SLOVENSKI STANDARD
SIST EN 1647:2019

01-januar-2019

Nadomešča:
SIST EN 1647:2012

Bivalna počitniška vozila - Premične počitniške hišice - Zdravstvene in varnostne zahteve za bivanje

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

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Ta slovenski standard je istoveten z: **EN 1647:2018**

ICS:

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

SIST EN 1647:2019 **en,fr,de**

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1647

November 2018

ICS 43.100

Supersedes EN 1647:2012

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 13 May 2018.

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Ref. No. EN 1647:2018 E

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European foreword

This document (EN 1647:2018) has been prepared by Technical Committee CEN/TC 245 "Leisure accommodation vehicles", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by May 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.

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

This document supersedes EN 1647:2012.

In relation to EN 1647:2012, the following main technical changes were implemented:

a) Figure 1 modified by removing EN 1645-2 and EN 1646-2, which were withdrawn;

b) in 5.2 "Ceiling height", requirements specified;

c) in 5.5 "Glazing", requirements specified;

d) (former) 5.6 "kitchen location" and 5.10 "Fire behaviour of materials" deleted;

e) in 8.1 "Electricity", earth wiring specified;

f) 10.1.2 "Escape path" and 10.1.3 "Sanitation compartment" clarified;

g) 10.1.6 "Emergency windows and emergency panels" modified;

h) 10.3 "Protection of flammable elements" specified;

i) in Clause 12 "User's handbook", new information added and new types of fire extinguishers covered;

j) new Annex K (informative) "Types of socket outlet in Europe" added;

k) normative references updated;

l) editorially modified.

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Introduction

Figure 1 gives an overview of the relevant European Standards for caravans, motor caravans and caravan holiday homes.

