



SLOVENSKI STANDARD
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Podporna oprema na tleh za letalski promet - Splošne zahteve - 1. del: Osnovne varnostne zahteve

Aircraft ground support equipment - General requirements - Part 1: Basic safety requirements

Luftfahrt-Bodengeräte - Allgemeine Anforderungen - Teil 1: Grundlegende Sicherheitsanforderungen

Matériels au sol pour aéronefs - Exigences générales - Partie 1: Caractéristiques fondamentales de sécurité

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49.100

Oprema za servis in vzdrževanje na tleh

Ground service and maintenance equipment

SIST EN 1915-1:2002+A1:2009

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EUROPEAN STANDARD

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Aircraft ground support equipment - General requirements - Part 1: Basic safety requirements

Matériel au sol pour aéronefs - Exigences générales -
Partie 1: Caractéristiques fondamentales de sécurité

Luftfahrt-Bodengeräte - Allgemeine Anforderungen - Teil 1:
Grundlegende Sicherheitsanforderungen

This European Standard was approved by CEN on 6 January 2001 and includes Amendment 1 approved by CEN on 15 February 2009.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

	Page
Foreword.....	4
Introduction	6
1 Scope	6
2 Normative references	7
3 Terms and definitions	9
4 List of hazards.....	10
4.1 Hazards generated by radiation.....	12
5 A1 Safety requirements and/or protective measures A1	17
5.1 General.....	17
5.2 Accommodation for driver and any other person	17
5.3 Driver's cabin	18
5.4 Controls	19
5.5 Monitoring devices and displays	20
5.6 Steering devices	20
5.7 Brakes for travelling purposes or equivalent devices	21
5.8 Wheel assemblies - Centre split rims	22
5.9 Touchable surfaces - Exhaust.....	22
5.10 Lights and reflectors for traffic purposes	22
5.11 A1 Auditory/acoustic warning devices A1	23
5.12 Standing areas and walkways on GSE.....	23
5.13 Steps, crossings	24
5.14 Crushing and shearing points.....	24
5.15 Securing of load.....	24
5.16 Moveable bodies, assemblies and attachments.....	25
5.17 Hydraulic and pneumatic systems.....	25
5.18 Stability and strength	26
5.19 Lifting systems.....	26
5.20 Lifting devices.....	27
5.21 Lifting/work platforms	28
5.22 Operating speeds.....	28
5.23 Towing couplings, drawbars and towbars	28
5.24 Service connections	29
5.25 Electrical design, components and batteries	29
5.26 Fire protection.....	30
6 Information for use	30
6.1 Marking	30
6.2 Instructions	32
7 Verification of safety requirements and/or measures.....	32
Annex A (informative) Trilingual list of GSE.....	33
Annex B (normative) Design of service brakes	34
Annex C (normative) Steps on GSE	36
Annex D (informative) Examples of safety measures to reduce the risk of crushing and shearing under the load carrier when it is not possible to meet the requirements in 5.14	39
Annex E (informative) Examples for hose and fittings installation.....	40

Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC	44
Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	45
Bibliography	46

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[SIST EN 1915-1:2002+A1:2009](https://standards.iteh.ai/catalog/standards/sist/84fa995a-7c04-48c6-81f0-1a66830293e2/sist-en-1915-1-2002a1-2009)

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EN 1915-1:2001+A1:2009 (E)**Foreword**

This document (EN 1915-1:2001+A1:2009) 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 September 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2009-02-15.

This document supersedes EN 1915-1:2001.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $\boxed{A1}$ $\boxed{A1}$.

This European Standard 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).

$\boxed{A1}$ For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. $\boxed{A1}$

EN 1915 - Aircraft ground support equipment - General requirements consists of:

Part 1: Basic safety requirements

Part 2: Stability and strength requirements, calculations and test methods

Part 3: Vibration measurement methods

Part 4: Noise measurement methods.

A further European Standard (EN 12312) in several parts covering specific requirements for different aircraft ground support equipment is in preparation.

The parts of EN 12312 - Aircraft ground support equipment - Specific requirements are:

Part 1: Passenger stairs	Part 12: Potable water service equipment
Part 2: Catering vehicles	Part 13: Lavatory service equipment
Part 3: Conveyor belt vehicles	Part 14: Disabled/Incapacitated passenger boarding equipment
Part 4: Passenger boarding bridges	Part 15: Baggage and equipment tractors
Part 5: Aircraft fuelling equipment	Part 16: Air start equipment
Part 6: Deicers and deicing/antiicing equipment	Part 17: Air conditioning equipment
Part 7: Aircraft movement equipment	Part 18: Oxygen/Nitrogen units
Part 8: Maintenance stairs and platforms	Part 19: Aircraft jacks, axle jacks and hydraulic tail stanchions
Part 9: Container/Pallet loaders	Part 20: Ground power equipment.
Part 10: Container/Pallet transfer transporters	
Part 11: Container/Pallet dollies and loose load Trailers	

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, 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.

