INTERNATIONAL STANDARD

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Second edition
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Road vehicles — Automotive cables —

Part 1: Vocabulary and design guidelines

Véhicules routiers — Câbles automobiles —

Partie 1: Vocabulaire et lignes directrices pour la conception

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 32, *Electrical and electronic components and general system aspects*.

This second edition cancels and replaces the first edition (ISO 19642-1:2019), which has been technically revised.

The main changes are as follows:

— new parts have been added to the ISO 19642 series (ISO 19642-11 and ISO 19642-12);

— reflecting these additions ISO 19642-2 had to be amended;

— some new terms and definitions for screened RF cables have been added for a new standard of the ISO 19642 series;

— Annex C has been added to give informative advice on how to address and manage requalification of cables already released against the older ISO standards ISO 6722-1 and ISO 6722-2.

A list of all parts in the ISO 19642 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document was prepared following a joint resolution to improve the general structure of the ISO automotive electric cable standards. This new structure adds more clarity and, by defining a new standard family, opens up the standard for future amendments.

Many other standards currently refer to ISO 6722-1, ISO 6722-2 and ISO 14572. These standards will stay valid at least until the next scheduled systematic review and will be replaced later by the ISO 19642 series.

For new automotive cable projects, customers and suppliers are advised to use the ISO 19642 series.

This document defines general terms used in cable engineering to lay a solid foundation for discussions and written information transfer in this field.

Annex A informally defines a calculation method for many important cable parameters (e.g. resistance limits, several cable dimension).

Annex B informally proposes preferred colour concentrations for automotive cables.

Annex C gives an expert opinion on how to address and manage requalification of single core cables already released against the old, but still active, ISO standards ISO 6722-1 and ISO 6722-2.

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Road vehicles — Automotive cables —

Part 1: Vocabulary and design guidelines

1 Scope

This document defines terms in the field of cables applied in road vehicle general purpose applications, for use in the other parts of the ISO 19642 series.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 19642-7, *Road vehicles — Automotive cables — Part 7: Dimensions and requirements for 30 V a.c. or 60 V d.c. round, sheathed, screened or unscreened multi or single core copper conductor cables*

ISO 19642-8, *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*

3 Terms and definitions

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Terms related to voltage rating

3.1.1
AC voltage
voltage in an alternating current circuit that also periodically reverses because the current has a periodic function of time

Note 1 to entry: Whenever AC voltage is specified in the ISO 19642 series, the AC root mean square (r.m.s.) value shall be used.

3.1.2
60 V cable
cable (3.3.7) intended for use in road vehicle applications where the *nominal system voltage* (3.1.6) is less than or equal to 30 V a.c. or 60 V d.c.

3.1.3
900 V cable
cable (3.3.7) intended for use in road vehicle applications where the *nominal system voltage* (3.1.6) is less than or equal to 600 V a.c. or 900 V d.c.

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