



SLOVENSKI STANDARD SIST EN 1647:2000

01-december-2000

Leisure accommodation vehicles - Caravan holiday homes - Habitation requirements relating to health and safety

Leisure accommodation vehicles - Caravan holiday homes - Habitation requirements relating to health and safety

Bewohnbare Freizeitfahrzeuge - Mobilheime - Anforderungen an den Wohnbereich hinsichtlich Gesundheit und Sicherheit

Véhicules habitables de loisirs - Résidences mobiles - Exigences d'habitation relatives à la santé et à la sécurité

<https://standards.iteh.ai/catalog/standards/sist/7e327cd5-6ec1-4476-88db-7f43414b38d4/sist-en-1647-2000>

Ta slovenski standard je istoveten z: EN 1647:1998

ICS:

43.100	Osebni avtomobili. Bivalne prikolice in lahke prikolice	Passenger cars. Caravans and light trailers
--------	---	---

SIST EN 1647:2000

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1647:2000

<https://standards.iteh.ai/catalog/standards/sist/7e327cd5-6ec1-4476-88db-7f43414b38d4/sist-en-1647-2000>

EUROPEAN STANDARD

EN 1647

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 1998

ICS 43.100

Descriptors: mobile homes, safety requirements, accident prevention, specifications, tests, design, equipment specification, appointments, protection, water supply, electrical installation, gas installation, ventilation, fire protection, emergency exits, technical notices

English version

Leisure accommodation vehicles - Caravan holiday homes - Habitation requirements relating to health and safety

Véhicules habitables de loisirs - Résidences mobiles -
Exigences d'habitation relatives à la santé et à la sécurité

Bewohnbare Freizeitfahrzeuge - Mobilheime -
Anforderungen an den Wohnbereich hinsichtlich
Gesundheit und Sicherheit

This European Standard was approved by CEN on 1 July 1998.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents	Page
Foreword.....	3
1 Scope.....	4
2 Normative references	4
3 Definitions	5
4 Testing.....	5
5 Design and construction	5
6 Internal equipment.....	8
7 Drinking water supply , and drainage systems	11
8 Installations.....	11
9 Ventilation	12
10 Fire precautions.....	12
11 Warning notice.....	15
12 User's handbook.....	17
Annex A (normative) Thermal insulation - Method of calculation (see 5.7)	18
Annex B (informative) Examples of acceptable provisions for chassis holding down points (see 5.11).....	24
Annex C (normative) Clear height over bunks (see 6.1.2).....	25
Annex D (normative) Strength of curtains or nets designed to prevent occupants from falling out of bunks (see 6.1.3.3).....	26
Annex E (normative) Mechanical strength of bunks (see 6.1.4).....	27
Annex F (normative) Security of folding bunks (see 6.1.5)	29
Annex G (normative) Safety of access to upper bunks (see 6.1.6).....	30
Annex H (normative) Measurement of gaps (see 6.1.7)	32
Annex J (normative) Zone of risk (see 10.1.2).....	34
Annex K (normative) Test equipment	35

