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Standards

Irish Standard  
I.S. EN 1648-1:2012

# Leisure accommodation vehicles - 12 V direct current extra low voltage electrical installations - Part 1: Caravans

## I.S. EN 1648-1:2012

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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English Version

## Leisure accommodation vehicles - 12 V direct current extra low voltage electrical installations - Part 1: Caravans

Véhicules habitables de loisirs - Installations électriques à très basse tension de 12 V en courant continu - Partie 1: Caravanes

Bewohnbare Freizeitfahrzeuge - Elektrische Anlagen für DC 12 V - Teil 1: Caravans

This European Standard was approved by CEN on 16 June 2012.

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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.

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## Foreword

This document (EN 1648-1:2012) 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of an identical text or by endorsement, at the latest by January 2013, and conflicting national standards shall be withdrawn at the latest by January 2013.

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

This document supersedes EN 1648-1:2004.

The main technical changes since the previous edition are:

- a) The battery capacity is no more a requirement: sub-clause 4.3.2 "Capacity" deleted;
- b) Requirements on tube diameter deleted in 4.3.4 b);
- c) Reference to EC directive 2007/46/EC, Annex II added in 4.3.4;
- d) Clarification added to 4.3.5 and Clause 8 that the warning notice shall be written in the language(s) of the country in which the caravan is to be sold for the first time;
- e) Sub-clause 4.5 amended;
- f) Footnotes added in Table 1 for clarification;
- g) Sub-clause 5.3 "Fixed wiring" amended;
- h) Note added in 6.2;
- i) Clause 7 "Installation of appliances" amended;
- j) Normative references adapted according to above listed changes;
- k) Annex A revised editorially;
- l) Figure 1 added to Foreword.

EN 1648, Leisure accommodation vehicles - 12 V direct current extra low voltage electrical installations contains the following parts:

- *Part 1: Caravans* (the present document);
- *Part 2: Motor caravans*.

This document is based on ISO 8818 "Leisure accommodation vehicles — Caravans — 12 V direct current extra low voltage electrical installations" and takes into consideration specific aspects relating to electrical installations in caravans.

The requirements of relative ISO/IEC and CENELEC publications were taken into consideration during the preparation of this European Standard.

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

Requirements for 12 V direct current extra low voltage electrical installations for motor caravans are specified in EN 1648-2.

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, 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.

