

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 1647:2018 sisaldab Euroopa standardi EN 1647:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 1647:2018 consists of the English text of the European standard EN 1647:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 14.11.2018.	Date of Availability of the European standard is 14.11.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 43.100

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

EUROPEAN STANDARD

**EN 1647**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 19 December 2018.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>	<b>Page</b>
European foreword.....	5
Introduction .....	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions .....	7
4 Testing.....	7
5 Design and construction.....	8
5.1 Occupancy.....	8
5.2 Ceiling height.....	8
5.3 Glazed areas .....	8
5.4 Doors.....	8
5.5 Glazing.....	8
5.6 Classification of thermal insulation and heating.....	8
5.7 Roof space ventilation .....	9
5.8 Underfloor .....	9
5.9 Fire behaviour of materials.....	9
5.10 Stability (resistance to overturning) .....	9
5.11 Structural classification of caravan holiday homes.....	9
6 Internal equipment .....	10
6.1 Bunks.....	10
6.1.1 General.....	10
6.1.2 Mattress and/or upholstery.....	10
6.1.3 Clearance.....	10
6.1.4 Protection against falling out.....	10
6.1.5 Mechanical strength.....	11
6.1.6 Security of folding bunks.....	11
6.1.7 Access to high level bunks.....	11
6.1.8 Protection against entrapment.....	11
6.2 Cooking appliance.....	12
6.3 Toilets.....	12
6.3.1 General.....	12
6.3.2 Toilets connected to water supply system.....	12
6.3.3 Toilets not connected to water supply system.....	12
6.4 Lighting.....	12
6.5 Appliances.....	12
7 Drinking water supply and drainage systems .....	13
7.1 Drinking water .....	13
7.1.1 Supply.....	13
7.1.2 Materials.....	13
7.1.3 Supply coupling.....	13
7.2 Drainage system .....	13
8 Installations .....	13
8.1 Electricity .....	13

8.2	Liquefied petroleum gas (LPG).....	13
8.3	Liquid fuel.....	13
9	Ventilation.....	14
9.1	Safety ventilation.....	14
9.2	Additional ventilation.....	14
9.2.1	Larder and food storage.....	14
9.2.2	Fold-away beds.....	14
9.2.3	Wardrobes and bed lockers.....	14
10	Fire precautions.....	14
10.1	Means of escape.....	14
10.1.1	General.....	14
10.1.2	Escape path.....	14
10.1.3	Sanitation compartments.....	15
10.1.4	Emergency doors.....	15
10.1.5	Interior doors.....	15
10.1.6	Emergency windows and emergency panels.....	15
10.1.7	Obstruction of doors, escape paths or emergency exits.....	17
10.2	Protection of surfaces adjacent to heat generating appliances.....	17
10.3	Protection of flammable elements.....	17
10.3.1	Rigid and guided elements.....	17
10.3.2	Non-guided elements.....	18
10.4	Hotplates.....	18
11	Warning notice.....	18
11.1	Provision of warning notice.....	18
11.2	Content of warning notice.....	19
12	User's handbook.....	19
Annex A	(normative) Thermal insulation - Method of calculation (see 5.7).....	21
A.1	Explanation of terms used.....	21
A.2	Objectives of calculation.....	22
A.3	Method of calculation.....	22
A.3.1	General.....	22
A.3.2	Calculation of $R_1, R_2, R_3$ .....	22
A.3.3	Calculation of thermal transmittance for one caravan holiday home wall, $U_w$ .....	23
A.3.4	Calculation of overall thermal transmittance of caravan holiday home, $U_e$ .....	24
A.3.5	Losses of heat via the walls, $k_w$ .....	25
A.3.6	Losses of heat due to renewal of air, $k_v$ .....	25
A.3.7	Rated power of heating appliances, $P$ .....	25
A.3.8	Temperature.....	25
Annex B	(normative) Snow Load Test.....	27
B.1	Principle.....	27
B.2	Preparation.....	27
B.3	Loading procedure.....	27
B.4	Expression of results.....	27
B.5	Test report.....	27
Annex C	(normative) Clear height over bunks (see 6.1.3).....	28
C.1	Principle.....	28
C.2	Preparation and procedure.....	28
C.3	Expression of results.....	28
C.4	Test report.....	28

