SLOVENSKI STANDARD
SIST EN 1648-1:2018

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Nadomešča:
SIST EN 1648-1:2012

Bivalna počitniška vozila - 12 V enosmerna električna napeljava male napetosti - 1. del: Počitniške prikolice

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

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

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

Ta slovenski standard je istoveten z: **EN 1648-1:2018**

ICS:

43.040.10	Električna in elektronska oprema	Electrical and electronic equipment
43.100	Osebni avtomobili. Bivalne prikolice in lahke prikolice	Passenger cars. Caravans and light trailers

SIST EN 1648-1:2018 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1648-1

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ICS 43.040.10; 43.100

Supersedes EN 1648-1:2012

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

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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.

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.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 1648-1:2018) 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 July 2018, and conflicting national standards shall be withdrawn at the latest by July 2018.

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

This document supersedes EN 1648-1:2012.

EN 1648, *Leisure accommodation vehicles — 12 V direct current extra low voltage electrical installations*, is currently composed with the following parts:

— *Part 1: Caravans*;

— *Part 2: Motor caravans*.

In relation to EN 1648-1:2012, the main technical changes are:

a) Figure 1 modified to remove EN 1645-2 and EN 1646-2 which were withdrawn;

b) Table 1 updated;

c) in 4.3.5 “Auxiliary battery compartment”, new generations of batteries covered;

d) 4.3.6 “Warning notice” the graphical symbol and marking changed;

e) in 5.3.6 “Auxiliary battery cables”, dimension for taping added;

f) 6.4.2 “Electric equipment in LPG storage compartment” modified and headline updated

g) 6.4 “Prohibited locations” modified;

h) normative references updated;

i) editorially modified.

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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.

