INTERNATIONAL STANDARD

ISO 5912

Second edition
1993-12-15

Camping tents

Tentes de camping

Reference number
ISO 5912:1993(E)

Contents

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland
Printed in Switzerland

Annexes

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.

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.

International Standard ISO 5912 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Sub-Committee SC 2, *Camping tents*.

This second edition cancels and replaces the first edition (ISO 5912:1985) and ISO 5913:1985, which have been technically revised.

Annexes A and B of this International Standard are for information only.

Camping tents

1 Scope

This International Standard applies to types and classes of camping tents (called "tents" throughout the text) defined in 3.1.

It does not apply to

— caravan awnings (see ISO 8937);

— tents for special applications, such as tents for alpine mountaineering, expedition tents, toilet tents or tents for groups.

For the nomenclature of tents see ISO 7152.

This International Standard specifies the requirements on safety, performance and fitness for use.

Requirements for fabrics are specified in ISO 10966.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 105-A02:1993, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour.*

ISO 105-B04:1988, *Textiles — Tests for colour fastness — Part B04: Colour fastness to weathering: Xenon arc.*

ISO 139:1973, *Textiles — Standard atmospheres for conditioning and testing.*

ISO 527-1:1993, *Plastics — Determination of tensile properties — Part 1: General principles.*

ISO 554:1976, *Standard atmospheres for conditioning and/or testing — Specifications.*

ISO 2062:1993, *Textiles — Yarns from packages — Determination of single-end breaking force and elongation at break.*

ISO 2409:1992, *Paints and varnishes — Cross-cut test.*

ISO 2768-1:1989, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications.*

ISO 4892:1981, *Plastics — Methods of exposure to laboratory light sources.*

ISO 4995:1993, *Hot-rolled steel sheet of structural quality.*

ISO 5081:1977, *Textiles — Woven fabrics — Determination of breaking strength and elongation (Strip method).*

ISO 5082:1982, *Textiles — Woven fabrics — Determination of breaking strength — Grab method.*

ISO 7152:1984, *Camping tents — Nomenclature.*

ISO 7253:1984, *Paints and varnishes — Determination of resistance to neutral salt spray.*

ISO 8570:1991, *Plastics — Film and sheeting - Determination of cold-crack temperature.*

ISO 8937:1991, *Caravan awnings — Functional requirements and test methods.*

ISO 10966:—[1], *Textiles — Fabrics for awnings and camping tents — Specification.*

1) To be published.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 Types and classes

3.1.1 sleeping tent (type S): Tents which are in principle used for sleeping purposes. They are divided into two classes:

— class st (standard-weight tents) having a mass of > 2 kg weight plus 1 kg per person;

— class l (lightweight tents) having a mass of ⩽ 2 kg weight plus 1 kg per person.

3.1.2 touring tent (type T): Tent for residential purposes suitable for repeated pitching and pulling down.

3.1.3 residential tent (type R): Tent for residential purposes suitable for long-term pitching, i.e. spring until autumn without snow load.

3.2 pitching area: Total area necessary to pitch the tent on the ground (including guy ropes).

3.3 base area: Area, limited by the outer tent walls, which contact the ground, except the mud wall.

3.4 usable area

3.4.1 living area of tents (types T and R): The part of the base area of a tent designated for living.

3.4.2 sleeping area: The part of the base area of a tent designated for sleeping.

3.5 capacity: The number of adults for which the tent is designed.

3.6 living room: The part of the tent which is designated for cooking, standing, sitting (table and chairs) as well as for storage, with the exception of the wardrobe.

3.7 wardrobe: The part of the tent which is designated for depositing luggage and clothing.

4 Requirements

Camping tents shall be made from fabrics meeting the requirements specified in ISO 10966.

4.1 Living room of tents of types T and R

4.1.1 Living room of tents of type T

The living room shall allow the appropriate number of dummies for the capacity of the tent to be arranged as though sitting round a table with a diameter of 70 cm or a rectangular table of dimensions 60 cm by 80 cm.