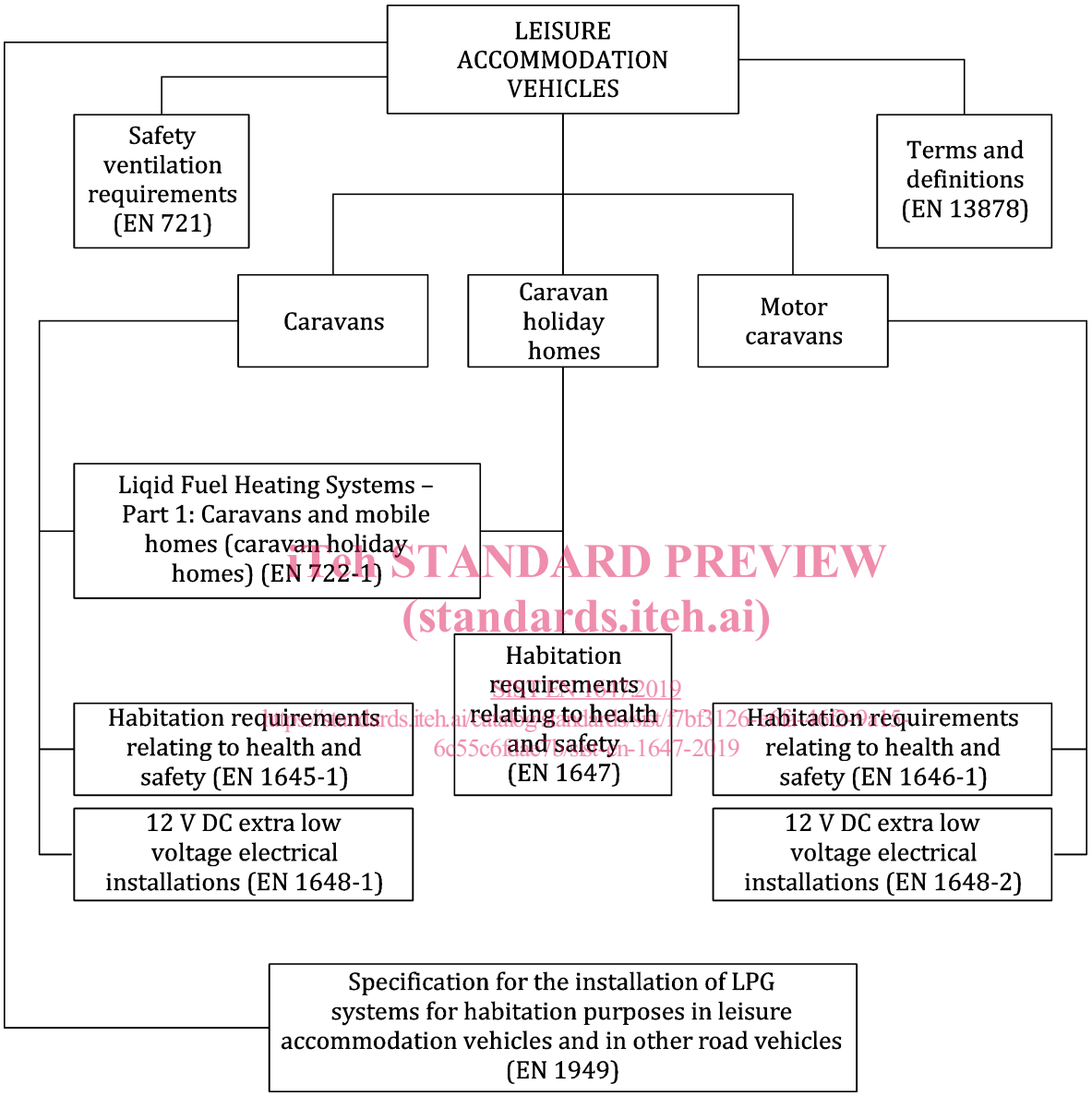

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Figure 1 — Overview of relevant European Standards applying to leisure accommodation vehicles

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1 Scope

This European Standard specifies requirements intended to ensure safety and health of persons using caravan holiday homes as defined in EN 13878, 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 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 3-7, *Portable fire extinguishers — Part 7: Characteristics, performance requirements and test methods*

EN 624, *Specification for dedicated LPG appliances — Room sealed LPG space heating equipment for installation in vehicles and boats*

EN 721, *Leisure accommodation vehicles — Safety ventilation requirements*

EN 722-1, *Leisure accommodation vehicles — Liquid fuel heating systems - Part 1: Caravans and caravan holiday homes*

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EN 747-1, *Furniture — Bunk beds and high beds — Part 1: Safety, strength and durability requirements*

EN 1949, *Specification for the installation of LPG systems for habitation purposes in leisure accommodation vehicles and accommodation purposes in other vehicles*

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EN 12600, *Glass in building — Pendulum test — Impact test method and classification for flat glass*

EN 13878, *Leisure accommodation vehicles — Terms and definitions*

HD 60364 (all parts), *Low-voltage electrical installations (IEC 60364 series)*

EN 60598 (all parts), *Luminaires (IEC 60598 series)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13878 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 Testing

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

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

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It is recommended to take environmental aspects into account during development, production and disposal of caravan holiday homes based on established knowledge and within the respective technical possibilities (see also Annex J).

5 Design and construction

5.1 Occupancy

The manufacturer shall designate the occupancy as the number of berths, 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, except in areas above fixed furniture, shall be not less than 1 980 mm.

The finished floor level shall be measured from the upper surface of any continuous fixed floor covering. This includes any vinyl carpet backing but not carpet pile.

5.3 Glazed areas

The living area, the area for meals and the kitchen 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. Sleeping accommodation shall be provided with glazed area not less than 5 % of the floor areas. An exterior glazed area can be classed as a window for this purpose.

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Glazed areas to the living area, the area for meals and the kitchen shall have an openable area equivalent to 5 % of each respective floor area.

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The floor area of the unit should be calculated from the total internal floor area excluding partition walls and separate fixed compartments which extend the full internal height of the unit. All floor area covered by fixed or loose furniture that does not extend the full height of the unit should be counted into the area. Transparent or translucent roof lights may be classed as glazed area.

5.4 Doors

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

Sliding doors will be deemed to be acceptable provided that the sliding operation of the door is not obstructed by a fixture and the door, when open, does not obstruct any emergency exit.