<b>Annex D (normative) Strength of protection against falling out of bunks (see 6.1.4.3)</b> .....	<b>29</b>
D.1 Principle .....	29
D.2 Preparation and procedure.....	29
D.3 Expression of results.....	29
D.4 Test report.....	29
<b>Annex E (normative) Mechanical strength of bunks (see 6.1.5)</b> .....	<b>30</b>
E.1 Principle .....	30
E.2 Selection of bunk.....	30
E.3 Preparation and procedure.....	30
E.4 Expression of results.....	30
E.5 Test report.....	30
<b>Annex F (normative) Security of folding bunks (see 6.1.6)</b> .....	<b>31</b>
F.1 Principle .....	31
F.2 Preparation and procedure.....	31
F.3 Expression of results.....	31
F.4 Test report.....	31
<b>Annex G (normative) Safety of access to high level bunks (see 6.1.7)</b> .....	<b>32</b>
G.1 Principle .....	32
G.2 Preparation and procedure.....	32
G.2.1 General.....	32
G.2.2 Attachment and deflection .....	32
G.3 Expression of results.....	32
G.4 Test report.....	32
<b>Annex H (normative) Measurement of gaps (see 6.1.8)</b> .....	<b>34</b>
H.1 Cone measuring device .....	34
H.2 Gaps in the base structure .....	34
H.3 Measurement of gaps.....	34
<b>Annex I (normative) Test equipment</b> .....	<b>35</b>
I.1 General.....	35
I.2 Load measuring cell .....	35
I.3 Load measuring cell .....	35
I.4 Certified weights .....	35
I.5 Load spreading platform .....	35
I.6 Flexible load spreading device.....	35
I.7 Ball.....	35
I.8 Cone measuring device .....	35
<b>Annex J (informative) Environmental aspects</b> .....	<b>36</b>
<b>Annex K (informative) Types of socket outlet in Europe</b> .....	<b>37</b>
<b>Bibliography</b> .....	<b>39</b>

## 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.

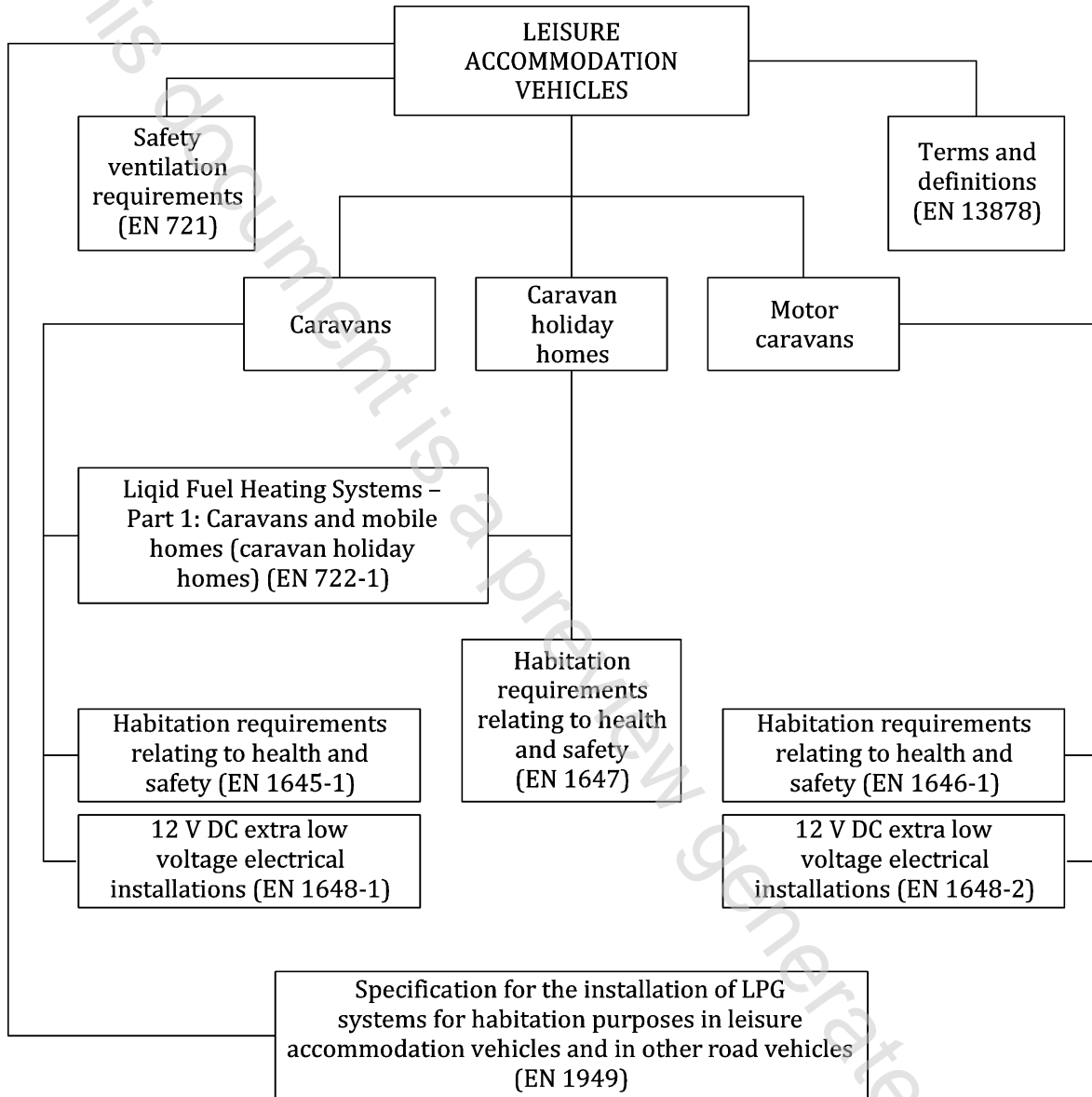
In relation to EN 1647:2012, the following main technical changes were implemented:

- 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.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

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



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



## 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*

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*

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.