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Low-frequency cables and wires with PVC insulation and PVC sheath – Part 1: General test and measuring methods

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Part 1: General test and measuring methods

FOREWORD

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International Standard IEC 60189-1 has been prepared by subcommittee 46C: Wires and symmetric cables, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories.

This fourth edition cancels and replaces the third edition published in 2007. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) Test methods for dielectric strength and insulation resistance that were referenced in the previous edition have been withdrawn. They have been replaced with references to similar test methods described in current standards.
b) References to the IEC 60811 series have been updated as the numbering of this series has completely been changed.

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

FDIS	Report on voting
46C/1099/FDIS	46C/1100/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 60189 series, under the general title *Low-frequency cables and wires with PVC insulation and PVC sheath*, 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 "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

LOW-FREQUENCY CABLES AND WIRES WITH PVC INSULATION AND PVC SHEATH –

Part 1: General test and measuring methods

1 Scope

This part of IEC 60189 specifies mechanical, electrical and climatic test methods for low-frequency cables and wires designed for use in telecommunication inside plants and equipment and in electronic devices employing similar techniques.

NOTE The other parts of IEC 60189 describe the construction and characteristics of each type of cable and wire.

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 60068 (all parts), *Environmental testing*

IEC 60068-2-20:1979[1], *Basic environmental testing procedures – Part 2: Tests – Test T: Soldering*

IEC 60227-2:1997, *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V – Part 2: Test methods*

IEC 60332-1-2, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame*

IEC 60332-2-2, *Tests on electric and optical fibre cables under fire conditions – Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable – Procedure for diffusion flame*

IEC 60811-201, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 201: General tests – Measurement of insulation thickness*

IEC 60811-202, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 202: General tests – Measurement of thickness of non-metallic sheath*

IEC 60811-203, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 203: General tests – Measurement of overall dimensions*

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*

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[1] This fourth edition was replaced in 2008 by a fifth edition *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads.*

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 60811-502, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 502: Mechanical tests – Shrinkage test for insulations*

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

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

IEC 60811-509, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 509: Mechanical tests – Test for resistance of insulations and sheaths to cracking (heat shock test)*

ISO 6892-1, *Metallic materials – Tensile testing – Part 1: Method of test at room temperature*

EN 50289-1-5, *Communication cables – Specifications for test methods – Part 1-5: Electrical test methods – Capacitance.SEC5:Capacitance*