Australian/New Zealand Standard™

Electrical installations in ships

Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications

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AS/NZS IEC 60092.350:2019

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The following are represented on Committee EL-003:

Australian Cablemakers Association
Australian Industry Group
Electrical Regulatory Authorities Council
Engineers Australia
Institute of Electrical Inspectors (Australia)
Master Electricians (New Zealand)
National Electrical and Communications Association (Australia)
Queensland University of Technology
WorkSafe New Zealand

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Australian/New Zealand Standard™

Electrical installations in ships

Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications

Originated as AS 60092.350—2005.
Jointly revised and redesignated as AS/NZS IEC 60092.350:2019.

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-003, Electric Wires and Cables, to supersede AS 60092.350—2005, *Electrical installations in ships, Part 350: Shipboard power cables — General construction and test requirements.*

The objective of this Standard is to provide the general constructional requirements and test methods for use in the manufacture of electric power, control and instrumentation cables with copper conductors intended for fixed electrical systems at voltages up to and including 18/30(36) kV on board ships and offshore (mobile and fixed) units.

The following types of cables are not included:

(a) Optical fibre.

(b) Sub-sea and umbilical cables.

(c) Data and communication cables.

(d) Coaxial cables.

This Standard is identical with, and has been reproduced from, IEC 60092-350:2014, *Electrical installations in ships — Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications*.

As this document has been reproduced from an International Standard, the following applies:

(i) In the source text "this part of IEC 60092" should read "this Australian/New Zealand Standard".

(ii) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICAL INSTALLATIONS IN SHIPS –

Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications

FOREWORD

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International Standard IEC 60092-350 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.

This fourth edition cancels and replaces the third edition published in 2008 and constitutes a technical revision.

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

a) reference to IEC 60092-360 for both the insulating and sheathing compounds;
b) partial discharge tests have been transferred from IEC 60092-354 to align it with IEC 60092-353;
c) requirements for oil and drilling-fluid resistance (former Annexes F and G) have been transferred to IEC 60092-360;

d) requirements for cold bending and shocks have been improved;

e) the document reflects the changes of material types that have been introduced during the development of IEC 60092-353 and IEC 60092-360.

The text of this standard is based on the following documents:

FDIS	Report on voting
18A/374/FDIS	18A/378/RVD

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

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

The 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 publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

The contents of the corrigendum of November 2018 have been included in this copy.

ELECTRICAL INSTALLATIONS IN SHIPS –

Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications

1 Scope

This part of IEC 60092 provides the general constructional requirements and test methods for use in the manufacture of electric power, control and instrumentation cables with copper conductors intended for fixed electrical systems at voltages up to and including 18/30(36) kV on board ships and offshore (mobile and fixed) units.

The reference to fixed systems includes those that are subjected to vibration (due to the movement of the ship or installation) or movement (due to motion of the ship or installation) and not to those that are intended for frequent flexing. Cables suitable for frequent or continual flexing use are detailed in other IEC standards, for example IEC 60227 and IEC 60245, and their uses are restricted to those situations which do not directly involve exposure to a marine environment, for example, portable tools and domestic appliances.

The following types of cables are not included:

– optical fibre;
– sub-sea and umbilical cables;
– data and communication cables;
– coaxial cables.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 60092-353, *Electrical installations in ships – Part 353: Power cables for rated voltages 1 kV and 3 kV*

IEC 60092-360:2014, *Electrical installations in ships – Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation, telecommunication and data cables*

IEC 60228, *Conductors of insulated cables*

IEC 60230, *Impulse tests on cables and their accessories*

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*