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**Electrical installations in ships –
Part 353: Power cables for rated voltages 1 kV and 3 kV**

INTERNATIONAL
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CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	7
4 General requirements	7
4.1 Rated voltage	7
4.2 Markings	8
4.2.1 Indication of origin and voltage identification	8
4.2.2 Continuity of marking	8
4.2.3 Core identification.....	8
5 Constructional requirements	8
5.1 General description.....	8
5.1.1 Overview	8
5.1.2 Unarmoured cables (excluding 1,8/3 kV).....	9
5.1.3 Armoured cables	9
5.2 Conductors	10
5.3 Insulation	10
5.3.1 Material	10
5.3.2 Application.....	10
5.3.3 Thickness of insulation	10
5.4 Cabling (including fillers and binders)	11
5.5 Inner covering.....	11
5.5.1 General	11
5.5.2 Thickness of inner covering	11
5.6 Screen	12
5.6.1 Construction	12
5.6.2 Application.....	13
5.7 Inner sheath.....	13
5.7.1 Material	13
5.7.2 Application.....	13
5.7.3 Thickness of inner sheath.....	13
5.8 Braid armour	13
5.8.1 General	13
5.8.2 Braid wire diameter.....	14
5.8.3 Coverage density.....	14
5.8.4 Application of the armour.....	14
5.9 Outer sheath	14
5.9.1 Material	14
5.9.2 Application.....	14
5.9.3 Thickness of outer sheath.....	14
5.9.4 Colour of outer sheath	15
5.10 Construction for special applications	15
5.10.1 Cables for installation in areas with explosive atmospheres.....	15
5.10.2 Cables for installation between areas with and without explosive atmospheres.....	15
6 Tests – Methods and requirements.....	15
Annex A (informative) Identification of cores of multicore cables	19

A.1 Inscription 19

A.2 Arrangement of the marks 19

A.3 Spacing and dimensions of the marks 19

A.4 Appearance of inscription..... 20

Bibliography..... 21

Figure A.1 – Arrangement of the marks..... 19

Table 1 – Insulation thickness..... 11

Table 2 – Thickness of extruded inner covering and fictitious diameters 12

Table 3 – Requirements of drain wire..... 12

Table 4 – Tests applicable to all cables 15

Table 5 – Additional tests required for halogen-free cables 17

Table 6 – Additional test required for low smoke cables 17

Table 7 – Additional test required for fire resistant cables 17

Table 8 – Additional tests required for specific performances..... 17

Table 9 – Additional test for cables for installation between areas with and without
explosive atmospheres 18

Table A.1 – Dimensions of the marks..... 20

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FOREWORD

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IEC 60092-353 has been prepared by Subcommittee 18A: Electric cables for ships and mobile and fixed offshore units of IEC Technical Committee 18: Electrical installations of ships and of mobile and fixed offshore units. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2016. This edition constitutes a technical revision.

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

- a) Updated references to IEC 60092-350 for general construction and test methods and IEC 60092-360 for insulating and sheathing materials.
- b) Added subclause 5.10: Construction for special applications.
- c) Added Table 9: Additional test for cables for installation between areas with and without explosive atmospheres.

- d) Deleted the test requirement IEC 60331-21 from Table 7.
- e) Deleted the former Annex A (Alternative enhanced insulation thickness for 0,6/1 kV).

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

Draft	Report on voting
18A/476/CDV	18A/482/RVC

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 of the IEC 60092 series, under the general title *Electrical installations in ships*, 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.

ELECTRICAL INSTALLATIONS IN SHIPS –

Part 353: Power cables for rated voltages 1 kV and 3 kV

1 Scope

This part of IEC 60092 is applicable to shipboard and offshore non radial field power cables with extruded solid insulation, having a voltage rating of 0,6/1 (1,2) kV or 1,8/3 (3,6) kV intended for fixed installations.

Cables designed to maintain circuit integrity during a fire are included.

The various types of power cables are given in 5.1. The constructional requirements and test methods are aligned with those indicated in IEC 60092-350, unless otherwise specified in this document.

The object of this document is:

- to standardize cables whose safety and reliability is ensured when they are installed in accordance with the requirements of IEC 60092-352 or IEC 61892-4,
- to lay down standard manufacturing requirements and characteristics of such cables directly or indirectly bearing on safety, and
- to specify test methods for checking conformity with those requirements.

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 60050-461, *International Electrotechnical Vocabulary – Part 461: Electric cables*

IEC 60079-14:2013 *Explosive atmospheres – Part 14: Electrical installations design, selection and erection*

IEC 60092-350:2020, *Electrical installations in ships – Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications*

IEC 60092-360, *Electrical installations in ships – Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables*

IEC 60228, *Conductors of insulated cables*

IEC 60331-1, *Tests for electric cables under fire conditions – Circuit integrity – Part 1: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter exceeding 20 mm*

IEC 60331-2, *Tests for electric cables under fire conditions – Circuit integrity – Part 2: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter not exceeding 20 mm*

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 60332-3-22, Tests on electric and optical fibre cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A

IEC 60445, Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals, conductor terminations and conductors

IEC 60684-2, Flexible insulating sleeving – Part 2: Methods of test

IEC 60754-1, Test on gases evolved during combustion of materials from cables – Part 1: Determination of the halogen acid gas content

IEC 60754-2, Test on gases evolved during combustion of materials from cables – Part 2: Determination of acidity (by pH measurement) and conductivity

IEC 61034-2, Measurement of smoke density of cables burning under defined conditions – Part 2: Test procedure and requirements