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**Small craft — Inflatable liferafts —  
Part 3:  
Materials**

*Petits navires — Radeaux de survie gonflables —*

*Partie 3: Matériaux*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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.

ISO 9650-3 was prepared by Technical Committee ISO/TC 188, *Small craft*.

This second edition cancels and replaces the first edition (ISO 9650-3:2005), which has been technically revised.

ISO 9650 consists of the following parts, under the general title *Small craft — Inflatable liferafts*:

— *Part 1: Type I*

— *Part 2: Type II*

— *Part 3: Materials*

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# Small craft — Inflatable liferafts —

## Part 3: Materials

### 1 Scope

This part of ISO 9650 specifies requirements and test methods for the materials used in the construction of the inflatable liferafts specified in ISO 9650-1 and ISO 9650-2.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1419, *Rubber- or plastics-coated fabrics — Accelerated-ageing tests*

ISO 1421, *Rubber- or plastics-coated fabrics — Determination of tensile strength and elongation at break*

ISO 2231, *Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing*

ISO 2411, *Rubber- or plastics-coated fabrics — Determination of coating adhesion*

ISO 3011, *Rubber- or plastics-coated fabrics — Determination of resistance to ozone cracking under static conditions*

ISO 4674-1, *Rubber- or plastics-coated fabrics — Determination of tear resistance — Part 1: Constant rate of tear methods*

ISO 4675:1990, *Rubber- or plastics-coated fabrics — Low-temperature bend test*

ISO 5978, *Rubber- or plastics-coated fabrics — Determination of blocking resistance*

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

### 3 Fabrics

#### 3.1 Materials

The materials used for the buoyancy chambers, floor, canopy support and canopy shall be single- or double-faced coated fabrics.

The base fabric shall be inherently rot-proof.

NOTE Cotton base fabric will not be considered as rot-proof.

3.2 Tests

When tested by the methods described in Clause 6, the materials shall comply with the requirements specified in Table 1.

Table 1 — Performance requirements

Property	Performance requirements		Subclause number
	Buoyancy chambers/floor	Canopy	
Tensile strength	Not less than 1500 N/50 mm warp 1300 N/50 mm weft	Not less than 650 N/50 mm warp 650 N/50 mm weft	6.2
Tear strength, constant rate of traverse method A	Not less than 80 N for both warp and weft	Not less than 30 N for both warp and weft	6.3
Coating adhesion, ply separation and surface receptiveness test	Not less than 15 N/10 mm	Not less than 5 N/10 mm only for glued and welded assemblies	6.4
Low-temperature bend test	1) buoyancy chamber material <sup>a</sup> Cracking when tested at – 50 °C is permissible only if an internal insulation and protection system is used. No cracking or other visible deterioration when tested at – 30 °C 2) floor material No cracking or other visible deterioration when tested at – 15 °C ± 1 °C	No cracking or other visible deterioration when tested at – 15 °C	6.5
Ozone resistance	No visible cracking	N/A	6.6
Porosity	No bubbles visible within 5 min of the start of the test <sup>a</sup>	N/A	6.7
Ageing test	No cracking, blistering or stickiness	N/A	6.8
Hydrolysis test	After 14 d at 70 °C, 95 % relative humidity, following ISO 1419, method C: 1) coating adhesion test: not less than 10 N/10 mm 2) folding test: no cracks	N/A	6.9
Resistance to blocking test	Rating between one and two	N/A	6.10
Oil resistance test	2 h at 20 °C No tackiness Test with ASTM no.1 oil	N/A	6.11
Buoyancy chamber seam strength test	1) On new samples: tensile strength not less than 90 % of the value specified <sup>b</sup> in warp and weft 2) After ageing in accordance with 6.8: tensile strength not less than 70 % of the value obtained on new samples in warp and weft	N/A	6.12

<sup>a</sup> For liferafts using an internal bladder construction, these tests (low-temperature bend test and porosity test) are applicable only to the inner bladder material. The outer support material shall meet a – 15°C low-temperature bend test.

<sup>b</sup> For liferafts using internal bladders, the specified value is 1 000 N/50 mm.