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Oprema za ravnanje s pacienti v reševalnih vozilih - 1. del: Splošni sistemi nosil in oprema za ravnanje s pacienti

Patient handling equipment used in road ambulances - Part 1: General stretcher systems and patient handling equipment

Krankentransportmittel im Krankenkraftwagen - Teil 1: Allgemeine Krankentragesysteme und Krankentransportmittel

Spécifications d'équipements pour le transport de patient dans les ambulances routières - Partie 1: Systèmes généraux de brancards et équipement pour le transport de patients

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EUROPEAN STANDARD

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Patient handling equipment used in road ambulances - Part 1: General stretcher systems and patient handling equipment

Spécifications d'équipements pour le transport de patient
dans les ambulances routières - Partie 1: Systèmes
généraux de brancards et équipement pour le transport de
patients

Krankentransportmittel im Krankenkraftwagen - Teil 1:
Allgemeine Krankentragesysteme und
Krankentransportmittel

This European Standard was approved by CEN on 2 July 2010 and includes Amendment 1 approved by CEN on 26 March 2015.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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EN 1865-1:2010+A1:2015 (E)**Foreword**

This document (EN 1865-1:2010+A1:2015) has been prepared by Technical Committee CEN/TC 239 "Rescue systems", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by November 2015, and conflicting national standards shall be withdrawn at the latest by November 2015.

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 includes Amendment 1, approved by CEN on 2015-03-26.

The start and finish of text introduced or altered by amendment is indicated in the text by tags \square_{A1} \square_{A1} .

\square_{A1} This document supersedes EN 1865-1:2010 \square_{A1} .

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

\square_{A1} This European Standard is a part of EN 1865, *Patient handling equipment used in road ambulances*, which consists of the following parts:

- *Part 1: General stretcher systems and patient handling equipment* [the present document];
- *Part 2: Power assisted stretcher*,
- *Part 3: Heavy duty stretcher*,
- *Part 4: Foldable patient transfer chair*,
- *Part 5: Stretcher support*. \square_{A1}

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

This European Standard incorporates specifications for:

- main stretcher – undercarriage;
- chair stretcher;
- transfer mattress;
- carrying sheet;
- pick up stretcher;
- vacuum mattress and pump;
- long spinal board;
- foldable carrying chair;
- non-foldable carrying chair.

Stretcher systems and patient handling equipment covered by this standard EN 1865-1 are for use in road ambulances.

In this standard reference is made to [A1](#) EN 1789:2007+A2:2014 [A1](#) which specifies design requirements and test methods for road ambulances, which are relevant for checking requirements for such handling equipment.

NOTE Standardisation work will continue with the aim of ensuring the safe transfer of patients and equipment without compromising continuity of patient care and the safety of staff.

EN 1865-1:2010+A1:2015 (E)**1 Scope**

This European Standard defines minimum requirements for the design and performance of stretchers and other patient handling equipment used in road ambulances for the handling and carrying of patients. It aims to ensure patient safety and minimize the physical effort required by staff operating the equipment.

2 Normative references

The following referenced documents are indispensable for the application 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 597-1:1994 ^{A1}, *Furniture - Assessment of the ignitability of mattresses and upholstered bed bases - Part 1: Ignition source: Smouldering cigarette*

EN ~~1021-1:2014~~ ^{A1} ~~deleted text~~ ^{A1}

EN 1021-1:2014 ^{A1}, *Furniture - Assessment of the ignitability of upholstered furniture - Part 1: Ignition source smouldering cigarette*

EN 1041:2008+A1:2013 ^{A1}, *Information supplied by the manufacturer of medical devices*

EN 1789:2007+A2:2014 ^{A1}, *Medical vehicles and their equipment - Road ambulances*

EN ISO 14971:2012 ^{A1}, *Medical devices - Application of risk management to medical devices (ISO 14971:2007, Corrected version 2007-10-01)*

EN ISO 15223-1:2012, *Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements (ISO 15223-1:2012)* ^{A1}

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1**main stretcher**

main device for the conveyance of a sick and/or injured person or those in labour with the purpose to transport patients in safety and in comfort whilst facilitating treatment