4.1.2 Living room of tents of type R

The base area of the living room shall be at least 2 m^2 per person up to a capacity of 4 persons, increased by 1 m^2 per additional person. Above at least 70 % of this area, the height of the living room shall be at least 180 cm. The base areas of the different parts of the living room shall be continuous.

4.2 Sleeping area

4.2.1 The sleeping area for each person shall have the minimum rectangular dimensions given in table 1.

Table 1 — Rectangular dimensions of the sleeping area

Dimensions in centimetres

Dimension		Tent of type S		Tent of type T	Tent of type R
		Class st	Class l		
Length	min.	200	200	200	205
Width	min.	70	60	65	70
measured at a height of		15			22

4.2.2 For tents of type R, the clear height above 30 % of the sleeping area shall be at least 170 cm.

For tents of type S, it shall be possible for at least one person to sit in tents designed for one to two persons, and for at least two persons to sit simultaneously in tents designed for three to four persons. This requirement is fulfilled if, when tested in accordance with 7.1, the dummies (according to figure 1) do not touch the roof of the tent when in a sitting position.

4.2.3 The sleeping area shall have a ground-sheet as specified in 4.7.1.

4.3 Luggage space for tents of type S

According to the capacity of the tent, a space shall be added per person in which one dummy (according to figure 2) can be placed in any position.

The luggage space shall be accessible from the sleeping room.

4.4 Wardrobe for tents of type T

The volume of the wardrobe shall be at least 80 litres per person, with a minimum height of 1 m at one point at least.

4.5 Material connections

Material connections (e.g. by bonding or sewing) shall have at least the breaking strength of the fabrics connected when tested according to 7.7, and in the case of different material that of the material having the lower breaking strength. The minimum requirements for plastics windows are given in table 2.

4.6 Tent and pole bags

4.6.1 At least one bag shall be supplied with the tent.

For tents of type S, class I, the bag shall be large enough for the tent without its frame assembly to be stuffed into it without folding.

The characteristics of the material used for the bag shall be at least in accordance with the specifications of fabrics for outer surfaces according to ISO 10966, except for waterproofness.

4.6.2 A bag which is permeable to air shall be supplied with the frame assembly and pegs.

4.7 Ground-sheet

4.7.1 Form and height

The ground-sheet shall be in the form of a box and shall have a turned-up outer edge height of at least 10 cm.

4.7.2 Fastening

At least one ground fastening shall be provided for each corner. For entrance walls of inner tents having a width of more than 200 cm, an additional fastening shall be provided which can also be fixed at the lower edge of the cloth or directly above the ground.

The fastening shall be designed to enable pitching and dismantling of the tent at temperatures between – 5 °C and + 40 °C.

4.7.3 Protective measures

Points on the ground-sheet which are strained by frame parts shall be protected by means of suitable accessories, e.g. reinforced ground-sheet or base plates.

Table 2 — Minimum requirements for plastics windows

1	Tear resistance	15 N
2	Elongation at break (PVC)	250 %
3	Breaking strength at a low temperature of	– 20 °C
4	Resistance to discolouration under the effect of moisture	Fastness grade 4 to 5
5	Fastness to light	After testing according to 7.10, the residual values of Nos. 1 and 2 shall not be less than 85 % of the original value of these test samples

4.8 Mud walls of tents of type R

The mud wall shall be cut to a width of at least 25 cm and shall overlap at corners and seam points. It shall be possible to peg the mud walls on the outside to the ground by means of wire pegs at intervals of 65 cm. The necessary eyelets shall be reinforced.

4.9 Window-cover

Windows which are not rainproof shall be provided with a window-cover which overlaps the window on all sides by at least 10 cm. On the periphery, the cover shall be provided with attachment points (e.g. toggles) at maximum intervals of 35 cm. These requirements do not apply when zip fasteners are used.

