AS 4758.1:2022

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Lifejackets

Part 1: General requirements

AS 4758.1:2022

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The following are represented on Committee CS-060:

Australian Chamber of Commerce and Industry
Australian Sailing
Boating Industry Association
Engineers Australia
Marine and Safety Tasmania
Maritime Safety Queensland
Maritime Safety Victoria
NSW Police Force
Paddle Australia
QLD Water Police
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Tasmania Maritime Network
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Preface

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee CS-060, Lifejackets and Personal Safety Equipment for Small Craft, to supersede AS 4758.1:2015, *Personal flotation devices, Part 1: General requirements.*

AS 4758.1:2015 will also remain current for 12 months after the date of publication of this document and after this time it will be superseded by AS 4758.1:2022. Regulatory authorities that reference this document in regulation may apply these requirements at a different time. Users of this document should consult with these authorities to confirm their requirements.

The objective of this document is to specify requirements for lifejackets [also known as "personal flotation devices" (PFDs)] suitable for use by persons engaged in activities in or near water in a range of prevailing conditions, whether in relation to their work or their leisure. This document is intended for manufacturers, regulatory authorities and wearers.

The major changes in this edition are as follows:

(a) Marking requirements.

(b) Annual self checks and three yearly approved service.

(c) In-water testing with standardized clothing.

This document is Part 1 of the following series:

AS 4758.1, *Lifejackets, Part 1, General requirements* (this document)

AS 4758.2, *Lifejackets, Part 2, Materials and components — Requirements and test methods*

AS 4758.3, *Lifejackets, Part 3: Test methods*

The terms "normative" and "informative" are used in Standards to define the application of the appendices to which they apply. A "normative" appendix is an integral part of a Standard, whereas an "informative" appendix is only for information and guidance.

Contents

Introduction

This document was prepared to give guidance on the design and application of lifejackets for persons engaged in activities, whether in relation to their work or their leisure, in, on or near water. Lifejackets manufactured, selected, maintained and serviced to this document should give a reasonable assurance of safety to a person who is immersed in water.

It should be noted that the term "lifejacket" does not import a representation that it will save the wearer's life under all circumstances. A lifejacket will only assist a wearer in certain circumstances.

This document allows for the buoyancy of a lifejacket to be provided by a wide variety of materials or designs, some of which may require preparation before entering the water (e.g. inflation of chambers by gas from a cylinder). However, lifejackets can be divided into the following two main classes:

(a) Those which assist the wearer to remain face up in the water regardless of their personal physical condition.

(b) Those which require the wearer to make movements to position the face out of the water.

Within these two classes there are a number of levels of support, types of buoyancy, activation methods for inflatable devices, and auxiliary items (such as location aids), all of which will affect the wearer's probability of survival. Within the different types of buoyancy are those inflatable lifejackets either provide full buoyancy without any wearer intervention other than arming (i.e. lifejackets inflated by a fully automatic method) or require the wearer to initiate the inflation. Hybrid lifejackets always provide some buoyancy but rely on the same methods as inflatable lifejackets to achieve full buoyancy. With inherently buoyant lifejackets, the wearer only needs to wear a correctly fitted lifejacket to achieve the performance of its class.

Automatically operating lifejackets are suited to activities where persons are likely to enter the water unexpectedly. Manually inflated lifejackets are only suitable for use if the person believes there will be sufficient time, and they will have the ability, to activate the device. In every circumstance, the person should select the lifejacket that is suited to the activity. A lifejacket's conformity to this Standard does not imply that it is suitable for all circumstances.

Inspection, maintenance and servicing are important factors in the choice and use of lifejackets.

This document is a minimum specification for manufacturers, purchasers, and wearers of such safety equipment to ensure it provides an effective standard of performance. Manufacturers need to encourage the wearing of the equipment by making it comfortable and functional to wear for the duration of the activity. The primary function of a lifejacket is to provide the wearer with a reasonable level of safety in, on or near the water.

Lifejackets provide various degrees of buoyancy, which are defined in this document. They need to be correctly fitted in order to provide positive support in the water and to allow a person to float, swim or actively assist themselves or others.

The use of wetsuits, clothing, or equipment may alter the performance of the lifejacket. Similarly, lifejackets that conform to this Standard may vary in performance in extremes of temperatures or in rough water and waves. Lifejackets may also be compromised by other conditions, such as UV exposure, chemicals, welding or other industrial activities, and may require additional protection to meet the specific requirements of use. If the lifejacket is intended to be used in such conditions, the wearer needs to be ensured that it will not be adversely affected.

Performance tests included are believed to assess relevant aspects of performance in real-life use; however, they do not accurately simulate all conditions. For example, the fact that a device passes the self-righting tests in swimming attire, as described herein, does not guarantee that it will self-right an unconscious person wearing waterproof clothing; neither can it be expected to completely protect the airway of an unconscious person in rough water. Waterproof clothing can trap air and further impede the self-righting action of a lifejacket.

Wearers, owners and employers need to ensure that these factors are taken into account when selecting a lifejacket.

This document also allows a lifejacket to be an integral part of a safety harness designed to conform to ISO 12401, or an integral part of a garment with other uses, in which case the complete assembly as used is required to conform to this document.

The AS 4758 series outlines the best practice for the design and manufacture of lifejackets. The useful life of the lifejacket will depend on its use, storage, care, maintenance and service.

It is essential that owners, wearers and employers choose those lifejackets that meet the correct performance level of this document for the circumstances in which they will be used.

This Standard is based on but not equivalent to Parts 2 to 6 of ISO 12402, *Personal flotation devices*. Content from these Standards have been reproduced with the permission of ISO. Copyright remains with ISO.

Australian Standard®

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Part 1: General requirements

1 Scope

This document specifies the requirements for lifejackets, also known as personal flotation devices (PFDs), with buoyancy classifications of level 275, level 150, level 100, level 50, level 50S, level 25 and restricted use lifejackets suitable for use by adults and children greater than 5 kg mass.

Requirements for lifejackets on international commercial seagoing ships are regulated separately by the International Maritime Organization (IMO) under the International Convention for the Safety of Life at Sea (SOLAS) and are not covered by this document.

NOTE Guidance on the selection and use of lifejackets is provided in Appendix A.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 4758.2, *Lifejackets, Part 2: Materials and components — Requirements and test methods*

AS 4758.3, *Lifejackets, Part 3: Test methods*

AS/NZS 1906.1, *Retroreflective materials and devices for road traffic control purposes, Part 1: Retroreflective sheeting*

ISO 105, *Textiles — Tests for colour fastness*

ISO 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 105-A03, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining*

ISO 105-B02, *Textiles —Tests for colour fastness, Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

ISO 105-E02, *Textiles — Tests for colour fastness — Part E02: Colour fastness to sea water*

ISO 105-X12, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 12401, *Small craft — Deck safety harness and safety line — Safety requirements and test methods*

International Commission on Illumination (CIE). Publication 15: Calorimetry

International Maritime Organization (IMO). International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended

International Maritime Organization. IMO Resolution A-658 (16), Use and fitting of retro-reflective materials on life-saving appliances

Scandinavian Colour Institute. National Colour System (NCS)