

Australian Standard™

Electrical installations in ships

**Part 376: Cables for control and
instrumentation circuits 150/250 V
(300 V)**

STANDARDS
Australia



This Australian Standard was prepared by Committee EL-003, Electric Wires and Cables. It was approved on behalf of the Council of Standards Australia on 9 November 2005.
This Standard was published on 5 December 2005.

The following are represented on Committee EL-003:

Australasian Railway Association
Australian Electrical and Electronic Manufacturers Association
Australian Industry Group
Canterbury Manufacturers Association New Zealand
Department of Defence (Australia)
Department of Primary Industries, Mine Safety (NSW)
Electrical Contractors Association of New Zealand
Electrical Regulatory Authorities Council
Energy Networks Association
Engineers Australia
Ministry of Economic Development (New Zealand)

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Web Shop at www.standards.org.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards™ and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to the Chief Executive, Standards Australia, GPO Box 476, Sydney, NSW 2001.

This Standard was issued in draft form for comment as DR 05375.

Australian Standard™

Electrical installations in ships

**Part 376: Cables for control and
instrumentation circuits 150/250 V
(300 V)**

First published as AS 60092.376—2005.

COPYRIGHT

© Standards Australia

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 7020 7

PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EL-003, Electric Wires and Cables. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian, rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify the constructional and test requirements for shipboard and offshore control and instrumentation cables with a voltage rating of 150/250 V (300 V).

This Standard is identical with, and has been reproduced from IEC 60092-376, Ed. 2 (2003), *Electrical installations in ships—Part 376: Cables for control and instrumentation circuits 150/250 V (300 V)*.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
- (b) In the source text 'IEC 60092' should read 'AS 60092'.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

The term 'informative' is used to define the application of the annex to which it applies. An informative annex is only for information and guidance.

CONTENTS

	<i>Page</i>
1 Scope and object	1
2 Normative references	1
3 Definitions	2
4 Rated voltage	3
5 Types of insulating compounds	4
6 Types of sheathing compounds	4
7 Markings	4
7.1 Indication of origin and voltage rating	4
7.2 Continuity	4
7.3 Durability	4
7.4 Legibility	4
7.5 Core identification	4
7.5.1 Multicore cables	4
7.5.2 Single and multiunit cables	6
7.6 Unit identification	6
8 General description	6
9 Conductors	7
10 Insulation system	7
10.1 Material	7
10.2 Electrical and non-electrical characteristics of the insulation system	7
10.3 Application to the conductor	7
10.4 Thickness of insulation	7
11 Cabling	8
11.1 Core assembly (multicore cables)	8
11.2 Forming pair, triple or quad units	8
11.3 Unit assembly (multiunit cables)	8
11.4 Fillers	9
11.5 Number of cores, pairs, triples or quads	9
12 Electrostatic screen	9
12.1 Individually taped screened pair, triple or quad constructions	9
12.2 Individually braided screened pair, triple or quad constructions	9
12.3 Collectively screened constructions	10
12.3.1 Laminated electrostatic screening	10
12.3.2 Braided electrostatic screen	10
13 Inner coverings and binders	11
13.1 General	11
13.2 Thickness of inner covering	11
14 Sheath(s)	11
14.1 Thickness of sheath(s)	11
14.2 Colour of sheath	12
15 Metal braid armour	13
15.1 Braid wire diameter	13
15.2 Coverage density	13

15.3	Application of the braid armour	13
16	Particular tests	13
16.1	Additional compatibility test.....	13
16.2	Durability	13
17	Tests on completed cables.....	14
17.1	Routine tests.....	14
17.2	Special tests	14
17.3	Type tests, non-electrical.....	14
17.4	Type tests, electrical.....	15
Annex A (informative)	Core identification.....	16
Annex B (informative)	Number of cores and pair, triple or quad units.....	17

Currently in preview, click buy full version

STANDARDS AUSTRALIA

Australian Standard**Electrical installations in ships****Part 376: Cables for control and instrumentation circuits 150/250 V (300 V)****1 Scope and object**

This part of IEC 60092 is applicable to screened and unshielded cables for control and instrumentation circuits on ships and offshore units. The cables have extruded solid insulation with a voltage rating of 150/250V (300V) (see Clause 4) and are intended for fixed installations.

The various types of cables are given in Clause 8. The construction requirements and test methods are expected to comply with those indicated in IEC 60092-350, unless otherwise specified in this standard.

NOTE Provision is made for fire resistant (limited circuit integrity) cables to be specified, if required.

The object of this part of IEC 60092 is

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

2 Normative references

The following referenced documents are indispensable for the application 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.

References to international standards that are struck through in this clause are replaced by references to Australian, or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

IEC 60226, *Conductors of insulated cables*

~~IEC 60092-350, *Electrical installations in ships — Part 350: Shipboard power cables — General construction and test requirements*~~

AS 60092-350, *Electrical installations in ships, Part 350: Shipboard power cables—General construction and test requirements* (identical to IEC 60092-350)

~~IEC 60092-351, *Electrical installations in ships — Part 351: Insulating materials for shipboard and mobile and fixed offshore units power, telecommunication, and control data cables*~~

AS 60092.351, *Electrical installations in ships, Part 351: Insulating materials for shipboard and offshore units, power, control, instrumentation, telecommunications and data cables* (identical to IEC 60092-351)