



ABYC H-2 July, 2008

**Hull Division Standard
Fuel and Ventilation Project Technical
Committee**

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ABYC reviews each standard at least every five years at which time it may be reaffirmed, revised, or withdrawn.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 H-2

VENTILATION OF BOATS USING GASOLINE

FUEL & VENTILATION SYSTEMS PROJECT TECHNICAL COMMITTEE

G. Medford Smith, Chairman

Miles Beam	Harry Langley	Daniel Ostrosky
Larry Bibow	Robert Loeser	Robert Porter
Stephen Carrier	Kim MacCartney	Donald Reed
Bolling Douglas	Robin MacDonald	Tony Riviezzo
Charlie Game	Chuck Mapes	Craig Scholten
Richard Gipe	Robert Newsome	Steven Walesh
Thomas Hale		

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 Fuel & Ventilation Systems 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.

H-2 VENTILATION OF BOATS USING GASOLINE

Table of Contents

2.1	PURPOSE.....	1
2.2	SCOPE.....	1
2.3	REFERENCES.....	1
2.4	DEFINITIONS – For the purposes of this standard, the following definitions apply.....	2
2.5	REQUIREMENTS IN GENERAL	3
2.6	DESIGN AND CONSTRUCTION.....	4
	TABLE I - STANDARD DUCT SIZES	7
	FIGURE 1 - MINIMUM BLOWER CAPACITY AND SYSTEM PERFORMANCE	8
	FIGURE 2 - AREA OF OPENINGS	9
	FIGURE 3 - VENTILATION OPENING SEPARATION INSIDE A COMPARTMENT	9
	FIGURE 4 - FUEL TANK FILL/VENTAND VENTILATION OPENING SEPARATION	10
H-2	APPENDIX.....	10
Ap.1	EXHAUST BLOWER SYSTEM AIR FLOW DETERMINATION	10
Ap.2	VENTILATION SYSTEM DESIGN	10
Ap.2	TABLE I - ESTIMATED EFFECT OF BLOWER SYSTEM COMPONENTS	10
	FIGURE 5 - METHOD 1 - CURRENT MEASUREMENT.....	11
	FIGURE 6 - METHOD 2 - RPM MEASUREMENT	11
	FIGURE 7 - METHOD 3 - AIR VELOCITY MEASUREMENT	12
	FIGURE 8 - TYPICAL BLOWER PERFORMANCE CURVES.....	12
	<i>Origin and Development of ABYC H-2, Ventilation of Boats Using Gasoline.....</i>	13

H-2 VENTILATION OF BOATS USING GASOLINE

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

2.1 PURPOSE

This standard is a guide for the design, construction, and installation of both powered and natural ventilation systems for engine and fuel tank compartments of boats for the purpose of expelling or diluting potentially explosive gasoline vapor from a boat's interior.

NOTES:

1. **The United States Coast Guard has promulgated mandatory requirements for ventilation in 33 CFR, Subpart K, Sections 183.601 - 183.630. Refer to the CFR for complete, current federal requirements.**
2. **Ventilation Principle - Ventilation cannot be relied upon to remove all flammable vapors emanating from the presence of liquid fuel resulting from fuel system failures or fuel spillage. See [ABYC H-24, Gasoline Fuel Systems](#). Boat ventilation cannot create a safe condition when liquid gasoline is exposed to the atmosphere because the liquid will continue to create vapors as long as liquid is present.**
3. **Gasoline engine exhaust can form an atmosphere laden with carbon monoxide gas, both inside the engine space, and outside the engine space, in the cockpit, or outside the boat where it may enter the boat through openings required for ventilation, or other means. While total control of the diffusion of gasses in the atmosphere is not possible, some requirements are intended to minimize intrusion of toxic gas into accommodation compartments.**

2.2 SCOPE

This standard applies to boats using gasoline for electrical generation, mechanical power or propulsion, including outboard powered boats.

NOTES:

1. **Ventilation guidelines for boats using diesel fuel are contained in [ABYC H-32, Ventilation of Boats Using Diesel Fuel](#).**
2. **Ventilation cannot be relied upon to remove all carbon monoxide vapors that may be produced from the operation of the vessel or its equipment. See [ABYC TH-22, Educational Information About Carbon Monoxide](#), and [ABYC TH-23 Design, Construction And Testing of Boats In Consideration of Carbon Monoxide](#), for further information.**
3. **Heat Dissipation - The ventilation system described in this standard is sufficient to provide for the requirements for ventilation of gasoline vapors from the engine space. However, the standard may not provide sufficient ventilation for heat dissipation.**

2.3 REFERENCES

2.3.1 The following publications form a part of this standard. Unless otherwise noted the latest version of referenced standards shall apply.

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

[ABYC A-4, Fire Fighting Equipment](#)

[ABYC E-10, Storage Batteries](#)

[ABYC E-11, AC & DC Electrical Systems on Boats](#)

[ABYC H-37, Jet Boats – Light Weight](#)

[ABYC T-5, Safety Signs and Labels](#)

[ABYC TH-23, Design, Construction, and Testing of Boats in Consideration of Carbon Monoxide](#)