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Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 1: General requirements

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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 60245-1:2003+AMD1:2007 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 60245-1 has been prepared by IEC technical committee TC 20: Electric cables. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2003, and Amendment 1:2007. 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
20/2271/FDIS	20/2280/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.

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– withdrawn, or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 Scope

This part of IEC 60245 applies to rigid and flexible cables with insulation, and sheath if any, based on vulcanized rubber of rated voltages U_o/U up to and including 450/750 V used in power installations of nominal voltage not exceeding 450/750 V AC.

~~NOTE For some types of flexible cables the term 'cord' is used.~~

Particular types of cables are specified in IEC 60245-3, IEC 60245-4, IEC 60245-6, IEC 60245-7, IEC 60245-8. The code designations of these types of cables are provided in Annex A of this document.

The test methods specified in Part 1 to Part 8 of the IEC 60245 series are given in ~~IEC 60245-2, IEC 60332-1~~ IEC 63294 and in the relevant parts of IEC 60811.

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.

~~IEC 60173:1964, *Colours of the cores of flexible cables and cords*~~

IEC 60228~~:1978~~, *Conductors of insulated cables*

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

IEC 60245-3~~:1994~~, *Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 3: Heat resistant silicone insulated cables*

IEC 60245-4~~:1994~~, *Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 4: Cords and flexible cables*

IEC 60245-6, *Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 6: Arc welding electrode cables*

IEC 60245-7~~:1994~~, *Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 7: Heat resistant ethylene-vinyl-acetate rubber insulated cables*

IEC 60245-8, *Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility*

~~IEC 60332-1:1993, *Tests on electric cables under fire conditions – Part 1: Test on a single vertical insulated wire or cable*~~

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

~~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*~~

~~IEC 60811-1-4:1985, *Common test methods for insulating and sheathing materials of electric cables – Part 1: Methods for general application – Section Four: Tests at low temperature*~~

~~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 andmineral oil immersion tests*~~

~~IEC 60811-3-1:1985, *Common test methods for insulating and sheathing materials of electric cables – Part 3: Methods specific to PVC compounds – Section One: Pressure test at high temperature – Tests for resistance to cracking*~~

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, *Electric and optical fibre cables - Test methods for non-metallic materials - Miscellaneous tests - Ozone resistance test on cross-linked compounds*

IEC 60811-404, *Electric and optical fibre cables - Test methods for non-metallic materials - Miscellaneous tests - Mineral oil immersion tests for sheaths*

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 - Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds*

IEC 60811-504, *Electric and optical fibre cables - Test methods for non-metallic materials - Mechanical tests - Bending tests at low temperature for insulation and sheaths*

IEC 60811-505, *Electric and optical fibre cables - Test methods for non-metallic materials - Mechanical tests - Elongation at low temperature for insulations and sheaths*

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

IEC 60811-508, *Electric and optical fibre cables - Test methods for non-metallic materials - Mechanical tests - Pressure test at high temperature for insulation and sheaths*

IEC 62440, *Electric cables - Guide to use for cables with a rated voltage not exceeding 450/750V*[~~1~~]

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

~~Bibliography~~

~~IEC 60245-5:1994, *Rubber insulated cables – Rated voltages up to and including 450/750 V – Part 5: Lift cables*~~

~~IEC 60245-8:1998, *Rubber insulated cables – Rated voltages up to and including 450/750 V – Part 8: Cords for applications requiring high flexibility*~~

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