

# **Leisure accommodation vehicles — 12 V direct current extra low voltage electrical installations**

## **Part 1. Caravans**

The European Standard EN 1648-1 : 1997 has the status of a  
British Standard

ICS 43.040.10; 43.100

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## Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled 'International Standards Correspondence Index', or by using the 'Find' facility of the BSI Standards Electronic Catalogue.

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## Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 10, an inside back cover and a back cover.

This British Standard, having been prepared under the direction of the Sector Board for Building and Civil Engineering, was published under the authority of the Standards Board and comes into effect on 15 March 1998

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Descriptors: Electrical installation, extra low voltage, direct current, caravans, safety requirements, accident prevention, specifications, electric power supply, wiring, overcurrent protection, installation

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 18 September 1997.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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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of an identical text or by endorsement, at the latest by April 1998, and conflicting national standards shall be withdrawn at the latest by April 1998.

This European Standard 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 publication of this European Standard.

This European Standard 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 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.

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## 1 Scope

This European Standard specifies safety, health and functional requirements for 12 V direct current (d.c.) 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.

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 384-7-708.S1.

## 2 Normative references

This European Standard incorporates, by dated or 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.

- prEN 1645-1 *Leisure Accommodation Vehicles — Caravans — Part 1: Habitation requirements relating to health and safety*
- EN 27418 *Leisure accommodation vehicles — Vocabulary* (ISO 7418 : 1989)
- EN 50102 *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*
- EN 60335-1 *Safety of household and similar electrical appliances — Part 1: General requirements*
- EN 60335-2-29 *Safety of household and similar electrical appliances — Part 2: Particular requirements for battery chargers*
- EN 60529 *Degrees of protection provided by enclosures (IP code)* (IEC 529 : 1989)
- EN 60742 *Isolating transformers and safety isolating transformers — Requirements* (IEC 742 : 1983 +A1 : 1992, modified)

- HD 21.1 S2 *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V — Part 1: General requirements* (IEC 227-1 : 1989)
- HD 21.3 S3 *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V — Part 3: Non-sheathed cables for fixed wiring* (IEC 227-3 : 1993, modified)
- HD 21.4 S2 *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V — Part 4: Sheathed cables for fixed wiring*
- HD 21.5 S3 *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V — Part 5: Flexible cables (cords)* (IEC 227-5 : 1979, modified)
- HD 22.1 S2 *Rubber insulated cables of rated voltages up to and including 450/750 V — Part 1: General requirements* (IEC 245-1 : 1980, modified)
- HD 22.4 S3 *Rubber insulated cables of rated voltages up to and including 450/750 V — Part 4: Cords and flexible cables* (IEC 245-4 : 1994, modified)
- 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* (IEC 364-7-708 : 1988, modified)
- ISO/DIS 1724 *Passenger cars and light commercial vehicles with 12 V systems — 7-pole connectors between towing vehicles and trailers — Type 12 N (normal)*
- ISO/DIS 3732 *Passenger cars and light commercial vehicles with 12 V systems-7-pole connectors between towing vehicles and trailers — Type 12 N (supplementary)*
- ISO 6309 *Fire protection — Safety signs*
- ISO 6722-1 *Road vehicles — Unscreened low-tension cables — Part 1: Test methods*
- ISO 6722-2 *Road vehicles — Unscreened low-tension cables — Part 2: Requirements*
- ISO 8820-2 *Road vehicles — Blade-type electric fuse-links — Part 2: Dimensions*
- ISO 11446 *Passenger cars and light commercial vehicles equipped with 12 V systems — 13-pole connectors between towing vehicles and trailers — Dimensions and contact allocation*