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AMENDMENT 1
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Personal flotation devices —

Part 8: Accessories — Safety requirements and test methods

AMENDMENT 1

Équipements individuels de flottabilité —

Partie 8: Accessoires — Exigences de sécurité et méthodes d'essai

AMENDEMENT 1

Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to ISO 12402-8:2006 was prepared by Technical Committee ISO/TC 188, *Small craft*, Subcommittee SC 1, *Personal safety equipment,* in collaboration with Technical Committee CEN/TC 162, *Protective clothing including hand and arm protection and lifejackets*.

Personal flotation devices —

Part 8:
Accessories — Safety requirements and test methods

AMENDMENT 1

Page 1, Normative references

Delete "[1)]" from the end of references ISO 12402-2 to ISO 12402-9 and delete footnote 1).

Add the following new reference:

"IMO Resolution A.689 (17), *Recommendation on Testing of Life-Saving Appliances*, as amended through Resolution MSC 81(70)"

Page 2, Terms and definitions

Replace entry 3.10 as follows:

3.10
emergency light
position indicating light
device which emits light so as to increase the chances of a wearer being located in the event of an emergency

NOTE This increases the likelihood of rescue at night or in low-visibility conditions.

Page 3, 5.1.1

Replace the complete subclause with the following:

"When accessories complying with this part of ISO 12402 are attached to, or included with, PFDs conforming to ISO 12402-1 to ISO 12402-6, both the accessory and the PFD shall remain in conformity with the relevant standards when tested according to ISO 12402-9."

Page 4, 5.1.2 and 5.1.3

Delete these subclauses and renumber 5.1.4 as 5.1.2.

Page 4, 5.4

Replace the complete subclause with the following:

"A buddy line shall be made from synthetic cord or webbing and shall be at least 1 500 mm in length. The line shall have, attached securely to the free end, a releasable means for attachment to another person or object, such as a loop, a snap hook, or a wooden or plastic toggle. The other end of the line shall be attached securely to the retention system of the PFD. The buddy line shall be readily accessible to at least one of the wearer's hands, as confirmed during device testing. The attachment means and line shall be stowed in such a way that they do not create a hazard or affect the normal operation of the PFD. If hardware is provided as an attachment means, it shall not have sharp edges. The assembly shall float. Hardware shall either not be broken or, if broken, not expose sharp edges after pull testing. Weathering testing is not required when the buddy line is normally stowed inside a pocket.

A buddy line of the length provided by the manufacturer shall be tested, as indicated for a PFD, in accordance with ISO 12402-9:2006, 5.5.1.5, and withstand a (750 ± 50) N load for at least (1 ± 0,1) min without any damage. The force required to accomplish separation of the buddy line shall be greater than 750 N and less than 1 500 N. The separation of the buddy line from the PFD shall not adversely affect the integrity of the PFD.

PFDs with buddy lines conforming to this part of ISO 12402 shall be marked with “ISO 12402-8”, suffixed with the words “buddy line”. Also, a marking shall be included on the buddy line or the outside of a pocket in which a buddy line is stowed, in letters at least 12 mm high with the words ‘NOT FOR LIFTING’.”

Page 4, footnote 2)

Delete the footnote.

Page 6, 5.6.1

Replace the third sentence of the first paragraph with the following:

“For requirements and testing of abrasion resistance, see ISO 12402-7:2006, Table 14 and Annex B.”

Page 6, footnote 3)

Delete the footnote.

Page 7

Add the following new subclause before Annex A:

5.8 Emergency lights

5.8.1 Requirements

5.8.1.1 General

The emergency light shall be robust in construction, when tested in accordance with 5.8.2.1.

The light source shall be capable of being affixed to a PFD so that it is above the surface of the water when in normal use.

The device shall not affect the performance of the lifejacket nor cause injury to the wearer, when tested in accordance with the human subject performance tests specified in ISO 12402-9:2006, 5.6.

5.8.1.2 Luminous intensity

The light emitted by the device shall be white in colour and provide a minimum luminous intensity of 0,75 cd in all directions of the upper hemisphere for a period of 8 h.

Flashing lights with a flash duration of over 300 ms, excluding all incandescence time, can be considered a fixed steady light for the measurement of the luminous intensity.

Incandescence time is the time interval between switching ON and reaching the luminous intensity of 0,75 cd. When the light switches off, all the time spent below 0,75 cd shall be disregarded.