4.10 Zip fasteners

4.10.1 Material

The zip fasteners (including the tape) shall be made from synthetic material.

4.10.2 Lateral strength

When tested according to 7.3.1, the lateral strength shall be at least as specified in table 3.

Table 3 — Minimum lateral strength of zip fasteners, in newtons

Tents of types T and R		Tents of type S		
Outer tent	Window-cover and inner tent	Class st		Class I
		outside	inside	
550	300	350	250	250

The values indicated in table 3 are averages of at least five measurements. The single values shall not remain under 75 % of the values indicated in this table.

4.10.3 Behaviour under conditions of continuous reciprocating movement

Testing shall be conducted according to 7.3.2.

The determined lateral strength of the zip fastener after a load of continuous reciprocating movement shall be at least 90 % of the value specified in table 3.

4.11 Attachment devices

For resistance against the corrosion of metal eyelets, see 4.12.1.

4.12 Frame

4.12.1 All metal parts shall be such that there is no change at the end of the test according to 7.4, except a minor discolouration. In the case of enamelled or coated frame components, there shall be no infiltration of the varnish under more than 0,5 mm according to ISO 7253.

If aluminium frame assemblies are used for hoop-shaped tent designs, they shall be subjected to anodic oxidation with a deposited thickness of at least 15 µm, or shall provide a level of protection which is at least equivalent to this.

4.12.2 In the case of tents of types T and R, the frame parts shall be marked or supplied with marking material.

If two frame components are fitted together, the lower component shall not become detached when subjected to twice its own weight in a vertical position.

The tubular connection of the frame components to be fitted together shall have a minimum length of three times the outside diameter.

4.12.3 In the case of tents of type S, class I, frame components shall have a maximum length of 50 cm.

4.13 Ventilation

By a suitable choice of material and design of tent, humidity shall be removed from the tent interior and condensation avoided as far as possible.

This is achieved, for example, by manufacturing sufficiently large areas of the inner tent of tents with a fly-sheet, and the walls and roof of tents without a fly-sheet, from a material permeable to water vapour. In the case of tents with a fly-sheet, sufficient space shall be provided between the inner and outer tent with effective ventilation.

Tents with coated roofs shall be provided with ventilation openings of at least 200 cm^2 per person situated directly below the roof area, on two different walls, if possible opposite.

4.14 Insect protection

All openings, doors, etc. in inner tents shall be protected against insects. Permanent openings shall be secured by mosquito nets with a maximum hole size of 0,1 cm × 0,1 cm. Doors and openings for inner tents shall be insectproof when they are closed.

4.15 Resistance to penetration by rain

The resistance of the tent shall be such that no water penetrates the tent interior except a light mist during

the first 5 min, when the rain test according to 7.6 is carried out.

The outer roof of the tent shall not come into contact with the inner roof.

In the case of tents of type S, one entrance at least shall be protected against rain. This requirement is fulfilled if, with the entrance open, the roof extends at least 20 cm beyond the base of the inner tent.

4.16 Design of the inner tent

The inner tent of all types shall have one pocket per person for small belongings attached to wall.

5 Safety requirements

5.1 Frame of tents of types T and R

Tubes of the main frame assembly, not exceeding an unsupported length l_1 of 200 cm, shall withstand the forces specified in table 4.

Table 4 — Main frame loads

Type of tube		Force, F N
Main frame assembly	tents of type R	100
	tents of type T	81
Fly-sheet extension poles		64

Tubes of the main frame assembly with an unsupported length $l_1 > 200$ cm shall withstand a force F of 100 N multiplied by 0,5 l_1.

In both cases the residual permanent deflection l_2 shall not exceed 1 mm (see figures 6 and 7).

The centre-to-centre distance between the ridge poles and the eaves poles and between the rafter poles shall not exceed 200 cm. The pins of the fly-sheet extension poles shall be in a vertical position.

Testing shall be conducted according to 7.12.

