

## IMPACT VEST QUESTION & ANSWER

The following Q&A document has been produced by the iQFOiL Class Technical Committee in response to questions received during the 2024 iQFOiL World Championships 2024 recently held in Lanzarote. This document is issued as guidance only and should not be used by athlete for compliance matters, the responsibility with regards to rule compliance rests solely with an athlete.

For the purpose of clarity, the Q&A issued around impact vests which was published during that event, is copied below and forms question 1.

### Question 1

Athletes and Coaches within the iQFOiL class have asked whether the Spinlock "Aero Pro" life jacket meets Class Rule C.3.2(a)iii. Since receiving this question the TC has also been asked about a number of other products. The following is the answer for all products.

### Answer 1

According to Article C.3.2(a)(iii) of the iQFOiL Class Rules, an Impact Vest is mandatory. After January 1st of 2024, the impact vest shall comply with the minimum standard ISO 12402- 5, or USCG Type III, or AS 4758 Level 50 or equivalent, and shall be used at all times. The class rule also defines an impact vest. "An impact vest is a garment worn on the torso which is specifically designed to protect the wearer around the torso from impact".

In the opinion of the Technical Committee, the Spinlock vest is first and foremost a PFD. It can attain some characteristics of impact protection to the spine area only with the addition of an optional pad inserted into a pocket that also can act as a hydration pouch.

The Technical Committee acknowledges that compliant products are available in the market that align with Article C.3.2(a)(iii) of the iQFOiL Class Rules. These products are designed to be impact vests and have added the floatation foam to reach the floatation standard. If the manufacturer does not specifically design the product as an impact vest, it is not allowed.

### Question 2

How is an athlete supposed to identify whether a product meets one of the floatation/buoyancy standards listed in Class Rule C.3.2(a)(iii)?

### Answer 2

ISO 12402-5, USCG Type III and AS 4758 Level 50 all require a product to be marked with the standard against which the product has been assessed.

Since June 2023, the USCG Type III has incorporated ISO 12402-5 into its approval process – therefore a USCG Type III approved PFD is expected to be labelled in accordance with ISO 12402-5.

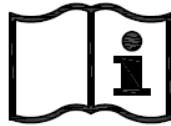
AS 4758 closely follows ISO 12402-5 such that a PFD built to AS 4758 is expected to be labelled in accordance with ISO 12402-5.

Text as extracted from ISO 12402-5 is shown below;

## 6.2 Information on the buoyancy aid

Information on the buoyancy aid shall include the following items:

- a) identification of the manufacturer — at least the name of the manufacturer or representative and their mailing address;
- b) the class of the PFD according to [4.1](#) and the performance level according to [4.2](#);
- c) the statement that it is not a PFD until fully inflated (only on an inflatable PFD);
- d) the size range of the buoyancy aid, e.g. range of chest girth and user's body mass;
- e) the minimum buoyancy provided and amount of inflatable buoyancy, if a hybrid type;
- f) storage, care, cleaning and maintenance instructions in brief;
- g) simple donning and adjustment instructions;
- h) a warning that states: "Check before each use according to manufacturer's instructions" or the pictogram according to [Figure 1](#);



**Figure 1 — Pictogram (ISO 7000-1641)**

- i) simple instructions for use;
- j) if inflated by gas, the correct filled gas mass of the cylinder (in g). This information shall appear near the place where the cylinder is actually fitted;
- k) if inflated by gas, a warning that gas cylinders are dangerous goods, and that they shall be kept away from children and not misused;

- l) the manufacturer's model, designation, serial number, and quarter (or month) and year of manufacture;
- NOTE Months are given as Arabic numerals (1 to 12), and quarters as Roman numerals (I to IV) in order, starting from 1st January.
- m) the number of this part of ISO, i.e. ISO 12402-5:2020;
  - n) pictograms or words indicating other risks catered for or not provided for;
  - o) the text "Do not use as a cushion";
  - p) the text "Train yourself in the use of the device";
  - q) the text "Teach the child to float in this buoyancy aid", if intended for children;
  - r) the text "For children less than 6 years of age use automatically operating devices only", if intended for children;
  - s) the range of its specific application;
  - t) the expected servicing interval assuming average use, and a space for servicing dates to be marked, including additional items (gas bottles, bobbins, retroreflective tapes, etc.) and their replacement;
  - u) compatibility with the intended safety harnesses, clothing or additional equipment as relevant, specific equipment to be listed;
  - v) the text "Full performance may not be achieved using waterproof clothing or in other circumstances. Refer to the leaflet";
  - w) the text "WARNING: Limited protection against drowning."