Foreword

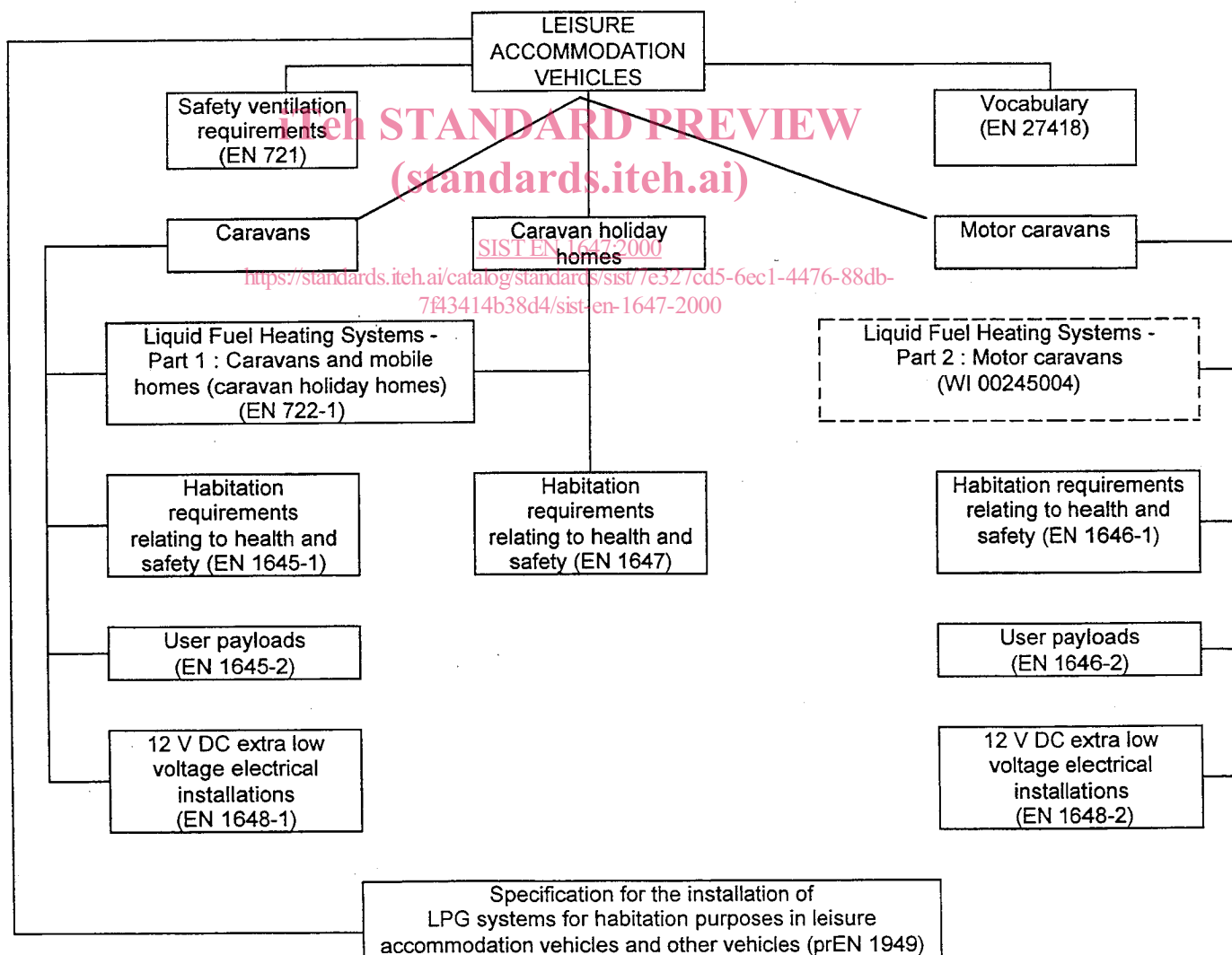
This European Standard has been prepared by Technical Committee CEN/TC 245 "Leisure accommodation vehicles", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 1999, and conflicting national standards shall be withdrawn at the latest by January 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This Standard is one of a series covering the habitation aspects of leisure accommodation vehicles.

The Standard includes nine normative annexes.



1 Scope

This European Standard specifies requirements intended to ensure safety and health of persons using caravan holiday homes as defined in clause 3, as temporary or seasonal accommodation.

It specifies grades of resistance to snow loads and the stability of the structure of caravan holiday homes as well as the minimum information to be included in a user's handbook.

It also specifies the corresponding test methods.

2 References

2.1 Normative references

This European Standard incorporates by dated or by undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision.

For undated references, the latest edition of the publication referred to applies.

EN 27418	Leisure accommodation vehicles - Vocabulary (ISO 7418: 1989)
prEN 624	LPG space heating equipment in vehicles and boats
EN 721	Leisure accommodation vehicles - Safety ventilation requirements
EN 722-1	Leisure accommodation vehicles - Liquid fuel fired heating systems - Part 1 : Caravans and mobile homes (caravan holiday homes)
prEN 1949	Specification for the installation of LPG-systems for habitation purposes in leisure accommodation vehicles and other vehicles
HD 384.7.708 S1	Electrical installations of buildings - Part 7 : Requirements for special installations or locations ; section 708 : electrical installations in caravan parks and caravans

3 Definitions

For the purposes of this standard the definitions given in EN 27418 apply and the following definition :

3.1 caravan holiday home

Transportable leisure accommodation vehicle that does not meet requirements for construction and use of road vehicles, that retains means for mobility and that is for temporary or seasonal occupation.

4 Testing

The tests described in annexes A to J, are intended to verify that a caravan holiday home representative of a given model including its fixtures and fittings, meets the requirements of this standard.

These tests are intended to simulate the most onerous conditions, for the relevant characteristics.

5 Design and construction

5.1 Occupancy

The manufacturer shall designate the occupancy as the number of berths provided, both standard and additional berths, provided by the manufacturer and shall include it in the user's handbook and his brochures. The occupancy is also necessary to determine the ventilation requirements (see EN 721).

5.2 Ceiling height

The ceiling height, measured internally from finished floor level to underside of finished ceiling, shall be not less than 1 980 mm.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

5.3 Windows

The living area, the area for meals, the kitchen and the sleeping accommodation shall each be provided with windows, the total glazed areas of which shall be equivalent to not less than 10 % of their respective floor areas. Windows to the living area, the area for meals and the kitchen shall have an openable area equivalent to 5 % of each respective floor area (see also 10.1.6).

5.4 Doors

At least one exterior door which opens outwards shall be provided.

