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**Aircraft ground support equipment - Specific
requirements - Part 1: Passenger stairs**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Aircraft ground support equipment - Specific requirements - Part 1: Passenger stairs

Matériel au sol pour aéronefs - Exigences particulières -
Partie 1 : Escaliers passagers

Luftfahrt-Bodengeräte - Besondere Anforderungen - Teil 1:
Fluggasttreppen

This European Standard was approved by CEN on 24 November 2012.

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Contents

Page

Foreword	3
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 List of hazards	8
5 Safety requirements and/or measures	8
5.1 General requirements	8
5.2 Safeguards against falling	9
5.3 Stair flight	10
5.4 Platforms	11
5.5 Guard rails	12
5.6 Raising devices and stability	13
5.7 Controls, monitoring devices and displays for self-propelled passenger stairs	13
5.8 Auxiliary means for powered passenger stairs	13
5.9 Canopy	14
5.10 Automatic levelling system	14
6 Information for use	14
6.1 Marking	14
6.2 Warnings	15
6.3 Instructions	15
7 Verification of requirements	15
7.1 General	15
7.2 Guard rails	16
7.3 Barrier	16
7.4 Platforms and steps	16
Annex A (normative) List of hazards	17
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	20
Bibliography	21

Foreword

This document (EN 12312-1:2013) 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of an identical text or by endorsement, at the latest by July 2013, and conflicting national standards shall be withdrawn at the latest by July 2013.

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 12312-1:2004+A1:2009.

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.

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

- *Part 1: Passenger stairs* (the present document);
- *Part 2: Catering vehicles*;
- *Part 3: Conveyor belt vehicles*;
- *Part 4: Passenger boarding bridges*;
- *Part 5: Aircraft fuelling equipment*;
- *Part 6: Deicers and deicing/anti-icing equipment*;
- *Part 7: Air-craft movement equipment*;
- *Part 8: Maintenance 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.*

The main changes compared to the previous edition are:

- a) Amendment A1:2009 was incorporated;
- b) the Introduction was updated;
- c) the Scope was updated;
- d) Clause 2, Normative references, was updated;
- e) another term and definition was added;
- f) List of hazards was moved to Annex A;
- g) 5.1 was changed;
- h) 5.2, Safeguards against falling, was inserted, thus making it necessary to re-number the following sub-clauses;
- i) 5.3 to 5.10 were changed;
- j) 6.2 and 6.3 were changed;
- k) 7.1 was changed;
- l) 7.2, Guard rails, 7.3, Barrier and 7.4, Platforms and steps, were inserted;
- m) Annex A, Examples of passenger stairs, was deleted;
- n) Annex ZA referring to the Machinery directive 98/37/EC was replaced by Annex ZA referring to the new Machinery directive 2006/42/EC;
- o) the Bibliography was updated.

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 defines health and safety requirements, for stairs including a built-in source of power (see Clause 1, Scope) intended for passengers embarking/disembarking aircraft.

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

This European standard is a Type C standard as defined in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous 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 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 standard.

1 Scope

This European Standard specifies the technical requirements to minimise the hazards listed in Clause 4 which can arise during the commissioning, the operation and the maintenance of passenger stairs 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 authorised representative. It also takes into account some requirements recognised as essential by authorities, aircraft and ground support equipment (GSE) manufacturers as well as airlines and handling agencies.

This European Standard applies to:

- a) self-propelled stairs with seated driver;
- b) pedestrian controlled stairs;
- c) towable stairs equipped with powered means, e.g. for height adjustment, stabilisers;
- d) automatic levelling systems of stairs

for embarking/disembarking of passengers.

"Powered" should also be understood as manual effort stored in springs or hydraulic accumulators, etc., the dangerous action of which can be produced or can continue after the manual effort has ceased or directly applied manual effort for lifting or lowering loads.

Those clauses of this standard that can apply may also be used as a guideline for the design of towable stairs without powered means.

This European Standard does not establish additional requirements for the following:

- 1) persons falling out of an aircraft with the passenger stairs not in position;
- 2) hazards resulting from a moving stairway (escalator);
- 3) upper deck door access.

This part of EN 12312 is not applicable to passenger stairs which are manufactured before the date of publication of this standard by CEN.

This part of EN 12312 when used in conjunction with EN 1915-1, EN 1915-2, EN 1915-3 and EN 1915-4 provides the requirements for passenger stairs.

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 1175-1, *Safety of industrial trucks — Electrical requirements — Part 1: General requirements for battery powered trucks*

EN 1837, *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, *Aircraft ground support equipment — General requirements — Part 3: Vibration measurement methods and reduction*

EN 1915-4, *Aircraft ground support equipment — General requirements — Part 4: Noise measurement methods and reduction*

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

EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

EN ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard rails (ISO 14122-3:2001)*

ISO 7718-1:2009, *Aircraft — Passenger doors interface requirements for connection of passenger boarding bridge — Part 1: Main deck doors*

ISO 16004, *Aircraft ground equipment — Passenger boarding bridge or transfer vehicle — Requirements for interface with aircraft doors*

DIN 51130:2004, *Testing of floor coverings — Determination of the anti-slip property — Workrooms and fields of activities with slip danger, walking method — Ramp test*

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 ISO 7718-1:2009 and the following apply.

3.1

passenger stair

stair designed for the embarking and disembarking of passengers between the aircraft and the ground

3.2

stair flight

series of steps between ground level and platform or between two platforms

3.3

riser height

R

distance between the surface of the tread of one step and the surface of a step above or below when measured perpendicularly between the tread surfaces

3.4

tread depth

T

distance from one step nosing to the adjacent step nosing when measured parallel to the tread surface

3.5

step width

maximum usable width measured along the nose of the step

3.6

handrail height

distance to the top surface of the handrail as measured at the nose of the step or platform and perpendicular to the tread surface