5.2 Storm fastening

5.2.1 The tent shall be provided with attachment devices to secure it to the ground.

At least each corner of the roof area of tents of types T and R shall be provided with an attachment device to secure the tent to the ground (storm guy); either directly connected with the pole through the opening in the roof or in the form of a loop or similar.

Tents of type R shall also be provided with attachments for stormguys at a suitable height (window parapet) approximately 60 cm apart, excluding the door.

5.2.2 Ground tensioners for tents of types T and R shall consist of elastic material or shall be adjustable. The breaking strength shall be at least

— 500 N for tents of type R;

— 350 N for tents of types T and S.

Tape loops shall be made from synthetic material.

5.2.3 The complete attachment system including eyelets, lower and upper attachments and tensioning device shall be able to resist a minimum tensile force of

— 500 N for tents of type R;

— 350 N for tents of types T and S.

5.2.4 In the case of tents of type R, the distance between the different ground tensioners shall not exceed 65 cm at any point, except in the entrance area where it should be about 80 cm. The ends of the zip fasteners near the ground line shall be provided with fixtures to relieve the zip fasteners.

5.3 Zip fasteners

The slider shall not be the same colour as the teeth and ribbon of the zip. If the colours are the same, a conspicuous handle of a different colour shall be attached to the slider.

In order to open the doors from inside and outside independently, the zip fasteners of doors shall have double tagged sliders and it shall be possible to open at least one zip fastener at the entrance from the bottom to the top.

5.4 Advice to occupiers

A permanent legible notice, at least in English and French, giving simple fire prevention advice shall be attached inside the tent in a position where it can be easily and readily seen.

NOTE 1 It is recommended that the notice should also be written in the language of the country where the tent will be sold.

The minimum dimensions of the notice shall be 7 cm × 15 cm for each language.

The letters for the heading "Fire precautions" shall be at least twice as high as the letters for the remainder of the text.

The heading shall be in red letters, the remainder of the text shall be black on a white background.

FIRE PRECAUTIONS

Camp safely. Follow these common sense rules:

Do not place cooking, heating or lighting appliances near the walls, roof or curtains

Always observe the safety instructions for these appliances

Never allow children to play near lighted appliances

Keep exits clear

Make sure you know the fire precaution arrangements on the site

6 Accessories

6.1 Tents of types T and R

The accessories shall consist of the following parts:

a) one peg of length about 30 cm for each corner and each storm guy;

b) one peg or one wire peg of a minimum length of 22 cm for the remaining attachment points, with a bending strength corresponding at least to a steel nail of 0,4 cm diameter or to another equivalent fastening material, one wire peg of 18 cm for each attachment of the inner tent(s);

c) one guy for each attachment point, which permits lateral fixing at a distance of at least 100 cm (measured at the ground line);

d) one bag for pegs.

6.2 Tents of type S

For each attachment point, pegs and/or wire pegs of a minimum length of 18 cm shall be part of the basic equipment.

The pegs, wire pegs and loose small parts shall be packed in a bag.

7 Testing

If no special tests are given in 7.1 to 7.11, the requirements of clause 4 shall be verified in an appropriate way, for example by measuring or weighing.

7.1 Clear height and seats for tents of type S

For testing the clear height and the number of seats, a dummy according to figure 1 shall be used.

7.2 Space for luggage

For testing luggage space, a dummy according to figure 2 shall be used.

7.3 Zip fasteners

7.3.1 Testing the lateral strength of the zip fastener (see figure 3)

The speed at which the stretching clamps withdraw from each other is 150 mm/min. The determination of the maximum lateral strength is carried out at standard atmosphere in accordance with ISO 139. Before that, the zip fastener specimens must be approximated to the measuring atmosphere.

7.3.2 Testing of behaviour under conditions of continuous reciprocating movement

Testing of behaviour under conditions of continuous reciprocating movement shall be carried out by a device according to figure 4.

