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

GB/T 25085.8-2026

**Road vehicles - Automotive cables - Part 8: Dimensions and
requirements for 30 V a. c. or 60 V d. c. round, sheathed, screened or
unscreened multi or single core aluminium conductor cables**

(English Translation)

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1 Scope

This Document specifies the dimensions and requirements for round, sheathed, multi-core or single-core aluminum conductor cables with a nominal system voltage not exceeding 30 V A.C.

or 60 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 within sheathed multi-core or single-core cables.

NOTE: A list of commonly used cable 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 19642-4 Road vehicles - Automotive cables - Part 4.Dimensions and requirements for 30 V A.C. or 60 V D.C. single core aluminum conductor cables

NOTE: GB/T 25085.4-2020 Road Vehicles - Automotive Cables - Part 4.Dimensions and Requirements for 30 V A.C. or 60 V D.C. Single-Core Aluminum Conductor Cables (ISO 19642-4.2019, 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 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

Rated voltage shall be determined by the rate value of 30 V A.C. or 60 V D.C. of the wire core.

4.4 Temperature grade

Rated values of temperature grades are determined by the rated values of all wire core and the sheath. The rated value of cable shall be equal to the minimum rated values of a single wire

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 19642-4, 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 aluminum 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.

All cable dimensions should be recorded in the supplier's datasheet and used as a basis for evaluation.

Table 2 lists all relevant tests for round, sheathed, shielded or unshielded, multi-core or single-core cables in GB/T 25085.2-2024.

5 Technical Requirements for Individual Wire Core of Cable

The dimensions of thin-wall or thick-wall of wire core shall meet the requirements of ISO 19642-4.

For cables with added sheath protection, any internal conductor structure that does not conform to ISO 19642-4 is considered a special cable and shall be determined through negotiation between the supplier and the purchaser.

6 Technical Requirements for Round, Sheathed, Shielded or

Unshielded, Multi-core or Single-Core Cables

6.1 General requirements

Cables shall be tested by their rated temperature grade according to GB/T 25085.2-2024.

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

6.2.1 Outer diameter and inner layer diameter of cable

If applicable, measure the following parameters.

- Outer diameter of the stranded cable core;
- Outer diameter of the padding layer;
- Outer diameter of the braid;
- Outer diameter of the wrapping tape;
- Outer diameter of the sheath.

Dimensions shall be within the range agreed upon by both the supplier and the purchaser.

6.2.2 Sheath ovality

Ovality shall be less than 10%, measured immediately after extrusion.

NOTE: Ovality may vary after processing due to mechanical deformation.

6.2.3 Sheath thickness

Sheath thickness shall be within the range agreed upon by both the supplier and the purchaser.