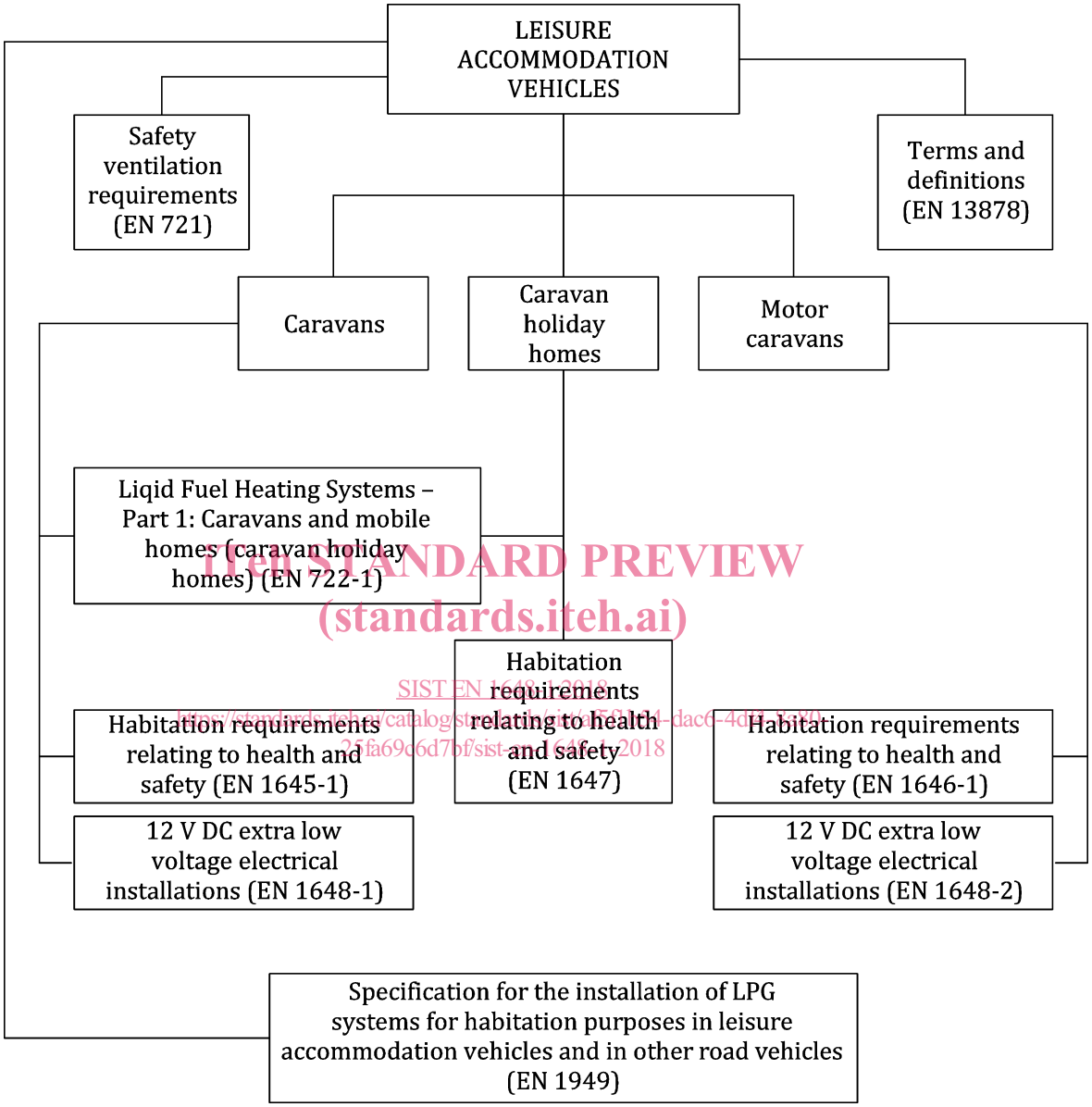

Figure 1 — Overview of relevant European Standards applying to leisure accommodation vehicles

1 Scope

This European Standard specifies 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 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 50525 (all parts), *Electric cables — Low voltage energy cables of rated voltages up to and including 450/750 V* (U_0/U)

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

HD 60364-4-43, *Low-voltage electrical installations — Part 4-43: Protection for safety — Protection against overcurrent (IEC 60364-4-43)*

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)*

ISO 6722 (all parts), *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*

ISO 11446-1:2012, *Road vehicles — Connectors for the electrical connection of towing and towed vehicles — Part 1: 13-pole connectors for vehicles with 12 V nominal supply voltage not intended to cross water fords*

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 Power supply

4.1 General

The power supply shall be a nominal DC 12 V (minimum 11 V and maximum 15 V).

4.2 Sources of supply

The supply shall be obtained from one or more of the following sources:

a) the electrical installation of the towing vehicle;

b) an auxiliary battery mounted within the caravan (see 4.3);

c) LV supply via an on-board mounted AC/DC converter (e.g. transformer, switching power supply) that complies with the requirements of the relevant standards in accordance with Directive 2014/35/EU and subsequent amendments;

d) DC generator (see 4.4.1);

e) regenerative energy sources (see 4.4.2).

If several sources of supply are used it shall be ensured that there is no unfavourable interaction.

4.3 Auxiliary batteries

4.3.1 Type of battery

An auxiliary battery shall be of the rechargeable type.

4.3.2 Terminals

Auxiliary battery terminals shall be clearly and durably marked “+” and “−“. Connections to auxiliary battery terminals shall be securely clamped or bolted to ensure continuous contact and shall be insulated unless the auxiliary battery is provided with an insulating cover.

4.3.3 Location

An auxiliary battery shall be placed in a compartment according to 4.3.5, which is designed to protect it from mechanical damage, with easy access for maintenance and/or removal and secured to prevent movement of the battery, e.g. when the caravan is in motion.

4.3.4 Caravans without auxiliary battery

If an auxiliary battery is intended to be used but not provided, then the position and instructions for the installation shall be included in the user's handbook according to Clause 8 and a notice shall be fixed in its compartment or near the proposed location.

If a caravan is not designed to accept an auxiliary battery, it shall be clearly stated in the user's handbook.