The label bearing this information shall be permanently affixed to the buoyancy aid, shall be resistant to salt water and stand at least 10 washes carried out in accordance with the manufacturer's instructions. The label shall not shrink more than 10 % after washing.

Special 'lace up' pictograms showing the manufacturer's exact recommendations for webbing (narrow fabric) lacing through the buckle and fastening combination of the 'cow-tail' and the text "Practice and training are required with this device before use" shall be placed on the buoyancy aid and in the accompanying information.

PERSONAL FLOTATION DEVICE		ISO 12402-2 to ISO 12402-6	
Application	Performance level		
Offshore, extreme conditions, special protective clothing, heavy equipment	lifejackets	275	
Offshore, heavy weather clothing		150	
Sheltered waters, light clothing		100	
Swimmers only, sheltered waters, help at hand, limited protection against drowning, not a lifejacket	buoyancy aids	50	
Special application device	all performance levels		
Manufactured by: .....			
<b>WARNING:</b> FLOTATION DEVICES ONLY REDUCE THE RISK OF DROWNING THEY DO NOT GUARANTEE RESCUE			

SPECIAL FEATURES			Integrated emergency position-indicating light and spray hood					
SPECIAL APPLICATION			Use in extreme climate conditions ( -50 °C)					
OPERATION MODE			DESIGN					
Auto-matically operating	Manually operated	Oral inflation	Multi-chamber system	Amount of inflatable buoyancy (N)	Amount of inherent buoyancy (N)	Integrated harness	Use with harness	
							yes	no
✓					70			✓
Size	Chest (cm)	Body mass (kg)	Buoyancy for specified body mass (N)					
			Actual value			Nominal value		
Medium		70	70			50		

**Figure 3 — Example of a PFD label with additional information for its selection**

## 8.4 Marking information

The section 'Application', rows (2) to (6) of [Figure 2](#) may be replaced by the relevant marking information shown in [Figure 4](#). The minimum dimensions of this marking information shall be 50 mm × 50 mm. The remaining contents of rows (1) and (7) to (9) of [Figure 2](#) shall be presented in accordance with [8.3](#).

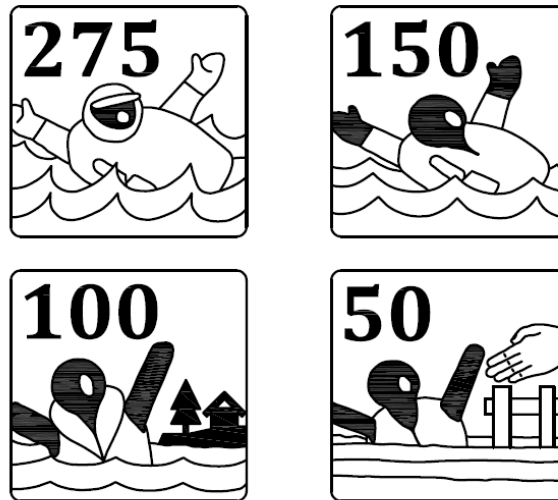


Figure 4 — Marking information

As the labelling requirements of ISO 12402-5 are broadly copied across the three identified standards in Class Rule C.3.2(a)(iii), it is expected that products purchased by an athlete should be checked to ensure that they look to comply with the above requirements.

Note – all of the PFD/Impact Vests presented at the 2024 World Championships were marked as compliant with ISO 12402-5, there were no products presented that were in accordance with USCG Type III or AS 4758.

### Question 3

Why is it important that I wear the right sized PFD/impact vest and why is this checked?

### Answer 3

ISO standard 12402-5, clause 5.3.4 is copied below for reference.

