

# INTERNATIONAL STANDARD

**ISO**  
**8937**

First edition  
1991-11-01

---

---

## **Caravan awnings — Functional requirements and test methods**

*Auvents de caravane — Exigences de fonctionnement et méthodes  
d'essai*



Reference number  
ISO 8937:1991(E)

## 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 8937 was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Sub-Committee SC 2, *Camping tents*.

STANDARDSISO.COM : Click to view the full PDF of ISO 8937:1991

© ISO 1991

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

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

Printed in Switzerland

# Caravan awnings — Functional requirements and test methods

## 1 Scope

This International Standard specifies the functional requirements for the suitability for use of awnings for caravans and motor caravans. "Caravans" in this International Standard always means caravans and motor caravans.

It applies to the different types of awnings described in clause 5.

In addition to the requirements of this International Standard, the requirements of ISO 8936 are to be observed.

Fabric requirements are not considered in this International Standard.

## 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 5912:1985, *Camping tents — Requirements and test methods — Type N (normal tents)*.

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

ISO 7418:1989, *Leisure accommodation vehicles — Vocabulary*.

ISO 8936:1988, *Caravan awnings — Safety requirements*.

## 3 Definitions

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

**3.1 caravan awning:** Tent attached to a leisure accommodation vehicle to extend its living area. (See ISO 7418.)

**3.2 base area:** Area limited by the outside walls of the awning and the caravan wall.

**3.3 perimeter:** Horizontal distance between the caravan's side wall and the base of the front edges of the awning, measured from the ground vertically to the foremost point of the awning channel or other fixing systems, back to the rearmost point and vertically down to the ground when the caravan floor is raised by 5 cm by means of the corner steadies. (See figure 1.)

**3.4 awning depth at ground level:** Horizontal distance between the base of the caravan's side wall and the base of the front edges of the awning.

**3.5 awning depth at roof level:** Horizontal distance between the caravan wall and the awning front wall at roof level.

**3.6 overall depth:** Horizontal distance between the caravan side wall and the foremost part of the awning, measured at right angles.

## 4 Additional terms used

Additional terms used in this International Standard are illustrated in figure 2.

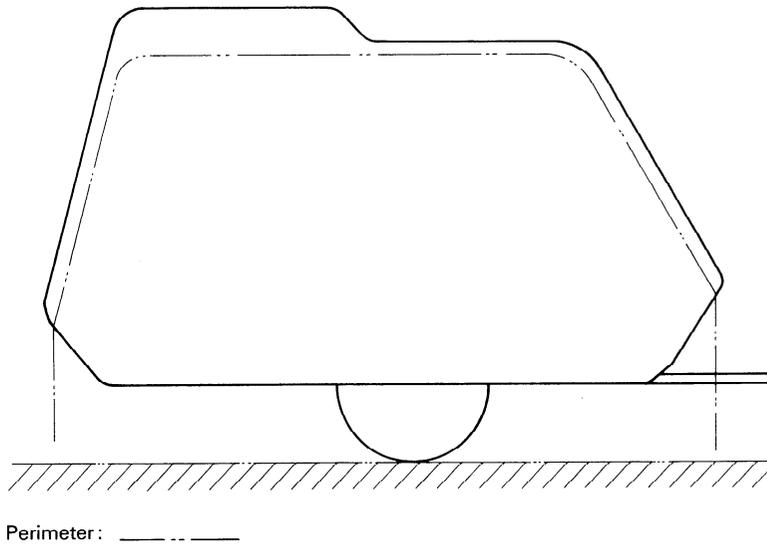
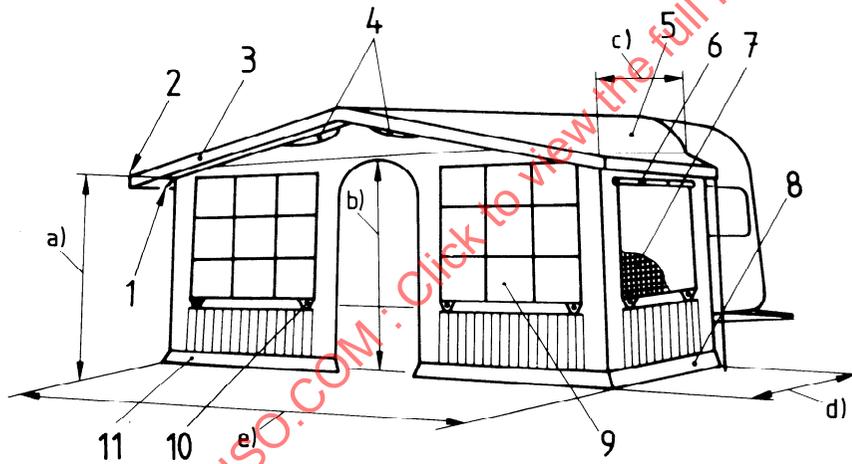


