

The American Boat & Yacht Council, Inc.

ABYC

Setting Standards for Safer Boating

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***P-1 INSTALLATION OF EXHAUST SYSTEMS FOR PROPULSION AND AUXILIARY
 ENGINES***

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P-1 INSTALLATION OF EXHAUST SYSTEMS FOR PROPULSION AND AUXILIARY

ENGINES

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 after July 31, 2003.

1.1 PURPOSE

This standard is a guide for the design, installation, and selection of materials for exhaust systems for marine engines.

NOTE: *Some jurisdictions require noise abatement compliance. Exhaust system design should comply with the noise level limits.*

1.2 SCOPE

This standard applies to the exhaust systems of all boats equipped with inboard or sterndrive engines, or permanently installed auxiliary engines, from the exhaust outlet of the engine or the turbocharger, if used, through the terminus where the exhaust gases are discharged.

EXCEPTION: *Sterndrive installations with integral exhaust systems.*

1.3 REFERENCED ORGANIZATIONS

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SAE - Society of Automotive Engineers - 400 Commonwealth Drive, Warrendale, PA 15096-0001. Phone: (724) 776-4841. Fax: (724) 776-5760. Web site: www.sae.org.

UL - Underwriters Laboratories, Inc., 12 Laboratory Drive, PO Box 13995, Research Triangle Park, NC 27709-3995. Phone: (919) 549-1400. Fax: (919) 547-6000. Web site: www.ul.com.

1.4 DEFINITIONS

For the purposes of this standard, the following definitions apply.

Accessible - Capable of being reached for inspection, removal, or maintenance without removal of permanent boat structure.

Readily accessible - Capable of being reached quickly and safely for effective use under emergency conditions without the use of tools.

Dewatered exhaust system - A wet exhaust system in which the water and exhaust gases are subsequently separated and discharged through individual outlets.

Dry exhaust - A system in which exhaust gases are not mixed with cooling water.

Wet exhaust - A system in which water is mixed with the exhaust gases to cool those exhaust gases.

Exhaust riser - A section in the exhaust system that uses an elevation to prevent water from flowing back into the engine (see [FIGURE 2](#) and [FIGURE 3](#)).

Exhaust system - A means by which exhaust gases discharged from the engine are conducted to an outboard terminus and released.

Flexible section - A non-rigid section of an exhaust system.

Maximum heeled waterline - The level of the water on the hull when the hull is inclined to

- a. an angle of 7° for powerboats, or
- b. for sailboats, the level of the sheer amidships.

Silencer - An exhaust component designed for the purpose of noise attenuation.

Waterlift exhaust - A wet exhaust system incorporating an accumulating chamber in which the cooling water collects before being expelled by exhaust gas pressure via a riser.

Water/exhaust gas separator - A device which separates the water from the mixture of cooling water and exhaust gas.

Note: *The separator may be combined with a waterlift chamber.*

1.5 GENERAL REQUIREMENTS

1.5.1 The exhaust system shall be gas-tight to the hull interior.

1.5.2 To minimize the accumulation of hazardous CO gases from gasoline exhaust, the exhaust gas terminus(i) shall be installed in one of the following locations:

1.5.2.1 in the proximity of the intersection of the hull side and transom on the side of the boat, or

1.5.2.2 in the bottom of the boat, or

1.5.2.3 in the transom positioned as far outboard of the centerline as practicable, or

1.5.2.4 above the highest occupied deck and its weather enclosure/cover.