#### 5.3.4 Total buoyancy provided

5.3.4.1 For the purpose of assessment in accordance with this part of ISO 12402, items of different size are to be accompanied by stated minimum and maximum user's mass, which shall conform to the marked size ranges.

The primary means of indicating the device's size as regards fit shall be one which is appropriate and meaningful to the prospective user, for instance the statement of mass and girth ranges.

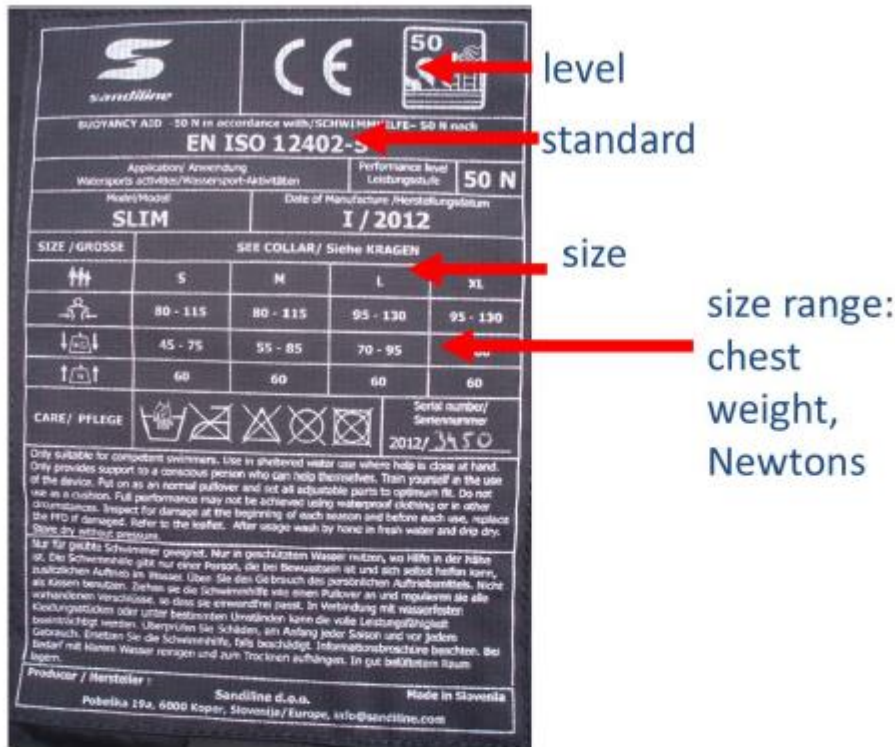
5.3.4.2 When tested in accordance with ISO 12402-9:2006, 5.5.9, the minimum buoyancy provided by the different levels shall be as specified in Table 2.

Table 2 — Minimum buoyancy

Parameter	User				
	Child	Adult			
User's mass, $m$ (kg)	$25 < m \leq 40$	$40 < m \leq 50$	$50 < m \leq 60$	$60 < m \leq 70$	$m > 70$
Minimum buoyancy (N)	35	40	40	45	50

- a. A manufacturer, in order to comply with ISO 12402-5, shall mark an item stating the minimum and maximum user's mass, of which the primary means indicating would be around a statement relating to the users mass and girth ranges.
- b. A manufacturer, in order to comply with ISO 12402-5, shall test according to the buoyancy ranges as prescribed in Table 2 of clause 5.3.4.2.

Supporting the above, the following extract is taken from World Sailing International Measurers Manual.



PFDs should be labelled according to their standard: the user's body type/weight must comply with the specified limits, otherwise the PFD will not work according to the standard.

The equipment inspector should not accept a PFD if it is damaged in any way which can affect its performance or which would allow it to come off the wearer, or move, thus reducing its effectiveness. In any case, an equipment inspector should not improvise trying to "test" a PFD. There are specific tests (ISO 12402-9) that are beyond the scope of an event inspection, therefore the inspector should limit himself to checking the label/markings and visual inspection for modifications by the owner.

ISO 12402-5 requires a manufacturer to produce products which are identifiable as suitable for a certain weight range. World Sailing International Measurers manual provides clarity that it should be checked that the correct sized PFD/impact vest is worn by the competitor.