5.5 Glazing

Any glass in external windows, panels and doors that are less than 800 mm above finished floor level shall be safety glazing class 3B3 or better in accordance with EN 12600.

5.6 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 roof lights in which the average thermal transmittance (U) of the elements of construction shall not exceed 1,7 W/(m^{2}K). There is no heating requirement for this grade;

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

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An average temperature difference of at least 20 K between inside and outside temperatures shall be achieved in the living area, the area for meals and the kitchen, when the outside temperature is 0 °C;

c) grade 3: A caravan holiday home, including windows, doors and roof lights in which the average thermal transmittance (U) of the elements of construction shall not exceed 1,2 W/(m²K).

An average temperature difference of at least 35 K between inside and outside temperatures shall be achieved in all rooms, except the sanitation compartment, when the outside temperature is −15 °C.

Precautions shall be taken to ensure that all water services still operate when the outside temperature is −15 °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.

5.7 Roof space ventilation

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.

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

5.8 Underfloor

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

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5.9 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.

5.10 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 ± 200) mm from the ends of the main longitudinal chassis members at each corner of the caravan holiday home.

The manufacturer shall indicate the position of the holding down points in the User's Handbook.

5.11 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, 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, 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, exerted uniformly over the roof.

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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, exerted uniformly over the roof.

Compliance can be verified either by the submission of the calculations of a qualified structural engineer, a worst case failure mode effect analysis (FMEA) or by testing in accordance with Annex B.

The structure is considered to have passed the test if it remained safe and returned to an acceptable condition on removal of the load applied. To satisfy the requirement of "remain safe", all designated means of escape egress from the unit (doors and windows) shall function during and after the test.

6 Internal equipment

6.1 Bunks

6.1.1 General

Free standing bunks shall be in accordance with 6.1.2, 6.1.3 and EN 747-1.

Build-in bunks shall be in accordance with 6.1.2 to 6.1.8.

6.1.2 Mattress and/or upholstery

Bunks shall be provided with mattresses or be upholstered.

6.1.3 Clearance

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The clear width of a bunk shall be not less than 500 mm. The clear height over two-thirds 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.

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6.1.4 Protection against falling out

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6.1.4.1 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. Any gap between one element of protection and another shall conform to 6.1.8. Nevertheless, no gap shall exceed 75 mm.

All protections shall be secured against unintentional loosening.

High level bunks shall be provided with a label written in the language of the country where the caravan holiday home is to be first sold with the following wording:

"Not suitable for children under 6 years old without supervision".

6.1.4.2 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. To allow entry, an access gap of 350 mm to 550 mm measured at its narrowest point shall be provided.

Where a rigid protection presents an apparent flexibility, its resistance shall be tested in accordance with Annex D.

A protection is considered as rigid if it is not bent more than 10 mm under a force of 100 N applied horizontally in the middle of the protection.

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6.1.4.3 Protection by curtains or nets

Alternatively, the protection may be obtained by means of curtains or nets. The minimum height of the protection shall be at least 160 mm above the uncompressed upper surface of the mattress or upholstery, when the upper edge is loaded with 100 N in a vertical direction downward.

To allow access to the bunk, the curtains or nets on at least one side of the bunk may be detachable allowing an opening 350 mm to 550 mm.

Means of emergency exit from the bunk shall be accessible from the upper surface of the bunk.

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 this shall not result in any tearing nor detaching nor creating any gap larger than 60 mm at the lower edge of the protection.

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

Any gap created during the resistance test shall be measured in accordance with Annex H.

6.1.5 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.

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6.1.6 Security of folding bunks

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

A folding bunk shall not unintentionally move from its stored position. Both conditions will be tested in accordance with Annex F.

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6.1.7 Access to high level bunks

A means of access to an high level 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.

The distance between the top foothold and the uppermost part of the bed structure, e.g. the side rail or safety barrier, at the point of access shall not be more than 400 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 ± 25) 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.

Where it is impractical to test the bunk ladder in the caravan holiday home, it is acceptable to test an identical configuration of the ladder, its method of fixing and its range of positions of use, outside the caravan holiday home according to Annex G.

6.1.8 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