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**Podporna oprema na tleh za letalski promet - Posebne zahteve - 15. del: Vlečni traktorji za prtljago in opremo**

Aircraft ground support equipment - Specific requirements - Part 15: Baggage and equipment tractors

Luftfahrt-Bodengeräte - Besondere Anforderungen - Teil 15: Gepäck- und Geräteschlepper

Matériel au sol pour aéronefs - Exigences particulières - Partie 15 : Tracteurs à bagages et matériel

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English Version

## Aircraft ground support equipment - Specific requirements - Part 15: Baggage and equipment tractors

Matériel au sol pour aéronefs - Exigences particulières  
- Partie 15 : Tracteurs à bagages et matériel

Luftfahrt-Bodengeräte - Besondere Anforderungen -  
Teil 15: Gepäck- und Geräteschlepper

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 274.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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<b>Contents</b>	<b>Page</b>
European foreword.....	3
Introduction .....	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions .....	8
4 List of significant hazards .....	9
5 Safety requirements and/or measures .....	9
5.1 General requirements .....	9
5.2 Driver's accommodation .....	10
5.3 Driver's cabin .....	11
5.4 Seats .....	11
5.5 Controls, monitoring devices and displays.....	12
5.6 Additional operating positions .....	12
5.7 Chassis and body .....	12
5.8 Electrical equipment.....	13
5.9 Vibrations .....	13
5.10 Stability.....	14
5.11 Options.....	14
6 Information for use .....	14
6.1 Marking.....	14
6.2 Additional marking .....	14
6.3 Instructions .....	15
7 Verification of requirements .....	16
7.1 General.....	16
7.2 Tilting platform test.....	16
Annex A (normative) List of hazards.....	18
Annex B (normative) Seated operator enclosure .....	20
Annex C (informative) Whole body vibration .....	22
C.1 Typical sources of whole body vibration for Baggage and Equipment tractors.....	22
C.2 Examples of technical measures suitable for whole body vibration reduction .....	22
Annex D (informative) Recommendations for restraint systems / access gates .....	24
Annex ZA (informative) Relationship between this European Standard and the essential requirements of EU Directive 2006/42/EC aimed to be covered.....	25
Bibliography.....	26

## European foreword

This document (prEN 12312-15:2017) has been prepared by Technical Committee CEN/TC 274 "Aircraft ground support equipment", the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12312-15:2006+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 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.

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 deicing/anti-icing equipment;*
- *Part 7: Aircraft movement equipment;*
- *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 (the present document);*
- *Part 16: Air start equipment;*
- *Part 17: Air conditioning equipment;*
- *Part 18: Nitrogen or Oxygen units;*

**prEN 12312-15:2017 (E)**

- *Part 19: Aircraft jacks, axle jacks and hydraulic tail stanchions;*
- *Part 20: Electrical ground power units.*

The main changes compared to the previous edition EN 12312-15:2006+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;
- d) Clause 2, *Normative references*, was updated;
- e) new definitions for whole body vibration, SEAT factor, categories, restraint system, SIP (Seat Index Point) and enabling device/deadman switch were added;
- f) *list of hazards* was updated to exclude hazards due to traffic and repair and was moved to Annex A;
- g) subclause 5.1, *General requirements* was changed to include stability and strength calculations and site operational requirements;
- h) subclause 5.2, *Driver's accommodation* was completely revised and restraint systems/seat belts were added;
- i) in subclause 5.3, *Driver's cabin* clarification was given regarding the requirements for the intake of emissions;
- j) subclause 5.4, *Seats* has been changed and contains now further requirements for seats and a table giving advice for the selection of seats;
- k) subclause 5.5, *Controls, monitoring devices and displays* was changed and contains a more detailed clarification about the idle speed and the use of a deadman switch;
- l) subclause 5.6, *Additional operating positions* was updated regarding controls and contains now provisions for an interlocking system;
- m) subclause 5.7, *Chassis and body* was changed regarding fuel tank requirements and clarifications for the wheel position within the vehicle's contour;
- n) subclauses 5.9, *Vibrations*, 5.10 *Stability* and 5.11 *Options* were added;
- o) subclause 6.2 *Additional marking* was updated to include a tolerance for the mass of the battery and marking for the operator's seat;
- p) subclause 6.3 was updated to include instructions for the lateral restraint system and a declaration of exhaust emission values and whole body vibrations;
- q) subclause 7, *Verification* was updated and contains now a tilting platform test;
- r) informative Annex A, *Examples of typical baggage and equipment tractors* was deleted and replaced by Annex A *List of hazards*;

- s) normative Annex C, *Minimum space envelope for seated operator enclosure* was moved to Annex B and renamed *Seat operator enclosure*;
- t) informative Annex D, *Examples of couplings* was changed into informative Annex C, *Whole body vibration*;
- u) a new informative Annex D, *Recommendations for restraint systems / access gate* was added;
- v) Annex ZA referring to the Machinery directive 98/37/EC was replaced by Annex ZA referring to the new Machinery directive 2006/42/EC;
- w) the Bibliography was updated.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

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## Introduction

This European Standard defines health and safety requirements for baggage and equipment tractors intended for towing equipment and baggage/cargo trailers on airports.

