



INTERNATIONAL STANDARD

**Polyvinyl chloride insulated cables of rated voltages up to and including
450/750 V –
Part 3: Non-sheathed cables for fixed wiring**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	8
4 Single-core non-sheathed cable with rigid conductor for general purposes	8
4.1 Code designation	8
4.2 Rated voltage	8
4.3 Construction	9
4.3.1 Conductors	9
4.3.2 Insulation.....	9
4.3.3 Overall diameter	9
4.4 Tests	10
4.5 Guidance on use.....	10
5 Single-core non-sheathed cable with flexible conductor for general purposes	11
5.1 Code designation	11
5.2 Rated voltage	11
5.3 Construction	11
5.3.1 Conductors	11
5.3.2 Insulation.....	11
5.3.3 Overall diameter	12
5.4 Tests	12
5.5 Guidance on use.....	12
6 Single-core non-sheathed cable with solid conductor for internal wiring for a conductor temperature of 70 °C	13
6.1 Code designation	13
6.2 Rated voltage	13
6.3 Construction	13
6.3.1 Conductors	13
6.3.2 Insulation.....	14
6.3.3 Overall diameter	14
6.4 Tests	14
6.5 Guidance on use.....	14
7 Single-core non-sheathed cable with flexible conductor for internal wiring for a conductor temperature of 70 °C	15
7.1 Code designation	15
7.2 Rated voltage	15
7.3 Construction	15
7.3.1 Conductors	15
7.3.2 Insulation.....	16
7.3.3 Overall diameter	16
7.4 Tests	16
7.5 Guidance on use.....	16
8 Single-core non-sheathed cable with solid conductor for internal wiring for a conductor temperature of 90 °C	17
8.1 Code designation	17
8.2 Rated voltage	17

8.3	Construction	17
8.3.1	Conductors	17
8.3.2	Insulation.....	17
8.3.3	Overall diameter	18
8.4	Tests	18
8.5	Guidance on use.....	18
9	Single-core non-sheathed cable with flexible conductor for internal wiring for a conductor temperature of 90 °C	19
9.1	Code designation	19
9.2	Rated voltage	19
9.3	Construction	19
9.3.1	Conductors	19
9.3.2	Insulation.....	19
9.3.3	Overall diameter	20
9.4	Tests	20
9.5	Guidance on use.....	20
	Bibliography.....	22
	Table 1 – General data for type 60227 IEC 01	10
	Table 2 – Tests for type 60227 IEC 01	11
	Table 3 – General data for type 60227 IEC 02	12
	Table 4 – Tests for type 60227 IEC 02	13
	Table 5 – General data for type 60227 IEC 05	14
	Table 6 – Tests for type 60227 IEC 05	15
	Table 7 – General data for type 60227 IEC 06	16
	Table 8 – Tests for type 60227 IEC 06	17
	Table 9 – General data for type 60227 IEC 07	18
	Table 10 – Tests for type 60227 IEC 07	19
	Table 11 – General data for type 60227 IEC 08	20
	Table 12 – Tests for type 60227 IEC 08	21

INTERNATIONAL ELECTROTECHNICAL COMMISSION

POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V –

Part 3: Non-sheathed cables for fixed wiring

FOREWORD

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IEC 60227-3 has been prepared by IEC technical committee 20: Electric cables. It is an International Standard.

This third edition cancels and replaces the second edition published in 1992 and Amendment 1:1997. This edition constitutes a technical revision.

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

- a) the reference to tests according to IEC 60227-2 has been withdrawn and replaced with a reference to IEC 63294;
- b) normative references have been updated.

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

Draft	Report on voting
20/2141/FDIS	20/2154/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 parts in the IEC 60227 series, published under the general title *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*, can be found on the IEC website.

This document is to be used in conjunction with IEC 60227-1.

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.

INTRODUCTION

The IEC 60227 series, published under the general title *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*, consists of the following parts:

IEC 60227-1: General requirements;

IEC 60227-2: Test methods (withdrawn and replaced by IEC 63294);

IEC 60227-3: Non-sheathed cables for fixed wiring;

IEC 60227-4: Sheathed cables for fixed wiring;

IEC 60227-5: Flexible cables (cords);

IEC 60227-6: Lift cables and cables for flexible connections;

IEC 60227-7: Flexible cables screened and unscreened with two or more conductors and of rated voltages up to and including 300/500 V.

This part of IEC 60227, when used in conjunction with IEC 60227-1, forms the complete standard for non-sheathed cables for fixed wiring.

POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V –

Part 3: Non-sheathed cables for fixed wiring

1 Scope

This part of IEC 60227 details the particular standards for polyvinyl chloride insulated single-core non-sheathed cables for fixed wiring of rated voltages up to and including 450/750 V.

This document provides the particular requirements for non-sheathed cables for fixed wiring which apply in addition to the appropriate requirements specified in IEC 60227-1, which apply to all cables.

The tests for cables specified in the IEC 60227 series are described in IEC 63294.

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 60227-1, *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V – Part 1: General requirements*

IEC 60228, *Conductors of insulated cables*

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 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 60811-405, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 405: Miscellaneous tests – Thermal stability test for PVC insulations and PVC sheaths*

IEC 60811-409, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 409: Miscellaneous tests – Loss of mass test for thermoplastic insulations and sheaths*

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 60811-504, *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 60811-505, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 505: Mechanical tests – Elongation at low temperature for insulations and sheaths*

This is a preview of IEC 60227-3 Ed. 3.0 en:2024. [Click here to purchase the full version from the ANSI store.](#)

IEC 60811-506, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 506: Mechanical tests – Impact test at low temperature for insulations 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)*

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 voltages up to and including 450/750 V*