Ambulancer og ambulanceudstyr – Ambulancer

Medical vehicles and their equipment – Road ambulances
DS/EN 1789 + A1
København
DS projekt: M247941
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Medical vehicles and their equipment - Road ambulances

This European Standard was approved by CEN on 24 February 2007 and includes Amendment 1 approved by CEN on 6 March 2010.

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Foreword

This document (EN 1789:2007+A1:2010) 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of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

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 2010-03-06.

This document supersedes EN 1789:2007.

The start and finish of text introduced or altered by amendment is indicated in the text by tags.

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.

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 and United Kingdom.
1 Scope

This European Standard specifies requirements for the design, testing, performance and equipping of road ambulances used for the transport and care of patients. It contains requirements for the patient’s compartment.

This European Standard does not cover the requirements for approval and registration of the vehicle and the training of the staff which is the responsibility of the authority/authorities in the country where the ambulance is to be registered.

This European Standard is applicable to road ambulances capable of transporting at least one person on a stretcher.

Requirements are specified for categories of road ambulances based in increasing order of the level of treatment that can be carried out. These are the patient transport ambulance (types A₁, A₂), the emergency ambulance (type B) and the mobile intensive care unit (type C).

This European Standard gives general requirements for medical devices carried in road ambulances and used therein and outside hospitals and clinics in situations where the ambient conditions can differ from normal indoor conditions.

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 3-7, Portable fire extinguishers — Part 7: Characteristics, performance requirements and test methods

EN 420, Protective gloves — General requirements and test methods

EN 455-1, Medical gloves for single use — Part 1: Requirements and testing for freedom from holes

EN 455-2, Medical gloves for single use — Part 2: Requirements and testing for physical properties

EN 471:2003, High-visibility warning clothing for professional use — Test methods and requirements

EN 737-1:1998, Medical gas pipeline systems — Part 1: Terminal units for compressed medical gases and vacuum

EN 737-3:1998, Medical gas pipeline systems — Part 3: Pipelines for compressed medical gases and vacuum

EN 739, Low-pressure hose assemblies for use with medical gases

EN 794-3, Lung ventilators — Part 3: Particular requirements for emergency and transport ventilators

EN 980, Graphical symbols for use in the labelling of medical devices

EN 1041, Information supplied by the manufacturer with medial devices

EN 1865, Specifications for stretchers and other patient handling equipment used in road ambulances

EN 12470-1, Clinical thermometers — Part 1: Metallic liquid-in-glass thermometers with maximum device

EN 13544-1, Respiratory therapy equipment — Part 1: Nebulizing systems and their components

EN 14052, High performance industrial helmets


EN 60068-2-64, Environmental testing — Part 2: Test methods — Test Fh: Vibration, broad-band random (digital control) and guidance (IEC 60068-2-64:1993 + Corrigendum 1993)

EN 60601-1 (all parts), Medical electrical equipment

EN 60601-2 (all parts), Medical electrical equipment

EN 60601-2-4, Medical electrical equipment — Part 2-4: Particular requirements for the safety of cardiac defibrillators (IEC 60601-2-4:2002)


EN ISO 9919, Medical electrical equipment — Particular requirements for the basic safety and essential performance of pulse oximeter equipment for medical use (ISO 9919:2005)


EN ISO 14971, Medical devices — Application of risk management to medical devices (ISO 14971:2007)

prEN ISO 15002, Flow-metering devices for connection to terminal units of medical gas pipeline systems (ISO/DIS 15002:2006)

EN ISO 19054, Rail systems for supporting medical equipment (ISO 19054:2005)

EN ISO 20345, Personal protective equipment — Safety footwear (ISO 20345:2004)

EN ISO 21647, Medical electrical equipment — Particular requirements for the basic safety and essential performance of respiratory gas monitors (ISO 21647:2004)
IEC 60364-7-708, *Electrical installations of buildings — Part 7: Requirements for special installations or locations. Section 708 — Electrical installations in caravan parks and caravans*¹)

ISO 3795, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*


### 3 Terms and definitions

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

#### 3.1 patient and emergency patient

**3.1.1 patient**

person whose condition requires appropriately trained personnel to provide medical care and/or suitable transport

**3.1.2 emergency patient**

patient who through sickness, injury or other circumstances is in immediate or imminent danger to life unless emergency treatment and/or monitoring and suitable transport to diagnostic facilities or medical treatment is provided

#### 3.2 ambulance

vehicle or craft intended to be crewed by a minimum of two appropriately trained staff for the provision of care and transport of at least one stretchered patient

#### 3.3 types of road ambulances²)

**3.3.1 type A: patient transport ambulance**

road ambulance designed and equipped for the transport of patients who are not expected to become emergency patients.

Two types of patient transport ambulance exist:

- type A₁: suitable for transport of a single patient;
- type A₂: suitable for transport of one or more patient(s) (on stretcher(s) and/or chair(s))

**3.3.2 type B: emergency ambulance**

road ambulance designed and equipped for the transport, basic treatment and monitoring of patients

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¹) IEC/TC 64 “Electrical installations and protection against electric shock” is developing the revision of IEC 60364-7-708. The draft is presently at the DIS stage. The standard, when ready, will be published as the first edition of the new section 7-721 “Electrical installations in caravans and motor caravans”.

²) Road ambulances are road vehicles which comply with type approval for special use vehicles according to Directive 70/156/EEC in the last applicable amended version.