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Aircraft ground support equipment - Specific requirements - Part 7: Aircraft movement equipment

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12312-7:2020 sisaldab Euroopa standardi EN 12312-7:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 12312-7:2020 consists of the English text of the European standard EN 12312-7:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 14.10.2020.	Date of Availability of the European standard is 14.10.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Aircraft ground support equipment - Specific requirements - Part 7: Aircraft movement equipment

Matériel au sol pour aéronefs - Exigences particulières - Partie 7 : Matériels de déplacement des aéronefs

Luftfahrt-Bodengeräte - Besondere Anforderungen - Teil 7: Luftfahrzeug-Schleppgeräte

This European Standard was approved by CEN on 7 September 2020.

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.

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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 12312-7:2020) has been prepared by Technical Committee CEN/TC 274 “Aircraft ground support equipment”, 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 April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

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 supersedes EN 12312-7:2005+A1:2009.

EN 12312, *Aircraft ground support equipment — Specific requirements*, consists of the following parts:

— *Part 1: Passenger stairs*;

— *Part 2: Catering vehicles*;

— *Part 3: Conveyor belt vehicles*;

— *Part 4: Passenger boarding bridges*;

— *Part 5: Aircraft fuelling equipment*;

— *Part 6: Deicers and de-icing/anti-icing equipment*;

— *Part 7: Aircraft movement equipment* (this document);

— *Part 8: Maintenance or service stairs and platforms*;

— *Part 9: Container/Pallet loaders*;

— *Part 10: Container/Pallet transfer transporters*;

— *Part 11: Container/Pallet dollies and loose load trailers*;

— *Part 12: Potable water service equipment*;

— *Part 13: Lavatory service equipment*;

— *Part 14: Disabled/incapacitated passenger boarding vehicles*;

— *Part 15: Baggage and equipment tractors*;

— *Part 16: Air start equipment*;

— *Part 17: Air conditioning equipment*;

— *Part 18: Nitrogen or Oxygen units*;

— *Part 19: Aircraft jacks, axle jacks and hydraulic tail stanchions*;

— *Part 20: Electrical ground power units*.

Annexes A and C are informative, Annex B is normative.

The main changes compared to the previous edition EN 12312-7:2005+A1:2009 are:

a) Amendment A1:2009 was incorporated;

b) the Introduction was updated in relation to the deviation from recommended criteria;

c) the Scope was updated to cover reasonably foreseeable misuse and an informative reference was added;

d) Clause 2, Normative references, was updated;

e) in Clause 3, Terms and definitions, the definition for vibrations, tractor categories, the operator's seat and the SEAT factor were clarified;

f) the List of hazards was updated to exclude hazards due to traffic and repair and was moved to Annex A;

g) Subclause 5.3 for the requirements of seats was added.

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 2006/42/EC on machinery.

For relationship with EU Directive 2006/42/EC on machinery, see informative Annex ZA, which is an integral part of this document.

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

Introduction

This document specifies health and safety requirements, as well as some functional and performance requirements for aircraft movement equipment intended for use on all aircraft types commonly in service in civil air transport.

The minimum essential criteria are considered to be of primary importance in providing safe, serviceable, economical and practical aircraft movement equipment. Deviations should occur only after careful consideration, extensive testing, risk assessment and thorough service evaluation have shown alternative methods or conditions to be satisfactory. Such deviations are outside the scope of this document and a manufacturer should be able to demonstrate an equivalent level of protection.

This document is a type-C standard as stated in EN ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

— machine manufacturers (small, medium and large enterprises);

— health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

— machine users/employers (small, medium and large enterprises);

— machine users/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e.g. for maintenance (small, medium and large enterprises);

— consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this type-C standard are different from those which are stated in type-A or type-B standards, the provisions of this type-C standard take precedence over the provisions of the other standards for machines that have been designed and built according to the provisions of this type-C standard. Deviations from requirements do not fall within the presumption of conformity given by the document.

1 Scope

This document specifies the technical requirements to minimize the hazards listed in Clause 4 which can arise during the commissioning, operation and maintenance of aircraft movement equipment when used as intended, including misuse reasonably foreseeable by the manufacturer, when carried out in accordance with the specifications given by the manufacturer or his authorized representative. It also takes into account some performance requirements recognized as essential by authorities, aircraft and ground support equipment (GSE) manufacturers as well as airlines and handling agencies.