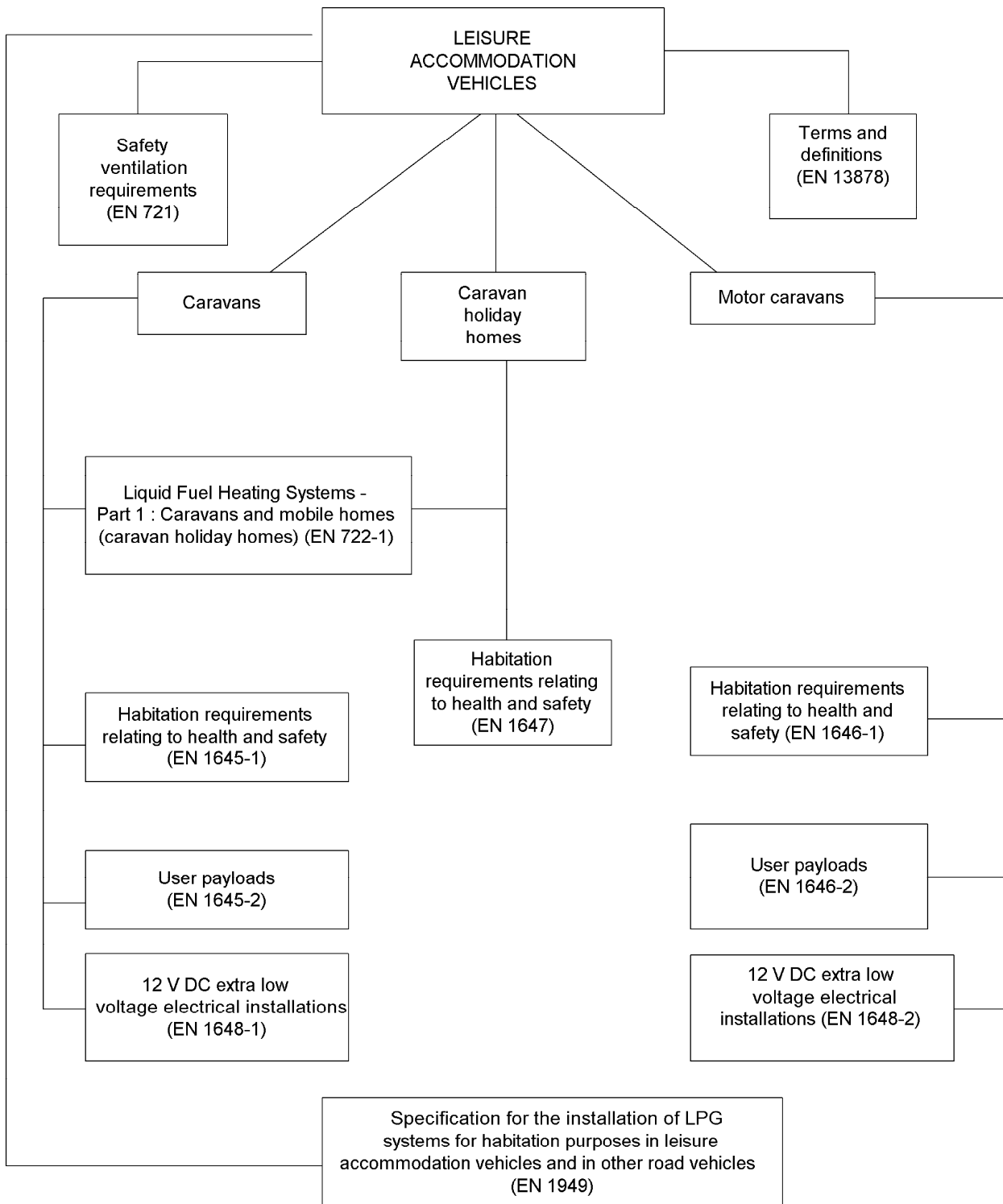


Figure 1 — Overview of relevant European Standards applying to leisure accommodation vehicles



## 1 Scope

This European Standard specifies safety, health and functional requirements for 12 V direct current (DC) extra low voltage (ELV) electrical installations for habitation aspects of caravans. It covers the design and integration of the caravan system with the towing vehicle system.

It does not apply to commercial trailers; nor does it include requirements for ELV road lighting and signalling lamps and their installations, except for safety requirements for the routing of cables in LPG storage compartments.

This European Standard also specifies the ELV output requirements of low voltage (LV) equipment that may be used to provide an ELV supply but it does not specify safety, technical and functional requirements for LV appliances and installations. Requirements for LV installations are specified in HD 60364-7-721.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1645-1, *Leisure accommodation vehicles — Caravans — Part 1: Habitation requirements relating to health and safety*

EN 13878:2003, *Leisure accommodation vehicles — Terms and definitions*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529)*

EN 60898-2, *Electrical accessories — Circuit-breakers for overcurrent protection for household and similar installations — Part 2: Circuit-breakers for a.c. and d.c. operation (IEC 60898-2)*

EN ISO 11446, *Road vehicles — Connectors for the electrical connection of towing and towed vehicles — 13-pole connectors for vehicles with 12 V nominal supply voltage (ISO 11446)*

HD 21 (series), *Cables of rated voltages up to and including 450/750 V and having thermoplastic insulation*

HD 22 (series), *Cables of rated voltages up to and including 450/750 V and having cross-linked insulation*

ISO 1724, *Road vehicles — Connectors for the electrical connection of towing and towed vehicles — 7-pole connector type 12 N (normal) for vehicles with 12 V nominal supply voltage*

ISO 3732, *Road vehicles — Connectors for the electrical connection of towing and towed vehicles — 7-pole connector type 12 S (supplementary) for vehicles with 12 V nominal supply voltage*

ISO 6722 (series), *Road vehicles — 60 V and 600 V single-core cables*

ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 8820-1, *Road vehicles — Fuse-links — Part 1: Definitions and general test requirements*

ISO 8820-3, *Road vehicles — Fuse-links — Part 3: Fuse-links with tabs (blade type) Type C (medium), Type E (high current) and Type F (miniature)*

ISO 8820-4, *Road vehicles — Fuse-links — Part 4: Fuse-links with female contacts (type A) and bolt-in contacts (type B) and their test fixtures*

## 3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 13878:2003 apply.

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