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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICAL INSTALLATIONS IN SHIPS –

Part 378: Optical fibre cables

FOREWORD

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IEC 60092-378 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.

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

Draft	Report on voting
18A/488/FDIS	18A/493/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 60092 series, published 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- withdrawn, or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.

The content of the corrigendum 1 (2025-12) has been included in this copy.

ELECTRICAL INSTALLATIONS IN SHIPS –

Part 378: Optical fibre cables

1 Scope

This part of IEC 60092 is applicable to shipboard and offshore optical fibre cables, intended for fixed installations.

Cables designed to maintain functional integrity during fire given in 6.1 and to be installed in explosive atmospheres given in 6.2 are included.

The various types of optical fibre cables are given in Clause 6. 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 60092-401 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.

All cables described in this document, are halogen-free as per Table 4.

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 (IEV) – 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 60092-352, *Electrical installations in ships – Part 352: Choice and installation of electrical cables*

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 60092-401, *Electrical installations in ships – Part 401: Installation and test of completed installation*

IEC 60304, *Standard colours for insulation for low-frequency cables and wires*

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 60331-25, *Tests for electric cables under fire conditions – Circuit integrity – Part 25: Procedures and requirements – Optical fibre 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 60332-3-24, *Tests on electric and optical fibre cables under fire conditions – Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category C*

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

IEC 60754-2:2011, *Test on gases evolved during combustion of materials from cables – Part 2: Determination of acidity (by pH measurement) and conductivity*

IEC 60794-1-1:2023, *Optical fibre cables – Part 1-1: Generic specification – General*

IEC 60794-1-21, *Optical fibre cables – Part 1-21: Generic specification – Basic optical cable test procedures – Mechanical tests methods*

IEC 60794-1-22, *Optical fibre cables – Part 1-22: Generic specification – Basic optical cable test procedures – Environmental test methods*

IEC 60794-1-23, *Optical fibre cables – Part 1-23: Generic specification – Basic optical cable test procedures – Cable element test methods*

IEC 60793-1-40, *Optical fibres – Part 1-40: Attenuation measurement methods*

IEC 60794-1-111, *Optical fibre cables – Part 1-111: Generic specification – Basic optical cable test procedures – Mechanical tests methods – Bend, method E11*

IEC 61892-4, *Mobile and fixed offshore units – Electrical installations – Part 4: Cables*

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IEC 60331-11:1999+AMD1:2009, *Tests for electric cables under fire conditions – Circuit integrity – Part 11: Apparatus – Fire alone at a flame temperature of at least 750 °C*

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

IEC 60793-2-10:2019+AMD1:2022, *Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres*

IEC 60793-2-50, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60794-2, *Optical fibre cables – Part 2: Indoor cables – Sectional specification*

IEC TR 63194, *Guidance on colour coding of optical fibre cables*

ISO 16425, *Ships and marine technology – Specifications for the installation of ship communication networks for shipboard equipment and systems*

ISO/IEC 11801-1*, Information technology – Generic cabling for customer premises – Part 1: General requirements*

DNV Class Programme Type Approval
DNV-CP-0402:September 2021, *Optical fibre cables*

IMO: SOLAS, consolidated edition, 2014

IMO: SOLAS, consolidated edition, Supplement December 2014

IMO: SOLAS, consolidated edition, Supplement December 2015

IMO: *SOLAS, FFS code, International Code for Fire Safety Systems*, 2015 edition. Corrigenda February 2017

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