

საქართველოს სტანდარტი

სახმელეთო დამხმარე აღჭურვილობა საჰაერო ტრანსპორტისათვის -
ნაწილი 2: მოთხოვნები სტაბილურობასა და სიმტკიცეზე, გამოთვლისა და
გამოცდის მეთოდები

საქართველოს სტანდარტებისა და მეტროლოგიის
ეროვნული სააგენტო
თბილისი

სსტ ენ 1915-2:2001+A1:2009/2019

საინფორმაციო მონაცემები

1 შემუშავებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს სტანდარტების დეპარტამენტის მიერ

2 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს 2019 წლის 6 დეკემბრის № 98 განკარგულებით

3 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 1915-2:2001+A1:2009 „სახმელეთო დამხმარე აღჭურვილობა საჰაერო ტრანსპორტისათვის - ნაწილი 2: მოთხოვნები სტაბილურობასა და სიმტკიცეზე, გამოთვლისა და გამოცდის მეთოდები ”

4 პირველად

5 რეგისტრირებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2019 წლის 6 დეკემბერი №268-1.3-016605

დაუშვებელია წინამდებარე სტანდარტის სრული ან ნაწილობრივი კვლავწარმოება, ტირაჟირება და გავრცელება სსიპ საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს ნებართვის გარეშე

English Version

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

Matériel au sol pour aéronefs - Exigences générales -
Partie 2: Prescriptions de stabilité et de résistance
mécanique, calculs et méthodes d'essai

Luftfahrt-Bodengeräte - Allgemeine Anforderungen - Teil 2:
Stand sicherheits- und Festigkeitsanforderungen,
Berechnungen und Prüfverfahren

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

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
Introduction	6
1 Scope	6
2 Normative references	7
3 Terms and definitions	8
4 List of hazards.....	9
5 A1 Safety requirements and/or protective measures A1	9
5.1 General.....	9
5.2 Requirements for the strength calculation of steel constructions.....	9
5.2.1 General remarks.....	9
5.2.2 Loads and load combinations	10
5.2.3 Materials	12
5.2.4 Factors for stress calculations.....	12
5.2.5 Combined stresses.....	12
5.2.6 Fatigue	12
5.3 Requirements for the calculation of safety related machinery parts	13
5.3.1 Chain lifting elements	13
5.3.2 Cylinders, pipes and hoses used in lifting systems	13
5.3.3 Wire rope lifting elements	13
5.3.4 Winches	14
5.3.5 Winching plants	14
5.3.6 Stabilizers	14
5.4 Stability calculations	14
5.4.1 Loads and forces	15
5.4.2 Ground slope.....	15
5.4.3 Elastic deflection	15
5.4.4 Flat tyres	15
5.4.5 Load combinations	15
5.4.6 Stability criteria	16
6 Information for use	16
7 Verification of safety requirements and/or measures.....	16
7.1 General.....	16
7.2 Verification of strength	17
7.2.1 Test loads	17
7.2.2 Test procedure	17
7.2.3 Test results	17
7.3 Verification of stability	18
7.3.1 General.....	18
7.3.2 Test loads	18
7.3.3 Test procedure	18
7.3.4 Test results	19
Annex A (informative) Examples for load geometry.....	20
Annex B (normative) Wind shape factors.....	26
Annex ZA (informative) A1 Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC A1	28

Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	29
Bibliography	30

Foreword

This document (EN 1915-2:2001+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 1915-2:2001.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **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).

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

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:

- components without specific requirements are:
 - a) designed in accordance with the usual engineering practices, welding and calculation codes including all failure modes;
 - b) made of materials with adequate strength and of suitable quality;
 - c) made of materials free of defects;
- 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.

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 specifies the conditions to be taken into consideration when calculating the strength and the stability of GSE according to **EN 1915-1** and the EN 12312 series under intended use conditions. It also specifies general test methods.

NOTE The methods given in this standard demonstrate one way of achieving an acceptable safety level. Methods that produce comparable results may be used.

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

- operation elsewhere than in an airport environment;