Figure 1 — Perimeter



- |                                 |                               |
|---------------------------------|-------------------------------|
| a) Standing height              | 4: Ventilators (see ISO 7152) |
| b) Entrance height              | 5: Roof                       |
| c) Awning depth at roof level   | 6: Window cover               |
| d) Awning depth at ground level | 7: Window ventilation         |
| e) Awning width                 | 8: Mud wall                   |
| 1 : Roof guying point           | 9: Plastic window             |
| 2 : Pins                        | 10: Wall guying point         |
| 3 : Canopy                      | 11: Ground anchorage          |

Figure 2 — Illustration of additional terms used

## 5 Types

Type SN = snow awning (capable of bearing a heavy snow load).

Type R = residential awning (suitable for all seasons, capable of bearing a light snow load).

Type T = touring awning (suitable for touring under temperate weather conditions).

## 6 Requirements

### 6.1 Awning dimensions

#### 6.1.1 Awning depth

Type R awnings shall have a minimum roof depth of 200 cm, type T of 180 cm, and type SN of 140 cm.

#### 6.1.2 Awning width

Type SN awnings shall have a minimum width of 150 cm.

#### 6.1.3 Entrance dimensions

At least one entrance shall have a minimum height of 170 cm at its highest point and a minimum width of 50 cm.

#### 6.1.4 Headroom

The headroom for types R and T shall be a minimum of 180 cm, over 80 % of the roof surface.

#### 6.1.5 Awning perimeter size

On each awning the range of perimeters within which it fits shall be indicated.

### 6.2 Zip fasteners

The minimum transverse tear strength of the zip fasteners determined in accordance with 7.1 shall be

700 N for zip fasteners in all load-bearing outside walls (e.g. wind load-bearing walls);

300 N for zip fasteners of windows etc.

The tape of the zip fasteners shall be compatible with the awning fabric.

### 6.3 Awning frame

6.3.1 The whole assembly shall be fully adjustable.

If two frame components are fitted into each other, there shall be a minimum of 6 cm of overlap and the lower component shall not become detached when subjected to twice its own weight in the vertical position.

The upper part of a joint shall overlap the lower part, to avoid the ingress of water.

6.3.2 Frame parts that are not interchangeable shall be permanently marked or accompanied by marking material.

6.3.3 When tested according to 7.2.1 the awnings shall withstand the following loads without damage.

Type T: 150 N/m<sup>2</sup>

Type R: 300 N/m<sup>2</sup>

Type SN: 1 500 N/m<sup>2</sup>

6.3.4 Rigid frame-angled joints, when tested in accordance with 7.2.2, shall be free from damage or permanent deflection.

### 6.4 Guying and anchorage

6.4.1 Anchorage systems shall have a minimum breaking strength of 350 N, when tested in accordance with 7.3.

6.4.2 There shall be at least one guying point at each front corner of the roof.

For type R awnings, fastenings for storm guys shall be provided at a suitable height (traditional window parapet) and shall be a maximum of 60 cm apart, excluding the door.

The anchorage system, including eyelet, upper and lower fastening and tensioning device (without ground tensioners), shall resist a minimum tensile force of 500 N.

NOTE 1 A higher strength has been chosen for the anchorage system than for the ground anchorage, in order to provide resistance to ageing, as these parts cannot be replaced.

6.4.3 The distance between the anchorage points shall not exceed 75 cm (type T), 65 cm (type R), 50 cm (type SN).

At the base of the zip fasteners, a method shall be provided to relieve the lateral tension on the zip.