The minimum essential criteria are considered to be of primary importance in providing safe, serviceable, economical and practical baggage and equipment tractors. 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 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 or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements 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 minimize the hazards listed in Clause 4 which can arise during the commissioning, the operation and the maintenance of baggage and equipment tractors 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 requirements recognized as essential by authorities, aircraft and ground support equipment (GSE) manufacturers as well as airlines and handling agencies.

This European Standard applies to self-propelled baggage and equipment tractors with driver accommodation.

This European Standard does not apply to pedestrian controlled equipment.

This European Standard deals with vibrations which are considered as significant. It does not establish requirements for noise. Vibration measurements are dealt with in EN 1915-3. Noise measurements and reduction are dealt with in EN 1915-4.

This part of EN 12312 is not applicable to baggage and equipment tractors manufactured before the date of its publication.

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 baggage and equipment tractors.

## 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 1175-2, *Safety of industrial trucks — Electrical requirements — Part 2: General requirements of internal combustion engine powered trucks*

EN 1175-3, *Safety of industrial trucks — Electrical requirements — Part 3: Specific requirements for the electric power transmission systems of internal combustion engine powered trucks*

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

EN 1915-2, *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, *Aircraft ground support equipment — General requirements — Part 4: Noise measurement methods and reduction*

EN 13490, *Mechanical vibration — Industrial trucks — Laboratory evaluation and specification of operator seat vibration*

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

**prEN 12312-15:2017 (E)**

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

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

EN ISO 3691-1:2015, *Industrial trucks - Safety requirements and verification - Part 1: Self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks (ISO 3691-1:2011)*

EN ISO 10326-1, *Mechanical vibration - Laboratory method for evaluating vehicle seat vibration - Part 1: Basic requirements (ISO 10326-1)*

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 13850:2015, *Safety of machinery - Emergency stop function - Principles for design (ISO 13850:2015)*

EN ISO 21281:2005, *Construction and layout of pedals of self-propelled sit-down rider-controlled industrial trucks - Rules for the construction and layout of pedals (ISO 21281:2005)*

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

**3 Terms and definitions**

SIST EN 12312-15:2020

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

**3.1****baggage and equipment tractor**

industrial truck, travelling on the ground, intended for use on airports, fitted with coupling means and specially designed to draw trailers

**3.2****rated drawbar pull**

horizontal drawbar pull at the coupling, given in Newton's, as intended by the manufacturer, that the tractor can develop at a specified coupling height whilst travelling on a smooth, dry and horizontal concrete surface

- a) for tractors powered by an internal combustion engine: whilst moving at a uniform speed of not less than 10 % of the rated no-load speed;
- b) for battery powered tractors: which can be sustained continuously for a period of one hour

Note 1 to entry: When establishing the rated drawbar pull, an operator's mass of 80 kg should be taken into account.

**3.3****whole body vibration**

vibration transmitted to the body as a whole through the buttocks of a seated operator

**3.4****SEAT factor**

Seat Effective Amplitude Transmissibility factor

Note 1 to entry: See EN ISO 10326-1.

**3.5****categories****3.5.1****category 4a**

tractor with wheel (mean) diameter below 800 mm and solid rubber or pneumatic tyres

**3.5.2****category 4b**

tractor with wheel (mean) diameter between 800 mm and 1 200 mm and rubber solid or pneumatic tyres

**3.5.3****category 5**

tractor with wheel (mean) diameter between 1 200 mm and 2 000 mm and rubber solid or pneumatic tyres

**3.6****restraint system**

restraint device, system, or enclosure intended to reduce the risk of entrapment of the operator's head and/or torso between the tractor and ground in the event of a tip-over

**3.7****SIP**

Seat Index Point [/standards.iteh.ai/catalog/standards/sist/659b0511-b608-4b57-bb99-dbb1b94966bc4/sist-en-12312-15-2020](https://standards.iteh.ai/catalog/standards/sist/659b0511-b608-4b57-bb99-dbb1b94966bc4/sist-en-12312-15-2020)

Note 1 to entry: See EN ISO 3411.

**3.8****enabling device****deadman switch**

additional manually operated device used in conjunction with a start control and which, when continuously actuated, allows a machine to function

[SOURCE: EN ISO 12100:2010, 3.28.2]

**4 List of significant hazards**

The list of risks and hazards (given at Annex A) is based on EN ISO 12100 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 baggage and equipment tractors and which require action to eliminate or reduce the risk. Not covered are hazards due to the traffic and repair.

**5 Safety requirements and/or measures****5.1 General requirements**

**5.1.1** Baggage and equipment tractors shall conform to the requirements of this standard and the relevant requirements of EN 1915-1, EN 1915-2, EN 1915-3 and EN 1915-4 unless otherwise specified