5.5 Glazing

Glass in windows, panels and doors that is less than 800 mm above finished floor level shall be safety glazing

5.6 Kitchen location

When a separate kitchen compartment is provided, that can be closed off from other parts of the caravan holiday home by fully closing doors, there shall be two doors, separated by a space, ventilated to the exterior, between the kitchen and the toilet compartment.

5.7 Classification of thermal insulation and heating

The thermal insulation and heating levels for specific climatic conditions shall be classified as follows :

a) grade 1 : A caravan holiday home, including windows, doors and rooflights in which the average thermal transmittance (U) of the elements of construction shall not exceed $1,7 \text{ W}/(\text{m}^2 \cdot \text{K})$. There is no heating requirement for this grade ;

b) grade 2 : A caravan holiday home, including windows, doors and rooflights in which the average thermal transmittance (U) of the elements of construction shall not exceed $1,7 \text{ W}/(\text{m}^2 \cdot \text{K})$.

An average temperature difference of at least 20 K between inside and outside temperatures shall be achieved in lounge, dining room and kitchen, when the outside temperature is $0 \text{ }^\circ\text{C}$.

c) grade 3 : A caravan holiday home, including windows, doors and rooflights in which the average thermal transmittance (U) of the elements of construction shall not exceed $1,2 \text{ W}/(\text{m}^2 \cdot \text{K})$.

An average temperature difference of at least 35 K between inside and outside temperatures shall be achieved in all rooms, except the toilet compartment, when the outside temperature is $-15 \text{ }^\circ\text{C}$.

Precautions shall be taken to ensure that all services still operate when the outside temperature is $-15 \text{ }^\circ\text{C}$.

For grade 1 the average thermal transmittance (U) shall be calculated in accordance with the relevant parts of annex A. For grades 2 and 3, the average thermal transmittance (U value) and heating requirements shall be calculated in accordance with annex A.

5.8 Roof space ventilation

SIST EN 1647:2000

<https://standards.ketnet.ai/catalog/standards/sist/7e327cd5-6ec1-4476-88db-7f43414b38d4/sist-en-1647-2000>

Where there is an air gap between the external roof skin and the insulation material this air gap shall be ventilated to the external air at both ends of the roof.

If space allows, one high level and one low level ventilator shall be provided at both ends.

5.9 Floor

Underfloor insulation, if provided, shall be protected to reduce the possibility of degradation by birds or other animals (for example : rodents).

5.10 Fire behaviour of materials

NOTE: Pending harmonized European requirements for the assessment of the fire behaviour of materials, attention is drawn to national requirements which may apply.

5.11 Stability (resistance to overturning)

Caravan holiday homes of all grades shall be provided with suitable holding-down points, each capable of resisting 10 kN.

Holding down points shall be located at $1\ 000 \text{ mm} \pm 200 \text{ mm}$ from the ends of the main longitudinal chassis members at each corner of the caravan holiday home.

Examples of acceptable provisions for chassis holding down points are given in annex B.

The manufacturer shall indicate the position of the holding down points in the user's handbook.

5.12 Structural classification of caravan holiday homes

The structure of a caravan holiday home shall be graded according to its ability to withstand one of the following snow loadings :

- a) grade A : A caravan holiday home Grade A resting on its normal supports as defined by the manufacturer shall be capable of resisting a snow load of 750 Pa ¹⁾, exerted uniformly over the roof ;
- b) grade B : a caravan holiday home Grade B resting on its normal supports as defined by the manufacturer shall be capable of resisting a snow load of 1 500 Pa ¹⁾, exerted uniformly over the roof ;
- c) grade C : A caravan holiday home Grade C resting on its normal supports as defined by the manufacturer shall be capable of resisting a snow load of 2 000 Pa ¹⁾, exerted uniformly over the roof ;
- d) grade D : A caravan holiday home Grade D resting on its normal supports as defined by the manufacturer shall be capable of resisting a snow load of 3 000 Pa ¹⁾, exerted uniformly over the roof.

SIST EN 1647:2000

6 Internal equipment

6.1 Bunks

6.1.1 Mattress and/or upholstery

Bunks shall be provided with mattresses or be upholstered.

¹⁾ Provisional until confirmation by EUROCODE 1

6.1.2 Clearance

The clear width of a bunk shall be not less than 500 mm. The clear height over 2/3 of the surface area of the bunk shall be not less than 500 mm when measured from the compressed surface of the mattress or upholstery in accordance with the test in annex C.

6.1.3 Protection against falling out

6.1.3.1 General

Any bunk where the uncompressed upper surface of the mattress or upholstery is placed at a height of more than 1 000 mm from the floor, shall be protected on all sides to prevent the occupant from falling out.

All protections shall be secured against unintentional loosening.