## 6.5 Metallic parts

All metallic parts shall be corrosion resistant. This requirement is fulfilled if, when tested in accordance with 7.2.3, the filter-paper does not discolour.

## 6.6 Other parts

All the other parts shall be compatible with each other.

## 6.7 Awning attachment to the caravan

If the awning is provided with a cord it shall have a diameter of 0,7 cm  $^{+0,05}_0$  cm.

When tested in accordance with 7.4, it shall not be possible to pull the cord out of the channel.

## 6.8 Environmental ventilation

Ventilation shall allow the air to circulate. Awnings with a coated roof shall be provided with a ventilator directly below the roof line.

## 6.9 Draught exclusion

### 6.9.1 Mud wall

The mud walls shall have a minimum width of 30 cm and shall overlap where they join. It shall be possible to peg the mud walls to the ground by means of pegs which are a maximum of 65 cm apart.

The mud walls shall have pegging points and these shall be resistant to tearing. This condition is fulfilled if the pegging points withstand the test in 7.5 without damage.

### 6.9.2 Rear covers

The awning shall be supplied with a rear cover that provides wind protection for the awning.

## 6.10 Window cover

The window cover shall overlap the window on all sides by at least 10 cm. The cover shall be provided with fastening points (e.g. toggles) around its edges which are a maximum of 35 cm apart vertically and of 90 cm apart horizontally.

NOTE 2 In the case of zip fasteners, the overlap may be smaller.

## 6.11 Rain resistance

When testing in accordance with 7.6, no water shall penetrate the awning interior after a permissible light sprinkling during the first 120 s.

## 6.12 Accessories

The accessories shall consist of the following.

### a) Pegs

For each angle and each storm guy fastening point, one peg with a length of about 30 cm.

### b) Wire pegs

For the remaining fastening points of the awning, one wire peg each with a length of about 22 cm.

### c) Guys

For each guying point there must be one guy of a length sufficient to allow it to be fixed at least 100 cm from the base of the awning.

The accessories shall also include a bag for pegs.

## 7 Testing

If no specific test is indicated in this clause, the requirements according to clause 6 are tested in a suitable way, for example by measurement.

### 7.1 Zip fasteners

Test according to ISO 5912.

### 7.2 Awning frame

#### 7.2.1 Test of the load capacity (see figure 3)

The whole roof area of the awning is covered by profiled soft-foam layers with a thickness of 6 cm and a density of approximately 35 kg/m<sup>3</sup>.

The layers shall be fixed and the smooth side of the layers shall touch the awning roof.

A quantity of sand, the weight of which is calculated by multiplying the roof area by the roof load specific to the type of awning (see 6.3.3), shall be provided.

The calculated quantity of sand shall be distributed uniformly over the profiled foam layers.

The loading time is 1 h.

#### 7.2.2 Test of the frame-angled joints

In order to test the assembly of the frame-angled joints, the test specimen is mounted according to figure 4.

At a distance of 100 cm from the frame-angled joints, 500 reciprocating movements are carried out with a force of 100 N and a frequency of 30 min<sup>-1</sup>.