Apply a force F_1 in the lateral direction and a force F_2 in the longitudinal direction, according to table 5, to the tapes on both sides half-way between the two extreme ends of the slide.

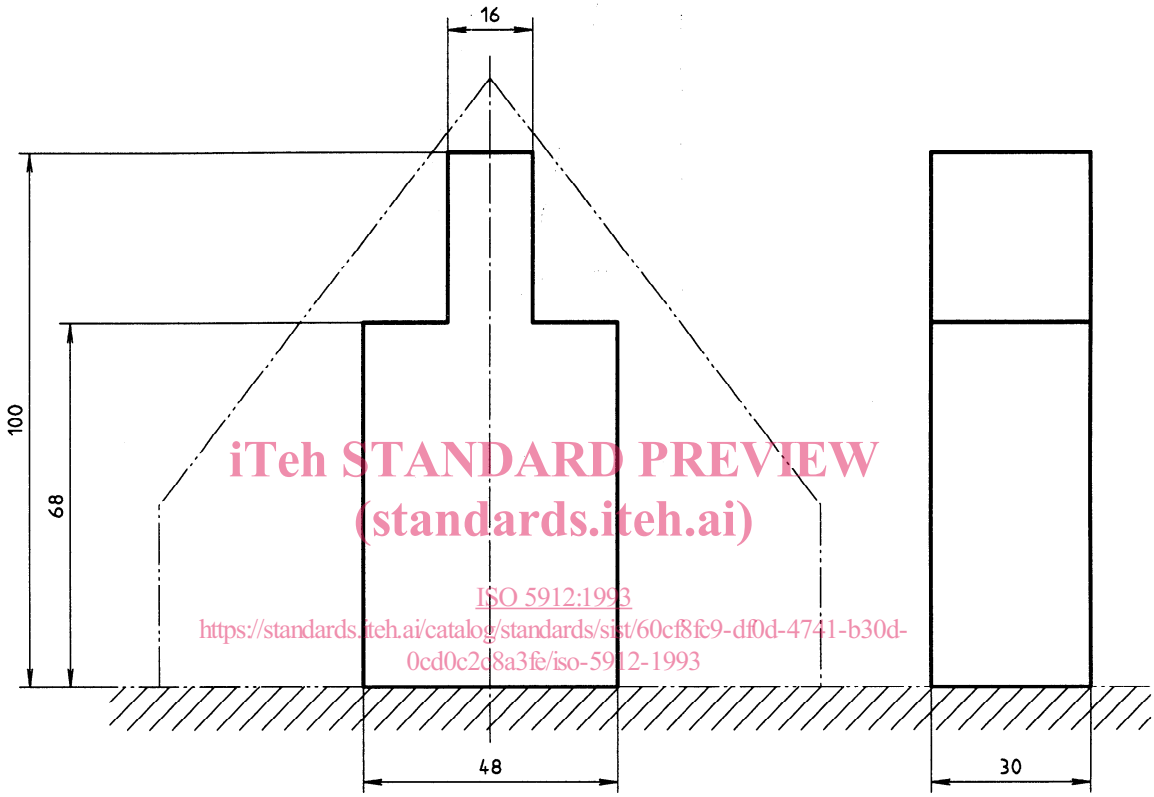
Set and apply the test loads with the slider on the zip fastener, at the bottom end, and do not change them during the test.

Ensure that the opening angle of the slider tab is approximately 30° at the upper point of reversal and approximately 60° at the lower point of reversal. When opening, F_1 may be zero.

Open and close the zip fastener 200 times by moving the slider over a length of traverse of 7,5 cm, a to and fro movement being designated as a stroke, at a test velocity of 30 strokes/min.

Subsequent to this pre-loading, the maximum lateral strength of the zip fastener has to be determined according to 7.3.1.

Dimensions in centimetres



NOTE — For general tolerances see ISO 2768-1:1989 (tolerance class v).

Figure 1 — Dummy for clear height and seats