This document applies to:

— aircraft tractors with driver accommodation,

— remote controlled aircraft movement equipment, and

— attachment devices

used for all operations utilizing aircraft movement equipment, e.g.:

— push back, and

— maintenance towing.

This document does not apply to:

— ground power installations on aircraft tractors,

— fixed ramp integrated systems,

— special towing equipment (e.g. for recovery),

— dispatch towing tractors, or

— tractors with a standing driver.

This document deals with vibrations and noise which are considered as significant hazards. Vibration measurements are dealt with in EN 1915-3:2004+A1:2009. Noise measurements and reduction are dealt with in EN 1915-4:2004+A1:2009.

This document does not deal with hazards in respect to a standard automotive chassis or from hazards arising from potential interaction with other vehicles on the apron.

This part of EN 12312 is not applicable to aircraft movement equipment manufactured before the date of its publication.

This part of EN 12312 is intended to be used in conjunction with EN 1915-1:2013, EN 1915-2:2001+A1:2009, EN 1915-3:2004+A1:2009 (for vehicles) and EN 1915-4:2004+A1:2009.

This part of EN 12312 when used in conjunction with EN 1915-1:2013, EN 1915-2:2001+A1:2009, EN 1915-3:2004+A1:2009 and EN 1915-4:2004+A1:2009 provides the requirements for aircraft movement equipment.

2 Normative references

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.

EN 1005-2:2003+A1:2008, *Safety of machinery - Human physical performance - Part 2: Manual handling of machinery and component parts of machinery*

EN 1175-1:1998+A1:2010, *Safety of industrial trucks - Electrical requirements - Part 1: General requirements for battery powered trucks*

EN 1837:1999+A1:2009, *Safety of machinery - Integral lighting of machines*

EN 1915-1:2013, *Aircraft ground support equipment - General requirements - Part 1: Basic safety requirements*

EN 1915-2:2001+A1:2009, *Aircraft ground support equipment - General requirements - Part 2: Stability and strength requirements, calculations and test methods*

EN 1915-3:2004+A1:2009, *Aircraft ground support equipment - General requirements - Part 3: Vibration measurement methods and reduction*

EN 1915-4:2004+A1:2009, *Aircraft ground support equipment - General requirements - Part 4: Noise measurement methods and reduction*

EN 13490:2001+A1:2008, *Mechanical vibration - Industrial trucks - Laboratory evaluation and specification of operator seat vibration*

EN ISO 2860:2008, *Earth-moving machinery - Minimum access dimensions (ISO 2860:1992)*

EN ISO 2867:2011, *Earth-moving machinery - Access systems (ISO 2867:2011)*

EN ISO 5353:1998, *Earth-moving machinery, and tractors and machinery for agriculture and forestry - Seat index point (ISO 5353:1995)*

EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13849-1:2015, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2015)*

EN ISO 13854:2019, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body (ISO 13854:2017)*

ISO 8267-1:2015, *Aircraft — Tow bar attachment fittings interface requirements — Part 1: Main line aircraft*[1]

ISO 8267-2:2019, *Aircraft — Tow bar attachment fittings interface requirements — Part 2: Regional aircraft*[1]

[1] Document under correction.

ISO 9667:2017, *Aircraft ground support equipment — Tow bars*

ISO 24135-1:2006, *Industrial trucks — Specifications and test methods for operator restraint systems — Part 1: Lap-type seat belts*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1915-1:2013, EN ISO 12100:2010 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at http://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

3.1
aircraft tractor
mobile machinery specially developed and designed for aircraft movement operations

3.2
towbar tractor
aircraft tractor which needs a supplementary apparatus for aircraft movement operations

3.3
towbarless tractor
aircraft tractor which can carry out aircraft movement operations without the aid of any supplementary apparatus

3.4
nose landing gear operation
operation where a tractor or movement device is connected to the nose landing gear of the aircraft in order to move the aircraft

Note 1 to entry: Aircraft and tractor form a manoeuvrable unit.

3.5
main landing gear operation
operation where a tractor is connected to the main landing gear of the aircraft in order to move the aircraft

Note 1 to entry: Steering of the aircraft is performed by the nose landing gear.

3.6
attachment device
apparatus for aircraft movement operations by hand or tractor

EXAMPLE towbar, steering bar

3.7
towbar
device coupled between towbar tractor and towing lug of the nose landing gear