Dimensions in centimetres

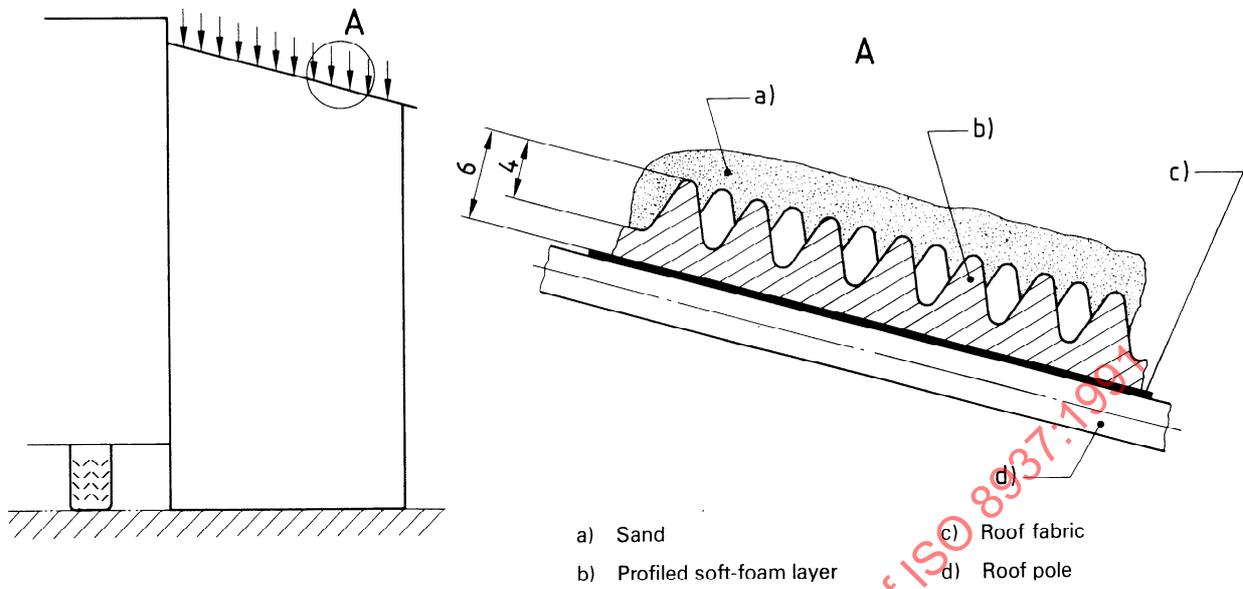


Figure 3 — Test of the load capacity

STANDARDSISO.COM : Click to view the full PDF of ISO 8937:1991

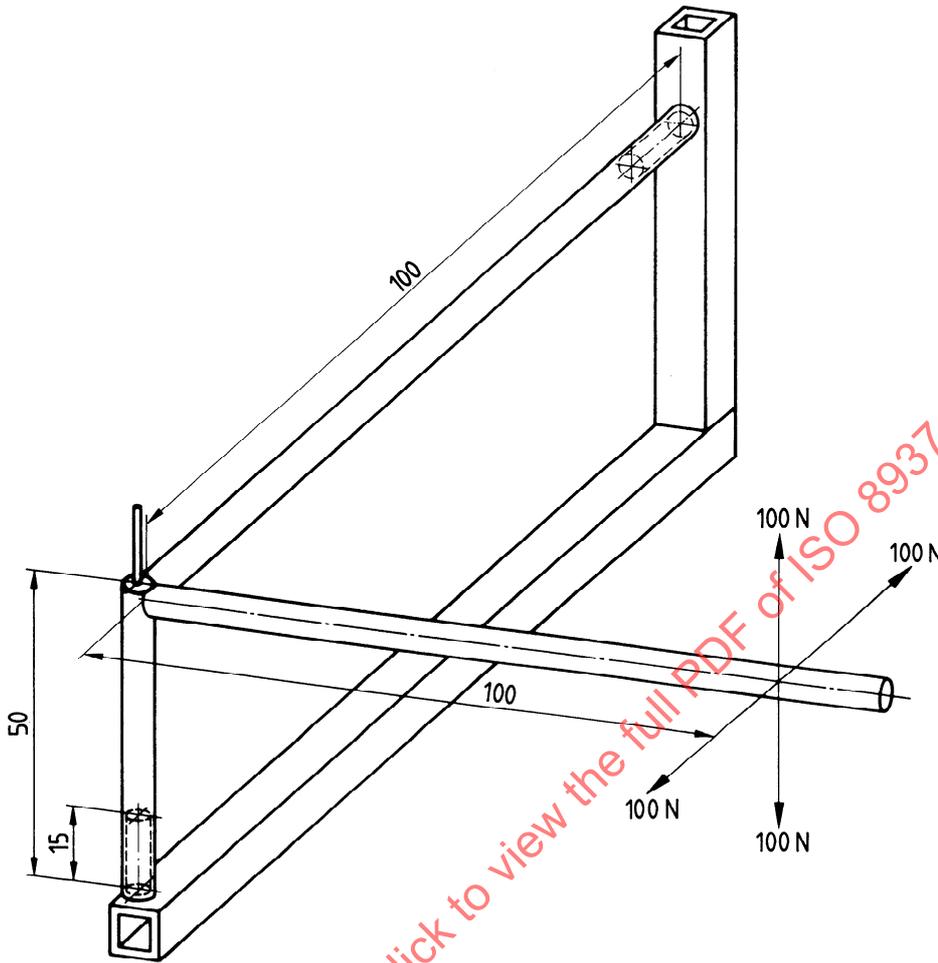


Figure 4 — Testing of the assembly of the frame-angled joints

### 7.2.3 Corrosion resistance

Assemble at least two specimens five times.

