BS EN 1865-4:2012

BSI Standards Publication

# Patient handling equipment used in road ambulances

## Part 4: Foldable patient transfer chair

bsi.

...making excellence a habit.™

**National foreword**

This British Standard is the UK implementation of EN 1865-4:2012. Together with BS EN 1865-1:2010, BS EN 1865-2:2010, BS EN 1865-3:2012 and BS EN 1865-5:2012, it supersedes BS EN 1865:2000, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CH/239, Rescue systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.



ISBN 978 0 580 70209 9

ICS 11.160

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 June 2012.

**Amendments issued since publication**

| Date | Text affected |
|---|---|

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

**EN 1865-4**

April 2012

ICS 11.160

Supersedes EN 1865:1999

English Version

# Patient handling equipment used in road ambulances - Part 4: Foldable patient transfer chair

Equipements d´ambulances pour le transport des patients - Partie 4 : Chaise de transport

Krankentransportmittel im Krankenkraftwagen - Teil 4: Klappbare Patiententragesessel

This European Standard was approved by CEN on 25 February 2012.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

# Foreword

This document (EN 1865-4:2012) 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 October 2012, and conflicting national standards shall be withdrawn at the latest by October 2012.

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 1865:1999.

With respect to EN 1865:1999, the following changes have been made:

a) foldable patient transport chairs shall be fitted with a mechanism to assist the descent and/or ascent of steps, to minimise the need for manually carrying the patient and chair;

b) the mass was changed from 10 kg to no more than 15 kg;

c) the patient restraint-systems shall secure the patient, but at the same time shall permit treatment of the patient;

d) the standard has been modified/integrated to meet the Medical Device Directive 93/42/EEC requirements.

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.

This European Standard is a part of EN 1865, *Patient handling equipment used in road ambulances*, which will consist in the future of the following parts:

— *Part 1: General stretcher systems and patient handling equipment*;

— *Part 2: Power assisted stretcher*;

— *Part 3: Heavy duty stretcher*;

— *Part 4: Foldable patient transfer chair*;

— *Part 5: Stretcher support*.

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, 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.

# 1 Scope

This European Standard defines the minimum requirements for the design and performance of foldable patient transfer chairs, which are used for the conveyance of patients to and/or from road ambulances. It aims to ensure patient safety and to minimize the physical effort required by staff operating the equipment.

# 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 980, *Symbols for use in the labelling of medical devices*

EN 1021-1, *Furniture — Assessment of the ignitability of upholstered furniture — Part 1: Ignition source smouldering cigarette*

EN 1041, *Information supplied by the manufacturer of medical devices*

EN 1865-1:2010, *Patient handling equipment used in road ambulances — Part 1: General stretcher systems and patient handling equipment*

EN ISO 14971, *Medical devices — Application of risk management to medical devices (ISO 14971)*

# 3 Terms and definitions

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

**3.1**
**foldable patient transfer chair**
device designed to transfer a patient in a sitting position to the road ambulance, but not to be used to transport a patient within the ambulance

# 4 Requirements

## 4.1 General

These chairs shall be fitted with a mechanism to assist the descent and/or ascent of steps in order to minimise the need for manual transportation of the patient and chair.

NOTE Examples of mechanisms to assist the descent and/or ascent of stairs are: rolling track belts that span one or more steps and include a means to slow the descent of the chair; a series of rotating wheels that spans each individual step so as to descend/ascend one step at a time.

When foldable patient transfer chairs are operated and maintained in accordance with manufacturer instructions, they should 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 in normal and single fault condition.

Handles on devices shall lock in their extended positions.

All equipment for the handling of patients shall be free of any sharp edges or deformation that could cause injury to persons or damage to other equipment.

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

Patient restraint-systems shall secure the patient, but at the same time shall permit treatment of the patient.

### 4.2 Dimensions

The dimensions of the foldable patient transfer chair in open position shall be as follows:

— The seat: minimum height of 300 mm, measured from the ground;

maximum height of 550 mm, measured from the ground;

minimum width of 330 mm;

minimum depth of 350 mm;

— The backrest: minimum height of 395 mm, measured from the seat;

minimum width of 300 mm.

### 4.3 Mass

The mass shall be not more than 15 kg.

NOTE The mass should be as low as possible.

### 4.4 Loading capacity

The loading capacity shall be a minimum of 150 kg.

### 4.5 Frame

The frame of the foldable patient transfer chair shall be a sturdy, lightweight construction. It shall be furnished with 2 non-slip handles on the lower frame, and 2 non-slip handles on the top frame. It shall also have a footrest and a minimum of two wheels of a diameter 100 mm minimum at the rear. It shall be possible to store the foldable transfer chair in a folded position.

### 4.6 Seat and Backrest

The patient seat and backrest shall be made of a strong material which is bacteria resistant, fungi resistant, stain resistant, putrid resistant, easy to clean, washable, waterproof and petrol-oil resistant.

### 4.7 Restraint system

There shall be at least two quick-release patient restraints.

### 4.8 Flammability — toxicity burning gases

There shall be no progressive smouldering or flaming ignition when tested in accordance with EN 1021-1.

### 4.9 Deformation of the frame

There shall be no remaining deformation of the frame when tested in accordance with EN 1865-1:2010, 5.8.1.

### 4.10 Locking

The hinges and locks shall not open spontaneously or bend.

### 4.11 Deformation of the backrest lying-sitting area

There shall be no remaining deformation of the backrest and lying-sitting area when tested in accordance with EN 1865-1:2010, 5.8.1.

## 5 Marking

The foldable transfer chair covered by this European Standard shall be labelled in accordance with EN 980 and EN 1041.

# Annex ZA
(informative)

## Relationship between this European Standard and the Essential Requirements of EU Directive 93/42/EEC on Medical Devices

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 93/42/EEC on Medical Devices.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

**Table ZA.1— Correspondence between this European Standard and Directive 93/42/EEC on Medical devices**

| Clause(s)/sub-clause(s) of this EN | Essential Requirements (ERs) of Directive 93/42/EEC | Qualifying remarks/Notes |
|---|---|---|
| 4.6, 4.8 | 7.1 | **Covered as far as the first and second indents are concerned except for toxicity** |
| 4.6 | 7.3 | |
| 4, all clauses | 9.2 | **Covered for the risk of injury in connection with physical features** |
| 4.8 | 9.3 | |
| 4, all clauses | 12.7.1 | |
| **5** | **13** | |

**WARNING —** Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

*This page deliberately left blank*

*This page deliberately left blank*

# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards -based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

**PLUS** is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email bsmusales@bsigroup.com.

**BSI Group Headquarters**

389 Chiswick High Road London W4 4AL UK

## Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Copyright



## Useful Contacts:

**Customer Services**
**Tel:** +44 845 086 9001
**Email (orders):** orders@bsigroup.com
**Email (enquiries):** cservices@bsigroup.com

**Subscriptions**
**Tel:** +44 845 086 9001
**Email:** subscriptions@bsigroup.com

**Knowledge Centre**
**Tel:** +44 20 8996 7004
**Email:** knowledgecentre@bsigroup.com

**Copyright & Licensing**
**Tel:** +44 20 8996 7070
**Email:** copyright@bsigroup.com

bsi.

...making excellence a habit.™