SURFACE VEHICLE STANDARD

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(R) Personal Watercraft Ventilation Systems

RATIONALE

Alignment with Section 8 of ISO 13590:2022. Most changes in this document are verbiage and document layout for increased clarification. There are some minor technical changes to align with ISO standards.

1. SCOPE

This SAE Standard establishes a uniform test procedure and performance requirements for the ventilation system(s) of personal watercraft.

This SAE Standard does not apply to outboard powered personal watercraft and jet powered surfboards.

1.1 Purpose

This document specifies construction and performance for ventilation of personal watercraft engine and petrol tank compartment(s).

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 ISO Publications

Available from International Organization for Standardization, ISO Central Secretariat, 1, ch. de la Voie-Creuse, CP 56, CH-1211 Geneva 20, Switzerland. Tel: +41 22 749 01 11, www.iso.org.

ISO 8666 Small craft - Principal data

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
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3. DEFINITIONS

3.1 OPEN TO THE ATMOSPHERE

Space or compartment that at least 0.34 m^2 of open area is directly exposed to the atmosphere for each cubic meter of net compartment volume.

3.2 PERSONAL WATERCRAFT

Watercraft intended for sports and leisure purposes, of less than 4 m in hull length, which uses a propulsion engine having a water jet pump as its primary source of propulsion and is designed to be operated by a person or persons sitting, standing, or kneeling on, rather than within the confines, of a hull.

3.2.1 The measurement methodology for the length of hull is defined in ISO 8666.

3.3 NORMAL ACCUMULATION OF BILGE WATER

Water that collects in the bilge of a craft that may contain foreign material(s) (i.e., dirt, fuel, oil, effluent, etc.). The height of the normal accumulation of bilge water is below the lowest part of the engine or measured at the top of the bilge pump inlet or the bilge pump automatic float switch.

4. REQUIREMENTS FOR VENTILATION

Personal watercraft shall have a ventilation system that meets the requirements specified in 4.1 to 4.4.

4.1 Ventilation in a compartment in a personal watercraft shall be achieved by having:

a. A supply opening or duct from the atmosphere or from a ventilated compartment that is open to the atmosphere; and

b. An exhaust opening into another ventilated compartment or an exhaust duct to the atmosphere.

Each exhaust opening or exhaust duct shall originate in the lower third of the compartment.

4.2 The two openings shall be separated by locating them either at the fore and aft sides of the engine compartment or on opposite sides of the personal watercraft.

4.3 Each supply and exhaust opening or duct in a compartment shall be above the normal accumulation of bilge water.

4.4 Except as specified in 4.5, the combined area of supply openings or supply ducts, and the combined area of exhaust openings or exhaust ducts, shall have a minimum internal cross sectional area calculated as follows:

$$A = 3\,300 \ln (V / 0.14)$$

where:

A = minimum combined internal cross-sectional area of the openings or ducts, in square millimeters

V = net compartment volume equal to the total compartment volume minus the volume of permanently installed components in it, in cubic meters

4.5 The minimum internal cross-sectional area of each supply and exhaust opening or duct shall exceed 1940 mm^2.

4.6 Ventilation shall be supplied to any compartment not open to the atmosphere and containing either a petrol powered engine or fuel tank.