

Australian/New Zealand Standard™

**Electrical installations—Marinas and
recreational boats**

Part 2: Recreational boats installations



AS/NZS 3004.2:2008

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-001, Boats and Boating Marinas Installations. It was approved on behalf of the Council of Standards Australia on 7 May 2008 and on behalf of the Council of Standards New Zealand on 10 October 2008. This Standard was published on 19 November 2008.

The following are represented on Committee EL-001:

Australasian Corrosion Association
Canterbury Manufacturers Association New Zealand
Electrical Regulatory Authorities Council
Electrical Safety Organisation, New Zealand
Energy Networks Association
Marine Queensland
National Marine Safety Committee

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 Standards may also be withdrawn.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 joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

AS/NZS 3004.2:2008

Australian/New Zealand Standard™

Electrical installations—Marinas and recreational boats

Part 2: Recreational boats installations

Originated as part of AS 3004—1979.
Previous edition part of AS/NZS 3004:2002.
Jointly revised and redesignated (in part) as AS/NZS 3004.2:2008.

COPYRIGHT

© Standards Australia/Standards New Zealand

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.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 8942 0

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Constituted Subcommittee EL-001-13, Boats and Boating Marinas Installations, on behalf of the Joint Standards Australia/Standards New Zealand Committee EL-001, Wiring Rules to supersede, in part, AS/NZS 3004:2002, *Electrical installations—Marinas and pleasure craft at low-voltage*.

The objective of this Standard is to provide designers, manufacturers, boat builders and regulators with safety requirements for small boats. This edition was prepared to update requirements for electrical installations of recreational boats in association with the issue of the new edition of AS/NZS 3000:2007.

This Standard differs from AS/NZS 3004:2002 in several areas including the following:

1. The Standard is now presented as two parts—Part 1 covers the electrical installations associated with marinas, and Part 2 covers the installation of electrical systems in recreational boats.
2. Part 1 updates wording and verification requirements.
3. Part 2 provides more extensive guidance for the design, installation and ongoing verification of the on-board installation.

In the preparation of this Standard special consideration was given to—

- (a) IEC 60092-507: Ed.1.0 (2000), *Electrical installations in ships, Part 507: Pleasure craft*
- (b) ISO 10133, *Small craft—Electrical systems—Extra-low-voltage d.c. installations*
- (c) ISO 13297, *Small craft—Electrical systems—Alternating current installations*
- (d) American Boat and Yacht Council (ABYC), E-11 – *a.c. and d.c. electrical systems on boats*

and acknowledgement is made of the assistance received therefrom.

This Standard may be applied through legislative requirement, from a date to be set by the relevant regulating authority. If work on an installation was commenced before publication of this edition, the relevant regulatory authority or electricity distributor may grant permission for the installation to be completed under AS/NZS 3004:2002.

It is not the intention of this Standard to limit the introduction and use of emerging technologies. Designers are reminded that it is essential that the basic tenets of electrical and marine safety be addressed before any other equipment and installation design elements are considered.

Any requirements that may be applicable in Australia only or New Zealand only are indicated in the text and by a symbol in the right margin as follows:

‘In Australia.....’

A

‘In New Zealand.....’

NZ

The word ‘shall’ introduces a requirement that is to be followed strictly in order to comply with the Standard. The word ‘should’ introduces a suggestion or recommendation only.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE.....	5
1.2 APPLICATION	6
SECTION 2 REFERENCED DOCUMENTS	7
SECTION 3 DEFINITIONS	
3.1 GENERAL.....	10
3.2 d.c. SYSTEMS OF DISTRIBUTION.....	11
3.3 a.c. SYSTEMS OF DISTRIBUTION.....	11
3.4 PROTECTION.....	11
3.5 EQUIPMENT	13
SECTION 4 GENERAL REQUIREMENTS	
4.1 RATINGS.....	15
4.2 AMBIENT AIR AND COOLING WATER TEMPERATURE.....	15
4.3 INCLINATION OF BOAT	15
4.4 VOLTAGE AND FREQUENCY VARIATIONS	16
4.5 ELECTRICAL POWER SOURCES	17
4.6 EQUIPMENT	20
4.7 EQUIPMENT CONSTRUCTION	22
4.8 PLUGS AND SOCKET-OUTLETS	24
4.9 BATTERY INSTALLATION.....	25
4.10 BATTERY CHARGERS	26
4.11 INTERNAL COMMUNICATION CIRCUITS.....	26
4.12 ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES	26
4.13 ELECTRICAL FITTINGS AND CABLES ATTACHED TO STRUCTURES OF ANOTHER METAL	27
4.14 NAVIGATION LIGHTS SUPPLY	27
4.15 LUMINAIRES.....	27
4.16 ELECTRICAL HEATING AND COOKING APPLIANCES	27
4.17 MAGNETIC COMPASSES.....	27
SECTION 5 DISTRIBUTION SYSTEMS	
5.1 d.c. DISTRIBUTION SYSTEMS	28
5.2 STANDARD a.c. DISTRIBUTION SYSTEMS.....	28
5.3 EQUIPOTENTIAL BONDING CONDUCTORS	29
5.4 BALANCE OF LOADS IN THREE-PHASE a.c. SYSTEMS.....	30
5.5 SHORE CONNECTION ARRANGEMENTS	30
5.6 SWITCHBOARD	33
SECTION 6 PROTECTION AGAINST ELECTRIC SHOCK IN a.c. SYSTEMS WITH VOLTAGE EXCEEDING 50 V	
6.1 PROTECTION AGAINST DIRECT CONTACT	35
6.2 AUTOMATIC DISCONNECTION OF SUPPLY TO FINAL SUBCIRCUITS OR EQUIPMENT	35
6.3 EARTHED NEUTRAL SYSTEMS	35
6.4 NON-NEUTRAL EARTHED SYSTEM (IT TYPE SYSTEM)	35
6.5 USE OF CLASS II EQUIPMENT	36
6.6 UNACCEPTABLE MEASURES AGAINST ELECTRIC SHOCK.....	36

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-