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Medical vehicles and their equipment - Air ambulances -
Part 1: Requirements for medical devices used in air
ambulances

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13718-1:2014+A1:2020 sisaldab Euroopa standardi EN 13718-1:2014+A1:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 13718-1:2014+A1:2020 consists of the English text of the European standard EN 13718-1:2014+A1:2020.
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EUROPEAN STANDARD

EN 13718-1:2014+A1

NORME EUROPÉENNE

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English Version

Medical vehicles and their equipment - Air ambulances - Part 1: Requirements for medical devices used in air ambulances

Véhicules sanitaires et leur équipement - Ambulances
aériennes - Partie 1: Exigences pour les dispositifs
médicaux utilisés dans les ambulances aériennes

Medizinische Fahrzeuge und ihre Ausrüstung -
Luftfahrzeuge zum Patiententransport - Teil 1:
Anforderungen an medizinische Geräte, die in
Luftfahrzeugen zum Patiententransport verwendet
werden

This European Standard was approved by CEN on 25 July 2014 and includes Amendment 1 approved by CEN on 16 December 2019.

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

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European foreword

This document (EN 13718-1:2014+A1:2020) 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of an identical text or by endorsement, at the latest by October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

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

This document includes Amendment 1 approved by CEN on 2019-12-16.

This document supersedes ^{A1} EN 13718-1:2014. ^{A1}

The start and finish of text introduced or altered by amendment is indicated in the text by tags ^{A1} ^{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, see informative Annex ZA, which is an integral part of this document.

EN 13718-1:2008 has been technically revised. The following points represent the most important changes in the revision:

- a) normative references were updated;
- b) the following terms and definitions were deleted: 3.3 "HEMS flight", 3.4 "air ambulance flight", 3.5 "non-dedicated aircraft for patient transportation", 3.6 "HICAMS flight", 3.7 "fixed wing air ambulance", 3.10 "interchangeability", 3.11 "flight crew", 3.12 "medical crew";
- c) a new Subclause 4.5.4 "Medical devices with 230 V AC power input" was introduced;
- d) Subclause 4.4.5 "Inverters" was deleted;
- e) Subclause 4.5.4 "Pneumatic power supply" (now Subclause 4.6.4) was revised;
- f) Subclause 4.8 "Fire resistance" (now Subclause 4.9) was revised;
- g) unclear issues were clarified in this part of the standard and between the two parts of the standard (requirements for patient's compartment illumination, respectively);
- h) the standard was modified/integrated to meet the Medical Devices Directive 93/42/EEC requirements.

EN 13718 consists of the following parts, under the general title: *Medical vehicles and their equipment — Air ambulances*:

- *Part 1: Requirements for medical devices used in air ambulances;*
- *Part 2: Operational and technical requirements for air ambulances.*

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, Republic of North Macedonia, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This part of EN 13718 gives minimum requirements for interfaces and compatibility of medical devices used in air ambulances. The standards work was called for by the EU Commission by a mandate from the Medical Devices Directive (see Bibliography and Annex ZA).

This part of EN 13718 is supplementary to several other European Standards and gives requirements for medical devices when used in situations where the ambient conditions differ from the normal indoor conditions prevailing within the health care system. Several specific requirements are related to the conditions prevailing in air ambulances. The requirements that are set are carefully selected to ensure interoperability and continuous patient care.

The medical devices are being used by the services in air ambulances. Air ambulances carry medical devices as well as medicinal products and rescue equipment to be used by medical personnel.

The medical devices need to conform to the applicable essential requirements in the Medical Devices Directive. The essential requirements are listed in Annex I of the Medical Devices Directive (MDD). Annex ZA lists the essential requirements that are addressed by the identified clauses of this European Standard.

The environmental conditions for medical devices used in air ambulances are different from those expected in a normal hospital environment. In particular, this implies environmental conditions such as temperature and humidity, vibration and shock caused by movement of the air ambulances, variable atmospheric pressures and electromagnetic disturbances between the air ambulances and the medical device.

1 Scope

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

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.

2 Normative references

A1 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. **A1**

A1 Deleted text **A1**

A1 EN 13718-2:2015+A1:2020, *Medical vehicles and their equipment — Air ambulances — Part 2: Operational and technical requirements of air ambulances* **A1**

EN 60068-2-31:2008, *Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens*

A1 EN 60529:1991/A2:2013, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989/A2:2013)* **A1**

A1 EN 60601-1:2006+Cor.:2010+A1:2013, *Medical electrical equipment — Part 1: General requirements for basic safety and essential performance (IEC 60601-1:2005+ Cor.:2006 + Cor.:2007 + A1:2012)* **A1**

EN ISO 407:2004, *Small medical gas cylinders - Pin-index yoke-type valve connections (ISO 407:2004)*

A1 EN ISO 5359:2014+A1:2017, *Anaesthetic and respiratory equipment — Low-pressure hose assemblies for use with medical gases (ISO 5359:2014+Amd 1:2017)* **A1**

A1 EN ISO 10297:2014+A1:2017, *Gas cylinders — Cylinder valves — Specification and type testing (ISO 10297:2014, Corrected Version 2014-11-01 + Amd.1:2017)* **A1**

EN ISO 10524-1:2006, *Pressure regulators for use with medical gases — Part 1: Pressure regulators and pressure regulators with flow-metering devices (ISO 10524-1:2006)*

A1 EN ISO 10524-3:2006+Amd 1:2013, *Pressure regulators for use with medical gases — Part 3: Pressure regulators integrated with cylinder valves (ISO 10524-3:2005+A1:2013)* **A1**

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

EN ISO 15002:2008, *Flow-metering devices for connection to terminal units of medical gas pipeline systems (ISO 15002:2008)*

A1 Deleted text **A1**

ISO 7000:2014, *Graphical symbols for use on equipment — Registered symbols*

RTCA DO-160G:2010,¹⁾ Environmental Conditions and Test Procedures for Airborne Equipment

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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>

3.1

air ambulance

aircraft designed to be normally staffed by two medical personnel equipped and intended for the transportation of at least one stretcher patient who will receive medical treatment during transport

3.2

interface

means or place of interaction between one or more of the medical devices, the ambient conditions, the user, the patient, and when relevant, the various kinds of ambulances

3.3

interoperability

facility to connect various medical devices that are fixed to patients into connections of associated medical devices including the possibility of connecting powered medical devices to various kinds of ambulances

3.4

medical device

instrument, apparatus, appliance, material or other article, whether used alone or in combination, including the software necessary for its proper application, intended by the manufacturer to be used for human beings for the purpose of diagnosis, prevention, monitoring, treatment or alleviation of disease and injury

3.5

portable

term referring to transportable equipment that, once installed and placed into service, is intended to be moved from one location to another while being carried by one or more persons

Note 1 to entry: Equipment can refer to accessories or equipment parts.

Note 2 to entry: See the taxonomy in the rationale for Definition 3.63 in EN 60601-1:2006/A1:2013.

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