

საქართველოს სტანდარტი

სამრეწველო-სატვირთო მანქანების უსაფრთხოება-ელექტრო მოთხოვნები - ნაწილი 3: სპეციფიკური მოთხოვნები შიგაწვის ძრავის სიმძლავრეზე მომუშავე სატვირთო მანქანების ელექტრო სიმძლავრის ტრანსმისიის სისტმებისათვის

საქართველოს სტანდარტებისა და მეტროლოგიის
ეროვნული სააგენტო
თბილისი

სსტ ენ 1175-3:1998+A1:2010/2019

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 1175-3:1998+A1:2010 „სამრეწველო-სატვირთო მანქანების უსაფრთხოება-ელექტრო მოთხოვნები -ნაწილი 3: სპეციფიკური მოთხოვნები შიგაწვის ძრავის სიმძლავრეზე მომუშავე სატვირთო მანქანების ელექტრო სიმძლავრის ტრანსმისიის სისტემებისათვის”

4 პირველად

5 რეგისტრირებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2019 წლის 6 დეკემბერი №268-1.3-016233

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

November 2010

ICS 53.060

Supersedes EN 1175-3:1998

English Version

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

Sécurité des chariots de manutention - Prescriptions électriques - Partie 3: Prescriptions particulières des systèmes à transmission électrique des chariots équipés d'un moteur thermique

Sicherheit von Flurförderzeugen - Elektrische Anforderungen - Teil 3: Besondere Anforderungen für elektrische Kraftübertragungssysteme von Flurförderzeugen mit Verbrennungsmotoren

This European Standard was approved by CEN on 23 November 1997 and includes Amendment 1 approved by CEN on 26 September 2010.

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, Croatia, 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
0 Introduction	6
1 Scope	6
2 Normative references	6
3 Definitions	7
4 A1 List of significant hazards A1.....	8
5 General requirements.....	10
5.1 Contactors	10
5.1.1 D.c. contactors \leq 240 V	10
5.1.2 Other contactors	10
5.2 Electric machines	10
5.2.1 D.c. motors \leq 240 V	10
5.2.2 D.c. generators \leq 240 V	10
5.2.3 Other machines.....	10
5.2.4 Protection	10
5.2.5 Cooling.....	10
5.3 Protection of electrical equipment.....	11
5.3.1 Short circuit and overload	11
5.3.2 Overcurrent protective device.....	11
5.3.3 Installation	11
5.4 Safety related control systems.....	11
5.4.1 Frame faults.....	11
5.4.2 Travel control	11
5.4.3 Electronic travel control system	11
5.4.4 Speed limitation	11
5.4.5 A1 Parameter A1.....	12
5.5 Wiring practices, conductors and electrical components	12
5.5.1 Thermal and mechanical damage	12
5.5.2 Fuel leakage	12
5.5.3 Protection	12
5.5.4 Cross-sectional area	12
5.5.5 Main current cables	12
5.5.6 Wiring that flexes	12
5.5.7 External copper conductors	12
5.5.8 Identification.....	13
5.5.9 Multicore cables.....	13
5.6 Protection against electric shock	13
5.6.1 Electrical enclosures	13
5.6.2 Indirect contact	13
5.6.3 Connection to the frame	13
5.6.4 Control and auxiliary circuits	13
5.6.5 Equipotential bonding	13
5.7 Dielectric test (type test)	14
5.7.1 Performance	14
5.7.2 Electronic components	14
5.7.3 Test voltage	14
5.8 Insulation resistance test (routine test).....	14
5.8.1 Test voltage	14
5.8.2 Insulation resistance of truck.....	14

5.9	[A₁] Electromagnetic radiations	14
5.9.1	Non ionising radiations.....	14
5.9.2	Electromagnetic compatibility [A₁]	14
6	Information for use.....	15
6.1	Electrical diagram.....	15
6.2	Safety checks.....	15
6.3	Minimum marking.....	15
6.4	[A₁] Non-ionising radiation [A₁]	15
Annex A (normative) Generators - Output and test rules.....		16
A.1	Normative references.....	16
A.2	Definitions	16
A.3	Requirements.....	17
A.3.1	Characteristic curves.....	17
A.3.2	Tolerances on characteristic curves	17
A.4	Testing.....	17
A.4.1	Type tests.....	17
A.4.2	Routine tests	17
Annex ZA (informative) [A₁] Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC [A₁]		19

Foreword

This document (EN 1175-3:1998+A1:2010) has been prepared by Technical Committee CEN/TC 150 "Industrial trucks - Safety", the secretariat of which is held by BSI.

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 May 2011, and conflicting national standards shall be withdrawn at the latest by May 2011.

A1 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. **A1**

A1 deleted text **A1**

This document includes Amendment 1, approved by CEN on 2010-09-26.

This document supersedes EN 1175-3:1998.

A1 The main changes compared to the previous version are:

- modification of Annex ZA;
- requirements for radiation and software parameters;
- minor technical changes in 5.4.3 to 5.4.4 and 7.3;
- reference to EN 292-1 be replaced with EN ISO 12100-1:2003, EN 292-2 be replaced with EN ISO 12100-2:2003 and EN 954-1 be replaced with EN ISO 13849-1:2008. **A1**

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

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 European Standard is one of a package of standards for the safety of industrial trucks:

A1 prEN ISO 3691-1, *Industrial trucks — Safety requirements and verification — Part 1: Self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks (ISO/DIS 3691-1:2008)* **A1**

A1 EN 1726-2 **A1** Safety of industrial trucks - Self propelled trucks up to and including 10 000 kg capacity and tractors with a drawbar pull up to and including 20 000 N - Part 2: Additional requirements for trucks with elevating operator position and trucks specially designed to travel with elevated load

A1 EN 1551 **A1** Safety of industrial trucks - Self propelled trucks over 10 000 kg capacity

A1 EN 1459 **A1** Safety of industrial trucks - **A1** Self propelled variable **A1** reach trucks

A1 EN ISO 3691-5, *Industrial trucks — Safety requirements and verification — Part 5: Pedestrian-propelled trucks (ISO 3691-5:2009)* **A1**

[A1] deleted text [A1]

[A1] EN 1757-3 [A1] [A1] Safety of industrial trucks - Pedestrian controlled manual and semi-manual trucks - Part 3: Platform trucks [A1]

[A1] deleted text [A1]

EN 1525 Safety of industrial trucks - Driverless trucks and their systems

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 for 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 1526 Safety of industrial trucks - Additional requirements for automated functions on trucks

[A1] EN 1755 [A1] [A1] Safety of industrial trucks - Operation in potentially explosive atmospheres - Use in flammable gas, vapour, mist and dust [A1]

[A1] EN 12053 [A1] Safety of industrial trucks - Test methods for measuring noise [A1] emissions [A1]

prEN ISO/DIS 13564 Test method for measuring visibility from self-propelled trucks

[A1] EN 13059 [A1] Safety of industrial trucks - Test methods for measuring vibration

[A1] EN 12895 [A1] Industrial trucks - Electromagnetic compatibility

[A1] deleted text [A1]

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, Croatia, 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.