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EN 1915-1:2001+A1:2009 (E)**Introduction**

The abbreviation GSE means a complete item of aircraft ground support equipment in the context of this European Standard.

When compiling this European Standard it was assumed that:

- GSE is operated only by competent persons on the airport ramp;
- components without specific requirements are:
 - a) designed in accordance with the usual engineering practice and calculation codes;
 - b) of sound mechanical and electrical construction;
 - c) made of materials with adequate strength and of suitable quality;
 - d) made of materials free of defects;
- materials known to be harmful, such as asbestos, are not used as part of GSE;
- components are kept in good repair and working order, so that the required characteristics remain despite wear;
- by design of the load bearing elements, a safe operation of the machine is assured for loading ranges from zero to 100 % of the rated possibilities and during tests;
- a negotiation took place between the user and the manufacturer concerning particular conditions for the use and places of use of the GSE;
- the place of operation allows a safe use of GSE.

The extent to which hazards are covered is indicated in the scope of this European Standard.

Enumerations in this European Standard are not to be considered exclusive, they are compiled according to the present state of the art.

The minimum essential criteria are considered to be of primary importance in providing safe, economical and usable GSE. Deviation from the recommended methods and conditions should occur only after careful consideration, extensive testing and thorough in service evaluation have shown alternative methods or conditions to be satisfactory.

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

1 Scope

This Part of EN 1915 applies to GSE when used in civil air transport as intended by the manufacturer and contains safety requirements relating to the equipment in general.

This Part of EN 1915 deals with the technical requirements to minimize the hazards listed in clause 4 which can arise during operation and maintenance of GSE as intended by the manufacturer or his authorised representative.

A1 This European Standard is intended to be used in conjunction with EN 1915-2, EN 1915-3 (for vehicles) and EN 1915-4, and with the relevant part of EN 12312. **A1**

This Part of EN 1915 does not apply to unmodified automotive parts when used on GSE for the purpose for which they are designed.

This Part of EN 1915 does not establish additional requirements for the following:

- operation elsewhere than in an airport environment;
- operation in severe conditions, e.g. ambient temperature below -20 °C or over 50 °C, tropical or saturated salty atmospheric environment, strong magnetic or radiation field;
- operation subject to special rules, e.g. potentially explosive atmosphere except as regards operation in the vicinity of an aircraft fuel tank during fuelling operation;
- hazards caused by power supply other than from electrical networks;
- hazards occurring during construction, transportation, commissioning and decommissioning of the GSE;
- hazards caused by wind velocity in excess of the figures given in this European Standard;
- direct contact with food stuffs;
- earthquake, flood, landslide, lightning and more generally any natural catastrophe;
- electromagnetic compatibility (EMC);
- cableless remote control;
- **A1** hazards caused by noise and vibration, see EN 1915-3 and EN 1915-4; **A1**
- hazards caused by errors in the software.

This Part of EN 1915 is not applicable to GSE which are manufactured before the date of publication by CEN of this Standard.

2 Normative references

A1 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. **A1**

A1 *deleted text* **A1**

EN 294, *Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs*

EN 349, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body*

A1 *deleted text* **A1**

EN 1915-1:2001+A1:2009 (E)

EN 811, *Safety of machinery - Safety distances to prevent danger zones being reached by the lower limbs*

EN 894-1:1997, *Safety of machinery - Ergonomic requirements for the design of displays and control actuators - Part 1: General principles for human interactions with displays and control actuators*

EN 894-3:2000, *Safety of machinery - Ergonomic requirements for the design of displays and control actuators - Part 3: Control actuators*

EN 953, *Safety of machinery - Guards - General requirements for the design and construction of fixed and moveable guards*

EN 954-1:1996, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design*

EN 982:1996, *Safety of machinery - Safety requirements for fluid power systems and their components - Hydraulics*

EN 983:1996, *Safety of machinery - Safety requirements for fluid power systems and their components - Pneumatics*

EN 1050:1996, *Safety of machinery - Principles for risk assessment*

Ⓐ₁ deleted text Ⓐ₁

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

Ⓐ₁ 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 12312 (all parts), *Aircraft ground support equipment - Specific requirements* Ⓐ₁

EN 60073, *Basic and safety principles for man-machine interface, marking and identification - Coding principles for indication devices and actuators (IEC 60073:1996)*

Ⓐ₁ EN 60204-1, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2005, modified)* Ⓐ₁

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

Ⓐ₁ EN ISO 3411, *Earth-moving machinery - Physical dimensions of operators and minimum operator space envelope (ISO 3411:2007)* Ⓐ₁

EN ISO 3457, *Earth-moving machinery - Guards and shields - Definitions and specifications (ISO 3457:1986)*

EN ISO 6682:1995, *Earth-moving machinery - Zones of comfort and reach for controls (ISO 6682:1986 including Amendment 1:1989)*

