1-2024.

The maximum and minimum outer diameter of the cable can be calculated according to A.9 of

GB/T 25085.1-2024.