3.2**chair stretcher**

device designed to handle and carry a patient in a sitting or lying position, including conveying a patient in the vehicle

3.3**transfer mattress**

device intended to facilitate the transfer of the patient from one stretcher to another

3.4**carrying sheet**

special sheet to handle and carry a patient in a lying or sitting position

3.5**pick up stretcher**

lifting device, intended to be used for movement of seriously injured people on to other transport devices

3.6**vacuum mattress**

device intended primarily to provide immobilization for the patient during transportation

3.7**long spinal board**

device designed for lifting and immobilising patients



3.8**foldable carrying chair**

device intended to handle and carry a patient in a sitting position to the road ambulance but not to be used to transport a patient within the ambulance

3.9**non-foldable carrying chair**

device intended to handle and carry a patient in a sitting position to the road ambulance and to be used to transport a patient within the ambulance

4 Requirements**4.1 General**

When lifting and carrying devices are operated and maintained in accordance with manufacturer instructions they shall not present any high level of risk. Any identified risk shall be reduced to an acceptable level by using risk management principles in accordance with  EN ISO 14971:2012  taking account of normal and single fault condition.

Carrying handles on devices for handling of patients shall permit fixation in extended positions.

All equipment for the handling of patients shall be free of any sharp edges. The minimum radius should be 0,5 mm.

All patient restraint-systems shall have a quick release system.

The lying-sitting part shall be made of a strong material which is bacterial resistant, fungal resistant, stain resistant, putrid resistant, easy to clean and disinfect, washable, waterproof and petrol-oil resistant.

4.2 Main stretcher**4.2.1 General**

The main stretcher shall consist of a stretcher part that can be used either alone or in combination with an integrated or detachable undercarriage.

It shall be designed so that the full weight of the patient and the carried stretcher part will only be lifted/carried by the personnel for the minimum period of time.

4.2.2 Dimensions

Dimensions shall be measured from the outermost edges.

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- Stretcher part: length: $(1\ 950^{+20}_{-50})$ mm;
width: (550 ± 20) mm;
height: maximum 300 mm from loading holding assembly to unloaded lying part. This height dimension does not apply to stretchers with monoblock undercarriages. If a monoblock is not available, the stretcher shall be constructed such that it is detachable from the undercarriage. Where a stretcher support is used the measurement shall be taken from the top surface of the stretcher support to the lying part of the stretcher.
- Undercarriage: length and width of the frame of the undercarriage when located in the ambulance shall not exceed length and width of the stretcher part.

4.2.3 Mass

The mass excluding mattress and patient restraints shall not be more than:

- Stretcher part: 23 kg;
- Undercarriage including stretcher: 51 kg max (combined weight);
- Stretcher part with integrated undercarriage: monoblock 45 kg.

NOTE In all cases the mass should be as low as possible.

4.2.4 Loading capacity

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The loading capacity shall be a minimum of 150 kg.

4.2.5 Frame

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4.2.5.1 General

The frame shall be a sturdy lightweight non twisting construction enabling use of cardiopulmonary resuscitation. All corners of the frame shall be radiused for greater safety.

It shall be possible to lock and secure the stretcher and undercarriage against lateral, longitudinal, vertical movements.

All mechanisms shall be constructed to prevent damage to the user and the patient.

4.2.5.2 Stretcher parts

- a) If swing-down side rails are mounted, they shall have a minimum length of 500 mm and a minimum height between 150 mm and 200 mm measured from the top of the stretcher frame to the top of the side rail.
- b) If longitudinal handles are incorporated they shall be fitted to the ends of the longitudinal frame such that they lock and do not twist when they are stowed or in use. They shall be designed to minimise the risk of injuries to hands and wrists when being operated or when the stretcher is carried in a non-horizontal position. The stretcher shall allow the fixation and use of a carrying harness.
- c) The stretcher shall either have a water and scratch resistant paint finish or be manufactured of corrosion resistant material. Both shall be unaffected by disinfectants.
- d) If intended to be used without undercarriage there shall be four wheels with a minimum diameter of 100 mm suitably placed to ensure stability.