5.8.1.3 Temperature and immersion

The complete device shall be able to withstand a temperature range of −30 °C to +65 °C, tested in accordance with 5.8.2.2. After completing the temperature cycling, the test samples shall show no signs of damage such as shrinking, swelling, dissolution or change of mechanical qualities.

Each light shall start functioning within 2 min of operation and shall reach the minimum luminous intensity of 0,75 cd within 5 min. In the case of a light powered by a seawater cell, immersed in fresh water, a luminous intensity of 0,75 cd shall be attained within 10 min. If the light is a flashing light, the rate of flashing for the full 8 h operative period shall be not less than 50 flashes and not more than 70 flashes per minute.

The light emitted by the device shall meet the requirement of 5.8.1.2 and be maintained for a period of 8 h.

5.8.1.4 Water ingress

The device shall be designed to prevent water ingress, tested in accordance with 5.8.2.3.

5.8.2 Test methods

5.8.2.1 Drop test

One test sample shall be dropped from a height of (2 ± 0,05) m onto a rigidly mounted steel plate or smooth concrete surface, after which it shall be operated. When operated, it shall emit light to the requirements of 5.8.1.2.

5.8.2.2 Temperature cycling

Twelve test samples shall be subjected to ten cycles of exposure in air as follows.

a) Expose for 8 h at (–30 ± 2) °C, to be completed in one day. The samples shall then be removed and exposed to ordinary room conditions until the next day.

b) Expose for 8 h at (+65 ± 2) °C, to be completed in one day. The samples shall then be removed and exposed to ordinary room conditions until the next day.

c) Repeat a) and b) a further nine times.

5.8.2.2.1 Operational life test

Divide the twelve samples equally between the three temperature values of (–1 ± 2) °C, ambient and (+30 ± 2) °C. Connect surveillance wires to each of the lamp leads (not the battery terminals) to allow the voltages to be monitored.

NOTE If the samples are of a one-piece construction, it may be necessary to connect the surveillance wires during the production of the samples.

Connect the surveillance wires to a calibrated voltage recording device. Start the recorder and switch on the units to be tested, with each unit immersed in the relevant water bath.

The voltage of each sample under test shall be monitored for between 5 min and 8 h. On completion of the 8 h test, all voltage traces from the recorders shall be examined, and the lamp and dome assembly from the unit displaying the lowest voltage during the test shall be used to complete the luminous intensity test in 5.8.2.2.2.

5.8.2.2.2 Luminous intensity test

The lamp and dome assembly from the lowest performing unit in the operational life test shall be mounted onto a calibrated photometer and supplied with a calibrated voltage identical to that recorded in 5.8.2.2.1. The minimum luminous intensity over the upper hemisphere shall be measured and recorded. If the point of minimum luminous intensity is known for a given design, the luminous intensity need only be measured at that location.

Flashing lights shall be tested as follows.

For a flashing light which remains on at an intensity of greater than 0,75 cd for over 0,3 s during each duty cycle, the luminous intensity test shall be carried out as described above.

For a flashing light which does not remain on at an intensity of greater than 0,75 cd for at least 0,3 s, the luminous intensity test shall be carried out as described above and then the Blondel–Rey formula shall be applied as described in IMO Resolution A.689 (17) as amended through Resolution MSC 81(70). This shall be applied to determine the effective luminous intensity.

5.8.2.3 Water ingress test

One light shall be immersed in fresh water at a depth of (300 ± 10) mm for a period of 24 h. On completion, the device shall meet the requirements of 5.8.1.2.

5.8.3 Marking

Part of each light shall be marked clearly and indelibly with the following information:

a) manufacturer's name or trademark;

b) a mention stating that the light conforms to ISO 12402-8:2006, 5.8;

c) date of manufacture and date of expiry;

d) batch or lot code;

e) instructions on how to activate the light (preferably as pictograms).

If the power source is hazardous, such as lithium, the following text shall be included: "Lithium battery. Do not incinerate, do not recharge, do not tamper with".

Where appropriate, instructions may be given regarding the stowage, use and disposal of the power source.

This information shall be given at least in the official language(s) of the country of destination.

Where the product is too small to affix all the markings, these shall be provided on the packaging and in the information supplied by the manufacturer.

Page 10, Bibliography

Replace "[4)]" with "[1)]" at the end of Reference [2], and renumber footnote 4) as footnote 1).