

Marine Information Bulletin

Recreational craft – Electrical standards and licences

Issued 12 January 2007, last reviewed
25 November 2010

Purpose

This bulletin has been raised to answer questions asked by boat owners and other persons involved with boats about the standards applying to electrical installations on recreational boats and work that must be performed by appropriately licensed electrical workers. Monitoring of recreational craft has revealed substandard electrical installations and electrical work apparently performed by unlicensed persons. Boat owners are reminded that they must engage the services of an electrical contractor for any mains voltage (230 V or 240 V) work on their boats.

Definitions

electrical contractor licence

is a licence issued by the Electrical Safety Office authorising a person to conduct a business or undertaking that includes the performance of electrical work

electrical work licence

is a licence issued by the Electrical Safety Office authorising an individual to perform electrical work

electrical mechanic licence authorises the holder to perform all electrical work

electrical fitter licence authorises the holder to perform all electrical equipment work

electrical work
is work at voltages above extra-low voltage, work on cathodic protection systems and work at extra-low voltage in hazardous locations. Electrical work includes testing and supervising electrical work

voltages
extra low voltage (ELV) means voltage of 50 Volts or less alternating current (a.c.) RMS or 120 V or less ripple-free direct current (d.c.)

low voltage (LV) means voltage greater than extra low voltage but not more than 1000 V a.c. RMS or 1500 V ripple-free d.c.

Questions

What are my responsibilities regarding the electrical installation on my boat?

Under the *Transport Operations (Marine Safety) Act 1994* owners and other persons involved with boats have a general safety obligation regarding the condition of ships, including the condition of a boat's electrical installation.

Low voltage electrical installations and electrical equipment on ships in Queensland must comply with the requirements of the *Electrical Safety Act 2002* (ESA).

The ESA provides that only licensed electricians may perform electrical work. A licensed electrician must ensure that electrical work is in accordance with **Australian/New Zealand Standard 3000** known as the **wiring rules** (AS/NZS 3000).

How can I meet my responsibilities regarding the electrical installation on ships?

Complying with the electrical standards and ensuring that electrical work on ships is performed by a licensed electrician is a way for owners and other persons involved with ship's electrical systems to meet their general safety obligations.

What standards apply to electrical installations on boats?

The electrician you employ must ensure that the low voltage installation complies with the wiring rules.

New provisions in AS/NZS 3000: 2007 apply to marinas and recreational boats – 7.8.2.4 Electrical installations in marinas and recreational boats shall comply with AS/NZS 3004. Note 2 of clause 7.8.2.4, refers to NSCV C 5B Electrical.

AS/NZS 3004: 2008 Electrical installations – Marinas and recreational boats – Part 2:

Recreational boat installations specifies requirements for the design, construction and installation of electrical systems in recreational boats that have a length of up to 50 m, and are designed for use on inland waters or at sea.

Another related standard is the **National Standard for Commercial Vessels – Part C Construction – Subsection 5B Electrical, Edition 2** (NSCV C 5B), published by the National Marine Safety Committee in 2005. This is a commercial vessel standard that is also suited to electrical installations on recreational craft. This standard provides additional requirements and variations to AS/NZS 3000 necessary to reflect the requirements of the marine industry and the particular environment on ships while satisfying the fundamental safety requirements of section 1 of AS/NZS 3000.

Will the electrical installation on an imported ship comply?

Imported ships complying with IEC/ISO standards, classification society rules or other known standards will comply with the fundamental safety requirements of section 1 of AS/NZS 3000. Compliance with section 1 of AS/NZS 3000 is mandatory and if there are issues of conflict between these other standards and AS/NZS 3000, for example, cable colour codes in low voltage installations of American built ships, if not resolved under AS/NZS 3000: 3.8 will require resolution on a case by case basis by Maritime Safety Queensland in consultation with the Electrical Safety Office before acceptance for compliance.

Any person selling an imported ship, including an import agent, must ensure that the electrical equipment on board complies with Queensland legislation. Prescribed electrical equipment includes such items as circuit breakers, switches, safety switches, refrigerators and microwave ovens. Information about the requirements for approval of electrical equipment and examples of identifying approval marks on electrical equipment is available on the Electrical Safety Office website.

What about maintenance and repairs to the electrical installation on a ship?

Maintenance and repairs to low voltage electrical installations on ships is electrical work and may only be performed by a licensed electrician.

Information

Marine safety legislation is available on the Maritime Safety Queensland website at www.msq.qld.gov.au

Copies of the *Electrical Safety Act 2002*, the *Electrical Safety Regulation 2002*, *Codes of Practice* and other publications regarding obligations for electrical safety are available as downloads at the Electrical Safety Office website at www.eso.qld.gov.au or from:

Electrical Safety Office
Department of Justice and Attorney-General,
Level 16, State Law Building, 50 Ann Street,
Brisbane QLD 4000
Tel. 1300 650 662

The National Standard for Commercial Vessels is available for free download at the National Marine Safety Committee's website at www.nmsc.gov.au.

Australian Standards are available from SAI Global Ltd. SAI Global can be contacted by phone on 13 12 42, by email at sales@sai-global.com and their website is www.saiglobal.com.

For further information about this Marine Information Bulletin, email msqmail@msq.qld.gov.au.

Other Marine Information Bulletins covering various topics relating to the safe operation of ships can be obtained from Maritime Safety Queensland's website www.msq.qld.gov.au and from the following Maritime Safety Queensland regional offices:

Airlie Beach	(07) 4946 2200
Bundaberg	(07) 4131 8500
Cairns	(07) 4052 7400
Gladstone	(07) 4973 1200
Hervey Bay	(07) 4194 9600
Mackay	(07) 4944 3700
Mooloolaba	(07) 5477 8425
Pinkenba	(07) 3860 3500
Southport	(07) 5539 7300
Townsville	(07) 4726 3400