



Setting Standards for Safer Boating

The ABYC Standards and Technical Information Reports for Small Craft are the product of a consensus of representatives of government, industry and public sectors. It is intended solely as a guide to aid manufacturers and the marine community in the design, construction, equipage and maintenance of small craft.

ABYC reviews each standard at least every five years at which time it may be reaffirmed, revised, or withdrawn. ABYC welcomes any written comments on the standards and Technical information reports.

ABYC E-2 July, 2008

Electrical Division Standard

Electrical Project Technical Committee

ABYC E-2

CATHODIC PROTECTION

ELECTRICAL PROJECT TECHNICAL COMMITTEE

William Drake, Chairman

Richard Blackman	Paul Fleury	Thomas Marhevko
Larry Budd	E. Charles Game	Vinod Mehta
Nigel Calder	Robert Green	Aaron Meyer
Robert Carlson	Mark Gropper	Paul Michalczyk
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Ben Craig	Roger Jarman	Dave Potter
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Dennis Dodge	Robert Loeser	Bruce Slaughter
Jim Eichner	Keith Lovegren	Robert Unger
Ward Eshleman	Kim MacCartney	

This list represents the membership at the time the Committee was balloted.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of ABYC or any document developed by the committee on which the member serves.

This standard was developed under procedures accredited as meeting the criteria for American National Standards. The Project Technical Committee that approved the Standard was balanced to ensure that individuals from competent and concerned interests have had an opportunity to participate.

This standard, which is the result of extended and careful consideration of available knowledge and experience on the subject, is intended to provide minimum performance requirements.

ABYC's Project Technical Committee meetings are open to the public. All contact regarding standards activity, interpretations, or meeting attendance should be directed to the ABYC Technical Department at comments@abycinc.org.

ABYC and its committees do not "approve", "certify", or "endorse" any item, construction, or proprietary device.

REQUEST FOR INTERPRETATIONS

Upon written request, the Electrical PTC will render an interpretation of any requirement of the Standard. The request for interpretation should be clear and unambiguous. Requests should be presented to the PTC in a manner in which they may be answered in a yes or no fashion.

The committee reserves the right to reconsider any interpretation when or if additional information which might affect it becomes available to the PTC. Persons aggrieved by an interpretation may appeal to the Committee for reinterpretation.

E-2 CATHODIC PROTECTION

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E-2 CATHODIC PROTECTION

Based on ABYC's assessment of the existing technology, and the problems associated with achieving the goals of the standard, ABYC recommends compliance for systems and associated equipment manufactured and/or installed after July 31, 2009.

2.1 PURPOSE

This standard is a guide for the design, installation, and use of cathodic protection systems on boats.

2.2 SCOPE

This standard applies to the use of galvanic anodes and impressed current systems installed on boats.

2.3 REFERENCED ORGANIZATIONS

ABYC - American Boat & Yacht Council, Inc., 613 Third Street, Suite 10, Annapolis, MD 21403. Phone: (410) 990-4460. Fax: (410) 990-4466. Web site: www.abycinc.org.

2.4 DEFINITIONS

For the purpose of this standard the following definitions apply:

2.4.1 Active-passive metals - Metals that exhibit two distinct corrosion potentials depending on the composition of the electrolyte, other environmental factors, and/or surface conditions of the metal itself. The austenitic (300-series) stainless steels are a typical example of active-passive metals.

2.4.2 Amphoteric - Capable of reacting chemically in an acid or a base. Certain oxides of a few metals, including aluminum, tin, lead, and zinc, are amphoteric, which renders those metals more susceptible to corrosion in alkaline electrolytes than other metals.

2.4.3 Anode (galvanic anode) – 1. An electrode of a simple electrochemical cell at which metal ions pass into the electrolyte and the metal wastes away. 2. An electrode of a galvanic cell which has a more positive corrosion potential than another electrode of the cell. 3. An electrode of a supplied-current cell which is connected to the positive terminal of a DC current source. (see Cathode)

2.4.4 Anode reaction - A type of electrochemical reaction in which metal passes into an electrolyte as ions leaving behind electrons and thus increasing the number of excess free electrons in the solid metal. (see Cathode reaction)

2.4.5 Anodic – Less Noble, having a relatively negative corrosion potential. Pertaining to an electrochemical anode reaction. (see Cathodic)

2.4.6 Anodic to - Having a more negative corrosion potential than. (see Cathodic to)

2.4.7 Anti-Fouling coating – A coating applied to the hull and other underwater structures intended to prevent bio-fouling.

2.4.8 Barrier Coating – A coating applied to the wetted metal surfaces of the hull and other underwater metal structures that isolates the substrate from water, and reduces the current required to provide cathodic protection.

2.4.9 Calcareous Coating or Deposit - A film consisting primarily of calcium carbonate and magnesium hydroxide which may be deposited on the cathodes of electrochemical cells in sea water, and reduces the current required to provide cathodic protection.

2.4.10 Cathode – 1. An electrode of a simple electrochemical cell at which excess free electrons in the metal are neutralized by an electrochemical reaction. 2. An electrode of a galvanic cell which has a more negative corrosion potential than another electrode of the cell. 3. An electrode of a supplied-current cell which is connected to the negative terminal of a DC current source. (see Anode)

2.4.11 Cathode reaction - A type of electrochemical reaction that consumes electrons and thus decreases the number of excess free electrons in the solid metal.