

The American Boat & Yacht Council, Inc.

# ABYC

**Setting Standards for Safer Boating**

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***H-25 PORTABLE GASOLINE FUEL SYSTEMS***

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## H-25 PORTABLE GASOLINE FUEL SYSTEMS

*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, 2004.*

### 25.1 PURPOSE

This standard is a guide for the design, construction and stowage of portable tanks with related fuel lines and accessories comprising a portable gasoline fuel system for boats.

### 25.2 SCOPE

This standard applies to portable gasoline fuel systems for boats.

### 25.3 REFERENCED ORGANIZATIONS

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ASTM - American Society for Testing and Materials, ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. Phone: (610) 832-9585. Fax: (610) 832-9555. Web site: [www.astm.org](http://www.astm.org)

UL - Underwriters Laboratories, Inc., 12 Laboratory Drive, PO Box 13995, Research Triangle Park, NC 27709. Phone: (919) 549-1400. Web site: [www.ul.com](http://www.ul.com)

### 25.4 DEFINITIONS

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

Gasoline - Includes all gasoline based fuels. The Federal Hazardous Substance Act classifies gasoline as "extremely flammable" having a flash point at, or below, -7°C (20°F).

Portable Fuel Systems - Tanks, fuel lines and related accessories that are not intended for permanent installations, but are used as an assembly conveying fuel to an engine.

Portable Fuel Tanks - Container, including caps and fittings supplied by the manufacturer, of not more than 26.5 liters (seven gallons) rated capacity, designed to be connected to engines by flexible fuel lines with connection fittings.

### 25.5 REQUIREMENTS - IN GENERAL

25.5.1 Portable fuel tanks shall have provisions to permit handling, securing aboard and removal for refilling.

25.5.2 Portable fuel tanks, pressurized by means other than vapor pressure of the fuel, shall not be used.

25.5.3 Portable gasoline fuel tanks shall be colored red.

### 25.6 MATERIALS

25.6.1 Materials used in the construction of portable fuel tanks and components for portable fuel systems shall meet the following requirements:

25.6.2 The corrosion resistance of tank materials shall be at least equivalent to 22 gauge terneplate steel with a 12 pound coating - minimum of 0.35 oz. lead per square foot by triple spot test and coated with baked paint or equivalent coating not less than .0015 inches thickness applied to the total tank exterior.

25.6.3 Non-metallic materials are considered acceptable for corrosion resistance; however, all other requirements of this standard must be met.

25.6.4 Materials shall demonstrate resistance to the following substances with which they may be normally in contact:

- Lubricants (external and internal surfaces).
- Detergents (external surfaces).
- Reference Fuel C with 15% methanol (external and internal surfaces).

Samples of materials shall be immersed for a period of not less than 70 hours at 23°C ± 3°C (73°F ± 5°F). Materials shall have a shrinkage of not more than one percent, a weight loss of not more than 10 percent and a swelling of not more than 25 percent.

25.6.5 Non-metallic materials shall contain UV inhibitors.

25.6.6 Plastic materials, tested in accordance with UL Subject 94, dated April 28, 1985, and/or ASTM D635-81, "Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self Supporting Plastics in a Horizontal Position" shall not exceed a burning rate of one and one-half (1 1/2) inches per minute as specified for slow burning plastics.

25.6.7 Materials shall have mechanical strength to withstand usage throughout the temperature range of -18°C to 60°C (0°F - 140°F). (See [H-25.7.4](#) and [.5](#) and [H-25.8](#)).

25.6.8 Except for materials used for fuel line the minimum Vicat softening point of plastic shall be 112°C (235°F) in accordance with Rate A, ASTM D1525-76, "Test for Vicat Softening Point of Plastics," and a brittleness temperature not higher than -40°C (-40°F) in accordance with ASTM D746-79, "Test for Brittleness Temperature of Plastics and Elastomers by Impact."