Ⓐ₁ EN ISO 7731:2008, *Ergonomics - Danger signals for public and work areas - Auditory danger signals (ISO 7731:2003)*

EN ISO 12100-1:2003, *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles (ISO 12100-2:2003)*

EN ISO 13732-1, *Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 13850, *Safety of machinery - Emergency stop - Principles for design (ISO 13850:2006)* ^(A1)

ISO 3795:1989, *Road vehicles and tractors and machinery for agriculture and forestry - Determination of burning behaviour of interior materials*

^(A1) ISO 3864 (all parts), *Graphical symbols - Safety colours and safety signs*

ISO 6966-1:2005, *Aircraft ground equipment - Basic requirements – Part 1: General design requirements* ^(A1)

3 Terms and definitions

For the purposes of this Part of EN 1915, the terms and definitions of ^(A1) EN ISO 12100-1:2003 and

EN ISO 12100-2:2003 ^(A1) apply. Additional terms and definitions are:

3.1

aircraft ground support equipment (GSE)

mobile equipment built for the special requirements of aviation

NOTE 1 The "special requirements" result from the specific design and turnaround procedure of aircraft, giving rise to designs not generally used in other areas, in particular:

- GSE for passenger, baggage and cargo handling; <https://standards.iteh.ai/catalog/standards/sist/84fa995a-7c04-48c6-81f0-1a0350293254/en-1915-1-2002a1-2009>
- GSE for aircraft ground handling and servicing; <https://standards.iteh.ai/catalog/standards/sist/84fa995a-7c04-48c6-81f0-1a0350293254/en-1915-1-2002a1-2009>
- mobile parts of passenger boarding bridges (PBB).

NOTE 2 A trilingual list of GSE is given in annex A.

3.2

passenger

any person other than a crew member, an employee of the carrier in an official capacity, an authorized representative of a national authority or a person accompanying a cargo consignment, who is carried aboard a flight handled by the GSE

NOTE Passengers exclusively use those types of GSE specifically designed for their access to and from the aircraft.

3.3

lifting/work platform

platform, cabin or workplace which is designed for lifting loads and/or persons

3.4

workplace

area where operators stay during normal operation e.g. driver/co-driver seats, passageways, fixed walkways, stairs, ladders, platforms

3.5

standing area

area on GSE where a person stands or works in an upright position during operation

EN 1915-1:2001+A1:2009 (E)

- 3.6**
walkway
area on GSE intended to be used by persons moving from one place to another
- 3.7**
stabilizer
support used to maintain and/or increase the stability and capable of supporting and/or levelling the GSE
- 3.8**
friction-type safeguard
safety equipment which restricts or prevents movement of parts in relation to each other by the use of frictional forces e.g. brakes, safety gears
- 3.9**
instructions
documents supplied by the manufacturer or supplier describing the intended use of the GSE and containing information for safe operation, installation, transport and maintenance
- 3.10**
operational use
activities, effects, processes or movements that result from intended use of the GSE
- 3.11**
unintentional movement
any movement without operator's conscious intent e.g. caused by failure of the GSE
- 3.12**
unit load device (ULD)
assembly of components comprising one of either e.g. an aircraft pallet and pallet net, an aircraft pallet, a container with integral pallet or an aircraft container

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4 List of hazards

This list is based on EN 1050:1996 and contains the hazards and hazardous situations, as far as they are dealt with in this European Standard, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce risks. ^{A1} See also the complementary list of hazards in the other parts of EN 1915 and in the different parts of EN 12312. ^{A1}

Table 1 — List of hazards

No corresponding to EN 1050:1996	Hazards identified in Annex A of EN 1050:1996		Relevant clauses in this Part of EN 1915 or EN 1915-2:2001
1	Mechanical hazards due to: – machine parts or workpieces, e.g.: a) shape; b) relative location; c) mass and stability (potential energy of elements which may move under the effect of gravity); d) mass and velocity (kinetic energy of elements in controlled or uncontrolled motion); e) inadequacy of mechanical strength.		EN 1915-2:2001 5.2, 5.3, 5.4
	– accumulation of energy inside the machinery, e.g.: f) elastic elements (springs); g) liquids and gases under pressure; h) the effect of vacuum.		EN 1915-2:2001 5.3.2
1.1	Crushing hazard	Ⓐ₁ deleted text Ⓐ₁	5.2, 5.3.1, 5.3.2, 5.6.1, 5.12.2, 5.14, 5.18
1.2	Shearing hazard		
1.3	Cutting or severing hazard		
1.4	Entanglement hazard		
1.5	Drawing-in or trapping hazard		
1.6	Impact hazard		
1.7	Stabbing or puncture hazard		
1.8	Friction or abrasion hazard		
1.9	High pressure fluid injection or ejection hazard		
2	Electrical hazards due to:		
2.1	Contact of persons with live parts (direct contact)		5.24, 5.25
2.2	Contact of persons with parts which have become live under faulty conditions (indirect contact)		5.25

(continued)