



UL 1517

STANDARD FOR SAFETY

Hybrid Personal Flotation Devices

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UL Standard for Safety for Hybrid Personal Flotation Devices, UL 1517

Third Edition, Dated April 20, 2007

Summary of Topics

This revision of ANSI/UL 1517 dated October 28, 2021 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated September 3, 2021.

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UL 1517

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April 20, 2007

This ANSI/UL Standard for Safety consists of the Third Edition including revisions through October 28, 2021.

The most recent designation of ANSI/UL 1517 as a Reaffirmed American National Standard (ANS) occurred on October 28, 2021. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover wearable buoyant devices having:

- a) At least one compartment that relies upon inflation by gas or other medium to provide buoyancy, and
- b) A quantity of inherently buoyant material.

1.2 The hybrid devices covered by this standard are intended for United States Coast Guard (USCG) approval under 46 CFR 160.077 as recreational use devices.

2 Units of Measurement

2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3 Undated References

3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

4 Glossary

4.1 For the purpose of this standard the following definitions apply.

4.2 **AUTOMATIC INFLATION SYSTEM** – A system that automatically inflates one or more compartments when the buoyant device is submerged in the water, and operates independently of any action by the wearer.

4.3 **BELT** – A device that wraps around the torso but does not cover the shoulders or arms in the deflated condition.

4.4 CLOSURES

a) **Primary** – A means of securing the device onto the body so that the device can be expected to function substantially in the intended manner without the use of any other means of fastening the device onto the body.

b) **Secondary** – A closure that:

- 1) If it is the only closure that is closed on the device, does not result in the device being donned as intended; and
- 2) Is not usually required to be closed in order for the device to substantially comply with the requirements in this standard.

4.5 **DESIGN PRESSURE RANGE** – The range of pressures, as specified by the manufacturer, to which a compartment may be inflated to provide the intended in-water performance.

4.6 FACE PLANE ANGLE – The angle, relative to the surface of the water, of the plane formed by the most forward part of the forehead and chin of a wearer floating in the attitude of static balance in which respiration is least likely to be impeded.

4.7 FOAM – Closed-cell foamed polymeric material.

4.8 FREEBOARD – A distance measured perpendicularly from the surface of the water to the lowest point where the wearer's respiration may be impeded. The freeboard of a test subject in the water is measured with the subject at FRC (see [4.9](#)) and in the attitude of static balance in which respiration is least likely to be impeded.

4.9 FUNCTIONAL RESIDUAL CAPACITY (FRC) – The amount of lung volume that a person has remaining at the bottom of the normal breathing cycle when at rest.

4.10 FULL INFLATION – A chamber inflated to any value of pressure within the design pressure range.

4.11 INFLATABLE COMPARTMENT – A container that is inflated by a gas or other medium through an automatic, manual, or oral system.

4.12 INHERENT BUOYANCY – That buoyancy provided by means that does not rely on an inflation system; that is, the buoyancy provided by inherently buoyant material.

4.13 INSERT – A quantity of inherently buoyant material that has been cut or formed for insertion into a device.

4.14 JACKET – A device having sleeves.

4.15 LOCK STITCH – A stitch that will not unravel when a force is applied to any of the threads forming the stitch, such as the stitch designated as Type 301 in Federal Standard No. 751a (January 25, 1965).

4.16 MANUAL INFLATION SYSTEM – A system that inflates one or more compartments when a mechanism is actuated by a deliberate manual action on the part of the wearer, such as by the pulling of a lanyard.

4.17 ORAL INFLATION SYSTEM – A system through which a wearer exhales air to inflate a compartment.

4.18 PERFORMANCE TYPES – The intended performance of a hybrid device, when fully inflated, is classed as one of the following:

a) Type II – Turns most unconscious wearers from a face-down position in the water to a position in which the wearer's respiration is not impeded.

b) Type III – Supports a conscious wearer in an upright position in the water, and has no tendency to turn a slightly back of vertical wearer (see [Figure 16.1](#)) face-down in the water.

4.19 REFERENCE VEST – An AK-1 PFD constructed in accordance with 46 CFR 160.047 except as follows:

a) Each front insert has:

1) At least 8.25 ounces (234 g) of kapok; and