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Personal flotation devices - Part 10: Selection and application of personal flotation devices and other relevant devices (ISO/DIS 12402-10:2017)

Persönliche Auftriebsmittel - Teil 10: Auswahl und Anwendung von persönlichen Auftriebsmitteln und anderen entsprechenden Geräten (ISO/DIS 12402-10:2017)

Équipements individuels de flottabilité - Partie 10: Sélection et application des équipements individuels de flottabilité et d'autres équipements pertinents (ISO/DIS 12402-10:2017)

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13.340.70	Rešilni jopiči, vzgonska pomagala in plavajoči pripomočki	Lifejackets, buoyancy aids and floating devices
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Part 10:

Selection and application of personal flotation devices and other relevant devices

Équipements individuels de flottabilité —

Partie 10: Sélection et application des équipements individuels de flottabilité et d'autres équipements pertinents

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This document (prEN 12402-10:2016) has been prepared by ISO/TC 188/SC 1, *Personal safety equipment* in collaboration with CEN/TC 162, *Protective clothing including hand and arm protection and lifejackets* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement). The secretariat of ISO/TC 188/SC 1 is held by DIN.

This document is currently submitted to CEN Enquiry.

This document will supersede EN ISO 12402-10:2006-12 and EN ISO 12402-10:2006/A1:2010-11.

The main changes with respect to the previous edition are listed below:

- a) updated to be consistent with parts 2 to 9 of ISO/DIS 12402:2016.

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This second edition cancels and replaces the first edition (ISO 12402-2:2006, ISO 12402-2:2006/A.1:2010, ISO/DIS 12402-2:2015), of which has been technically revised. The main changes with respect to the previous edition are listed below:

- updated to be consistent with parts 2 to 9 of ISO/DIS 12402:2016.

ISO 12402 consists of the following parts, under the general title *Personal flotation devices*:

- *Part 2: Lifejackets, performance level 275 — Safety requirements;*
- *Part 3: Lifejackets, performance level 150 — Safety requirements;*
- *Part 4: Lifejackets, performance level 100 — Safety requirements;*
- *Part 5: Buoyancy aids (level 50) — Safety requirements;*
- *Part 6: Special application lifejackets and buoyancy aids — Safety requirements and additional test methods;*
- *Part 7: Materials and components — Safety requirements and test methods;*
- *Part 8: Accessories - Safety requirements and test methods;*
- *Part 9: Test methods;*
- *Part 10: Selection and application of personal flotation devices and other relevant devices.*

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Introduction

This part of ISO 12402 has been prepared to give guidance on the design and application of personal flotation devices (hereafter referred to as PFDs) and immersion suits according to ISO 15027 for persons engaged in activities, either commercial work or leisure, in or near water. PFDs manufactured, selected, and maintained to this set of standards are designed to give a reasonable level of safety against drowning.

Based on a risk assessment a PFD under ISO 12402 may be used in combination with another PPE according to the PPE Directive 89/686 EU.

ISO 12402 and ISO 15027 do not cover life saving appliances (LSA) on commercial vessels under the International Maritime Organisation (IMO) and the International Convention for the Safety of Life at Sea (SOLAS) regulations and aircrafts under IATA rules. Those devices are equipment on board, used in case of emergency and not suitable for permanent use.

Rescue devices, throw able devices and flotation cushions are also not covered by ISO 12402.

Devices under ISO 12402 Parts 2 to 10 and ISO 15027 Parts 1 to 3 are regarded as Personal Protective Equipment. Those Standards are harmonized Standards under the European Directive for Personal Protective Equipment EWG 89/686, so far European law is applicable.

Performance criteria

PFDs can be divided into the following two basic performances:

- **Lifejackets** providing face up in-water support to the user regardless of physical conditions.
- **Buoyancy Aids** to require swimming and other movements to keep the user with airways free out of the water.

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A main criterion to establish those basic performances is the supply with sufficient buoyancy.

Bouyancy

ISO 12402 encourages the manufacturer for innovative design to provide buoyancy by a wide variety of materials, design and performance levels.

Buoyancy can be provided by means requiring preparation before entering the water (e.g. inflation of chambers by gas) or inherent materials.

Inflatable PFDs

Provide full buoyancy without further intervention other than arming, operated in fully automatic mode or require initiating the inflation — manual mode.

Hybrid PFDs

Provide some minimum inherent buoyancy but rely on additionally inflatable buoyancy such as inflatable PFDs to achieve full buoyancy.

Inherent PFDs

Provide permanent buoyancy, the user needs to done the PFD only to achieve full performance.

Lif jackets and Buoyancy Aids cover a number of performance levels, which require a suitable type of buoyancy, activation methods for inflatable devices, and auxiliary items (such as location aids).

Based on a risk evaluation, all of which will affect the user's probability of survival.

Automatically operating PFDs are required in activities where persons are likely to enter the water unexpectedly and to be worn facing the risk of drowning.

Manually operated PFDs are only acceptable under circumstances sufficient time and training of the user is granted to activate the PFD or help is close at hand.

In any case, the user shall ensure that the operation mode of the PFD is suited to the specific application.

The required inspection and maintenance is further factor to be regarded for the choice and application of specific PFDs.

The conformity of a PFD to ISO 12402 does not imply that its performance fits to all possible situations.

This guide will help and encourage manufacturers, purchasers, and users to choose the safety equipment providing an effective level of performance in practical use.

It will encourage designers to create a comfortable and attractive device for continuous wear on or near water, rather than to be stored in a locker for emergency use.

PFDs will also fit to the different applications and use by supporting a reasonable safety.

PFDs under ISO 12402 offer the following alternatives to manufacturer, designer and user:

- to provide different levels of buoyancy (levels 100, 150, or 275) that generally float the user with greater free board, to ensure a safe floating position or to use Buoyancy Aids (levels 50 to 100) for activities requiring good mobility as in leisure activities such as canoeing or surfing
- to provide different methods of buoyancy (inherently buoyant material, hybrid or inflatable devices) to accommodate the needs of reliability and durability, in-water performance, and continuous wear;
- to provide automatically operating (inherently buoyant or automatically inflated) PFDs to float users without any intervention except an initially donning (regular inspection and rearming of inflatable types requested) covering the risk of unexpected immersion
- to provide a controlled inflation by manual and oral operation for special application only, based on a risk assessment and special training of the user
- to assist in detection, rescue and recovery by additional active (lights, radio bacon etc.) or passive (retro reflective materials) location aids.