6.1.3.2 Rigid protection

For rigid protection, the minimum height of the protection shall be at least 150 mm above the uncompressed upper surface of the mattress or upholstery. The protection shall be continuous except for a section of 300 mm to 500 mm to allow for means of access.

(standards.iteh.ai)

6.1.3.3 Protection by curtains or nets

SIST EN 1647:2000

Alternatively, the protection may be obtained by means of curtains or nets. The minimum height of the protection shall be at least 250 mm above the uncompressed upper surface of the mattress or upholstery. The protection shall be continuous except for a section of 300 mm to 500 mm to allow for means of access.

To allow access to the bunk, the curtains or nets on at least one side of the bunk may be detachable allowing an opening at least 500 mm wide.

The curtains or nets shall be capable of resisting a force of 100 N applied horizontally towards the outside of the bunk for 15 s to any point and shall not result in any tearing or detaching.

The strength of the curtains or nets shall be tested in accordance with annex D.

6.1.4 Mechanical strength

A force of 1 000 N applied vertically downwards, for 1 h, from the midpoint of each side member of any bunk where the upper surface of the compressed mattress or upholstery is placed at a height of more than 500 mm from the floor, shall neither cause permanent deformation of more than 5 mm of the frame of the bunk nor damage the fixing of the bunk to the structure of the caravan holiday home.

The mechanical strength shall be tested in accordance with annex E.

6.1.5 Security of folding bunks

If a bunk is designed to fold away it shall be secured against unintentional folding away.

In particular, the frame of a folding upper bunk shall not become detached when a force of 125 N is applied vertically upwards.

The capacity of a folding upper bunk to withstand unintentional folding away shall be tested in accordance with annex F.

6.1.6 Access to upper bunks

A means of access to an upper bunk shall be provided, such as surfaces of furniture, footholes in a solid component, handles or a ladder which may be fixed or be able to be attached to the bunk in a safe manner.

The width of the treads between positive supports shall be at least 250 mm.

When a ladder is used, the upper surfaces of the treads shall be equally spaced within a tolerance of ± 12 mm, and the unobstructed distance between consecutive treads shall be $225 \text{ mm} \pm 25 \text{ mm}$.

When tested in accordance with annex G the ladder shall not move when subjected to a downward static load of 1 000 N and a horizontal static load of 500 N, nor shall the ladder or its treads break or deflect permanently by more than 5 mm.

SIST EN 1647:2000

[https://standards.iteh.ai/catalog/standards/sist/7e327cd5-6ec1-4476-88db-](https://standards.iteh.ai/catalog/standards/sist/7e327cd5-6ec1-4476-88db-67c1e38d4/sist-en-1647-2000)

6.1.7 Protection against entrapment

When ready for use a bunk and its means of access shall not contain any open-ended tubing, nor shall there be projections, holes, loose washers, speed fixing nuts or crevices on which clothing or any part of the body could become snagged or trapped. Tension springs in the base structure are excluded. All edges, corners and projecting parts that are accessible shall be free from burrs and sharp edges.

If the base of a bunk is not covered by permanently fixed upholstery, any gap in the base shall not permit the passage of the cone (see H.1) beyond the point at which the diameter of the cone is 75 mm, when measured in accordance with H.2.

Any other gap in the structure of the bunk itself, including any formed when the means of access is attached according to the manufacturer's instructions but excluding the space for access, shall permit the passage of the cone beyond the point at which the diameter of the cone is 60 mm but not beyond the point where the diameter is 75 mm, when tested in accordance with H.3.

When a gap cannot be tested because a constructional feature prevents proper positioning of the cone, the constructional feature may be removed to the extent necessary to allow the tests to be carried out.

6.2 Cooking appliance

If space is provided for the installation of a cooker, the space shall be at least 540 mm wide by 600 mm deep.

6.3 Toilets (W.C.)

If a W.C. is fitted, by the manufacturer of the caravan holiday home, it shall be capable of being connected to an external drainage system.

6.4 Lighting

There shall be provision of artificial lighting in all habitable areas of a caravan holiday home.

6.5 Appliances

6.5.1 Installation of appliances

Appliances shall be installed in accordance with the appliance manufacturer's instructions.

NOTE: It is essential that appliances are installed in accordance with European directives and standards in force for the corresponding appliance.

6.5.2 Restriction concerning the supply or use of appliances

Portable appliances producing heat and non room-sealed heating appliances shall not be permitted or supplied with the caravan holiday home by the caravan holiday home manufacturer.

6.5.3 Flue pipes

LPG and liquid fuel fired heating appliances shall be flued.

Flue pipes shall be constructed of non-combustible material (see 8.2 and 8.3) and conform to prEN 624 and prEN 1949, as applicable.

7 Drinking water supply , and drainage systems

7.1 Drinking water

7.1.1 Supply

A caravan holiday home shall be equipped with a system for supplying drinking water.

Any drinking water tanks shall be capable of being flushed and cleaned.