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REDLINE VERSION

Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility

FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60245-8:1998+AMD1:2003+AMD2:2011 CSV. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60245-8 has been prepared by IEC technical committee TC 20: Electric cables. It is an International Standard.

This second edition cancels and replaces the first edition published in 1998, Amendment 1:2003 and Amendment 2:2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) reference to IEC 60245-2 for the tests has been deleted and replaced by IEC 63294;

b) reference to lift cable according to IEC 60245-5 has been deleted;

c) normative references have been updated.

The text of this International Standard is based on the following documents:

Draft	Report on voting
20/2276/FDIS	20/2285/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

This document is to be used in conjunction with IEC 60245-1:2026.

A list of all the parts in the IEC 60245 series, published under the general title *Rubber insulated cables - Rated voltages up to and including 450/750 V*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

1 General

1.1 Scope

This part of IEC 60245 defines the particular specifications requirements for rubber insulated and textile braid covered cords of rated voltage 300/300 V, for use in applications where high flexibility is required, for example iron cords, which apply in addition to the general requirements specified in IEC 60245-1, which apply to all cables.

All cables should comply with the appropriate requirements given in IEC 60245-1 and the individual types of cables should each comply with the particular requirements of this part.

The tests for cables specified in the IEC 60245 series are described in IEC 63294.

1.2 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.

NOTE The IEC 60811 series is currently undergoing a revision, which will lead to a restructuring of its parts. A description of this, as well as a cross-reference table between the current and planned parts is given in IEC 60811-100.

IEC 60228:2024, *Conductors of insulated cables*

IEC 60245-1:2003 2026, *Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 1: General requirements*
Amendment 1: 2007

IEC 60245-2:1994, *Rubber insulated cables – Rated voltages up to and including 450/750 V – Part 2: Test methods*
Amendment 1:1997
Amendment 2:1997

IEC 60719, *Calculation of the lower and upper limits for the average outer dimensions of cables with circular copper conductors and of rated voltages up to and including 450/750 V*

IEC 60811-1-1:1993, *Common test methods for insulating and sheathing materials of electric cables and optical cables – Part 1-1: Methods for general application – Measurement of thickness and overall dimensions – Tests for determining the mechanical properties*
Amendment 1:2001

IEC 60811-1-2:1985, *Common test methods for insulating and sheathing materials of electric cables – Part 1: Methods for general application – Section Two: Thermal ageing methods*
Amendment 1:1989
Amendment 2:2000

IEC 60811-2-1:1998, *Insulating and sheathing materials of Electric and optical cables – Common Test methods– Part 2-1: Methods specific to elastomeric compounds – Ozone resistance, Hot set and mineral oil immersion tests*
Amendment 1:2001

IEC 60811-401, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 401: Miscellaneous tests - Thermal ageing methods - Ageing in an air oven*

IEC 60811-403:2012, *Electric and optical fibre cables - Test methods for non-metallic materials – Part 403: Miscellaneous tests - Ozone resistance test on cross-linked compounds*

IEC 60811-412, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 412: Miscellaneous tests - Thermal ageing methods - Ageing in an air bomb*

IEC 60811-501, *Electric and optical fibre cables - Test methods for non-metallic materials – Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds*

IEC 60811-507, *Electric and optical fibre cables - Test methods for non-metallic materials – Part 507: Mechanical tests - Hot set test for cross-linked materials*

IEC 62440, *Electric cables with a rated voltage not exceeding 450/750 V - Guide to use*

IEC 63294:2021, *Test methods for electric cables with rated voltage up to and including 450/750 V*

~~**2 Spare**~~

~~**3 Spare**~~

~~**4 Spare**~~

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60245-1 and the following apply.

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

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

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

3.1
type test
T
test required before supplying a type of cable covered by this document on a general commercial basis, in order to demonstrate satisfactory performance characteristics to meet the intended application

Note 1 to entry: Type tests are of such a nature that, after they have been carried out, they do not have to be repeated unless changes are made in the cable materials or design which can change the performance characteristics.

3.2
sample test
S
test carried out on samples of a completed cable, or components taken from a completed cable, to check that the finished product meets the design standard

3.3
thread
single textile unit which, when combined with others, forms the braid of the cable

3.4
carrier
element for the winding of the threads

Note 1 to entry: Each carrier can contain several threads.

3.5
crossing
arrangement of all threads of the carriers in order to provide the braid coverage of the cable

~~5.~~4 EPR insulated and braided cord for applications requiring high flexibility

~~5~~4.1 Code designation

60245 IEC 89.

~~5~~4.2 Rated voltage

300/300 V.

~~5~~4.3 Construction

~~5~~4.3.1 Conductors

Number of conductors: 2 or 3.

The conductors shall comply with the requirements given in IEC 60228:2024, Table 4 for Class 6 conductors, except that the maximum resistance of conductors at 20 °C shall be increased by 3 %. The wires ~~may~~ can be plain or tinned.

~~5~~4.3.2 Separator

A separator ~~of suitable material may~~ can be applied around each conductor.

~~5~~4.3.3 Insulation

The insulation shall be an EPR compound of type IE 4 applied around each conductor.

The insulation shall be applied by extrusion.

~~The insulation thickness shall comply with the specified value given in Table 8, Column 2 .~~

The insulation thickness value is specified in Table 3.

~~5~~4.3.4 Fillers

The fillers shall be of textile material.

~~5~~4.3.5 Assembly of cores and fillers

The cores and textile fillers shall be twisted together.

The maximum length of lay shall not exceed 7,5 times the diameter of the assembly of cores. The direction of lay shall be the same for the conductors and for the cores.

A centre filler ~~may~~ can be used.