Use a 15 % (*m/m*) sodium chloride solution to test the resistance to corrosion. Pour 100 ml of this solution into a porcelain bowl which is covered by a glass plate, leaving open a small gap. Immerse one end of a strip of filter-paper (10 cm wide and 15 cm long) in the solution. Place the other end on the glass plate until the strip becomes saturated with the solution. After this, place the test sample on the filter-paper for 48 h.

The test temperature shall be  $20\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ .

### 7.3 Anchorage

Take three test specimens of the ground anchorage system in the form of 5 cm wide fabric strips. Clamp a specimen in a tensile testing machine by means of a peg, drawn through the eyelet, and by the awning fabric at the opposite end of the strip.

Carry out the test at the rate of 10 cm/min. Record the force at which fracturing occurs and the fabric is torn. Repeat for the remaining two specimens. Each specimen shall fulfil this requirement.

### 7.4 Awning attachment

To test the resistance of the awning attachment to being pulled out, introduce a test specimen with a width of 20 cm into a test channel with a width of 10 cm and clamp the other end into a 5 cm wide jaw for tensile testing, with a static force of 1000 N. (See figure 5.)

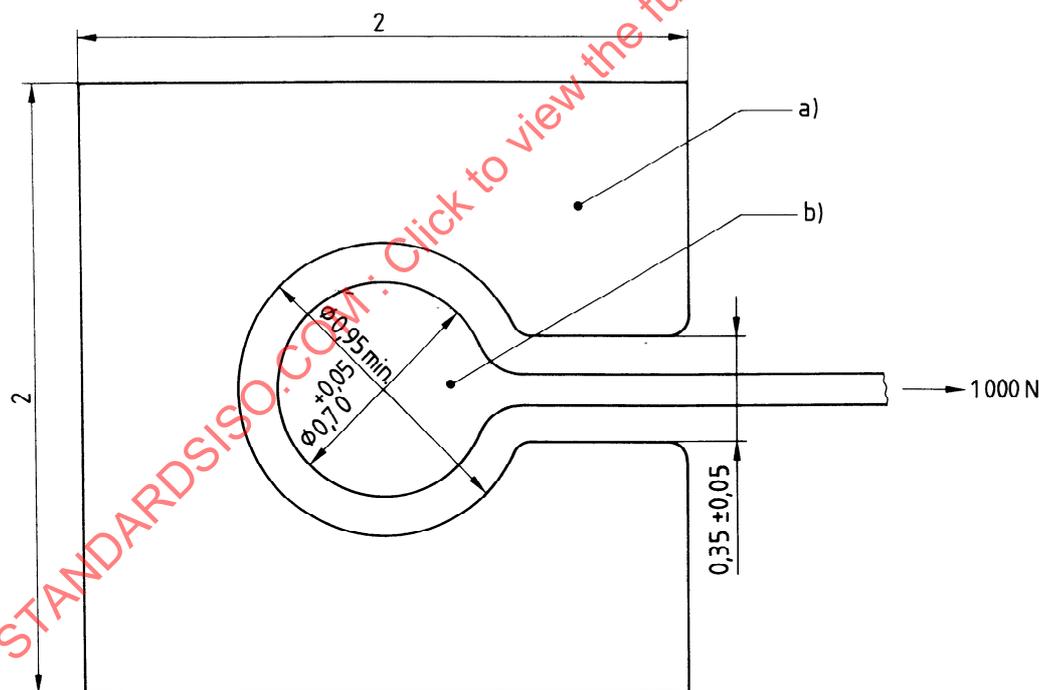
### 7.5 Mud wall pegging points

Load a pegging point of the mud wall with a load of 50 N for 5 min, using a 5 mm thick metal hook.

### 7.6 Rain resistance

Test according to ISO 5912 (see 6.11).

Dimensions in centimetres



- a) Test channel (metal)
- b) Cord

**Figure 5** — Test of the resistance of the awning attachment to being pulled out