This is a free page sample. Access the full version online.

NSAI Standards

Irish Standard
I.S. EN 1755:2015

Industrial Trucks - Safety requirements and verification - Supplementary requirements for operation in potentially explosive atmospheres

© CEN 2015 No copying without NSAI permission except as permitted by copyright law.

This is a free page sample. Access the full version online.

I.S. EN 1755:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:	*Published:*
EN 1755:2015	2015-11-18

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2015-12-06	53.060
	NOTE: If blank see CEN/CENELEC cover page

NSAI	T +353 1 807 3800	Sales:
1 Swift Square,	F +353 1 807 3838	T +353 1 857 6730
Northwood, Santry	E standards@nsai.ie	F +353 1 857 6729
Dublin 9	W NSAI.ie	W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

National Foreword

I.S. EN 1755:2015 is the adopted Irish version of the European Document EN 1755:2015, Industrial Trucks - Safety requirements and verification - Supplementary requirements for operation in potentially explosive atmospheres

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This is a free page sample. Access the full version online.

This page is intentionally left blank

This is a free page sample. Access the full version online.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1755

November 2015

ICS 53.060

Supersedes EN 1755:2000+A2:2013

English Version

Industrial Trucks - Safety requirements and verification - Supplementary requirements for operation in potentially explosive atmospheres

Chariots de manutention - Prescriptions de sécurité et vérification - Prescriptions supplémentaires pour le fonctionnement en atmosphères explosibles

Sicherheit von Flurförderzeugen - Einsatz in explosionsgefährdeten Bereichen - Verwendung in Bereichen mit brennbaren Gasen, Dämpfen, Nebeln oder Stäuben

This European Standard was approved by CEN on 24 July 2015.

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-CENELEC 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-CENELEC 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, 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 United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

© 2015 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN 1755:2015 E

This is a free page sample. Access the full version online.

Contents

Page

European foreword ... 3

Introduction ... 4

1 Scope ... 6

2 Normative references ... 6

3 Terms and definitions ... 8

4 Safety requirements and/or protective measures ... 11
4.1 General ... 11
4.2 Hot surfaces ... 12
4.3 Safety shutdown ... 13
4.4 Mechanically generated sparks ... 13
4.5 Electrical system ... 14
4.6 Internal combustion engines ... 17
4.7 Electrostatic risks ... 17
4.8 Requirements for brakes, clutches and couplings ... 21
4.9 Requirements for pneumatic systems ... 23
4.10 Category 3G trucks equipped with restricted breathing enclosures “nR” and gas detection systems ... 23
4.11 Flammability of non-metallic materials ... 25

5 Verification of safety requirements and/or protective measures ... 26
5.1 Determination of the maximum surface temperatures ... 26
5.2 Measurement of circuit resistance and capacitance ... 30

6 Information for use ... 32
6.1 General ... 32
6.2 Instruction handbook ... 32
6.3 Marking ... 34
6.4 Warning labels ... 35

Annex A (normative) List of significant hazards ... 36

Annex B (informative) Relationship between zones (area classification) and truck categories ... 37

Annex C (informative) Typical example of cladding of load handling devices ... 38

Annex D (informative) Typical examples of non-conductive surface areas according to 4.7.3.1 39

Annex E (normative) Requirements for transmission belts in accordance with ISO 9563 or ISO 1813 ... 42

Annex F (informative) Significant technical changes between this document and the previous edition of this European Standard ... 43

Annex G (informative) Warning labels for trucks with restricted breathing enclosure(s) ... 47

Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 94/9/EC ... 48

Bibliography ... 51

This is a free page sample. Access the full version online.

European foreword

This document (EN 1755:2015) 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 2016, and conflicting national standards shall be withdrawn at the latest by November 2017.

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 1755:2000+A2:2013.

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.

Informative Annex F provides details of significant technical changes between this document and the previous edition: EN 1755:2000+A2:2013.

This document is one of a series of European Standards for the safety of industrial trucks which are listed in 4.1 and in the Bibliography.

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, 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.

This is a free page sample. Access the full version online.

Introduction

This standard is a type-C standard as stated 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 standard.

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 in accordance with the provisions of this type C standard.

This standard (EN 1755:2015) covers safety requirements and their verification for industrial trucks as defined in ISO 5053-1 that are not covered exhaustively by:

— EN 1459;

— EN 1526;

— EN 1757-3;

— EN ISO 3691-1;

— EN ISO 3691-5;

— EN ISO 3691-6;

NOTE The above-mentioned standards are listed in the Bibliography or in Clause 2.

Assessment of hazards

The industrial truck needs to be designed in such a way that it is fit for its purpose or function and can be adjusted and maintained without putting persons at risk when used under the conditions foreseen (e.g. explosive atmospheres) by the manufacturer.

In order to properly design an industrial truck and to cover all specific safety requirements, the manufacturer will have to identify the hazards that apply to the industrial truck and carry out a risk assessment. The manufacturer will then need to design and construct the industrial truck taking this assessment into account.

The aim of this procedure is to eliminate the risk of accidents throughout the foreseeable lifetime of the machinery, including the phases of assembling and dismantling where risks of accidents could also arise from foreseeable abnormal situations.

In selecting the most appropriate methods, the manufacturer will need to apply the following principles, in the order given here:

— eliminate or reduce risks as far as possible by design (inherently safe machinery design and construction);

— take the necessary protective measures in relation to risks that cannot be eliminated by design;

— inform users of any shortcoming of the protective measures adopted;

— indicate whether any particular training is required;

— specify any need to provide personal protection equipment;

— refer to the appropriate user's document for proper operating instructions.

This is a free page sample. Access the full version online.

Industrial trucks need to be designed to prevent foreseeable misuse wherever possible, if such would engender risk. In other cases, the instructions will need to draw the user's attention to ways shown by experience in which the machinery ought not to be used.

This standard (EN 1755:2015) does not repeat all the technical rules which are state-of-the art and which are applicable to the material used to construct the industrial truck. Reference will also need to be made to EN ISO 12100.

This is a free page sample. Access the full version online.

1 Scope

This European Standard applies to self-propelled and pedestrian propelled manual and semi-manual industrial trucks as defined in ISO 5053-1 including their load handling devices and attachments (hereafter referred to as trucks) intended for use in potentially explosive atmospheres.

NOTE 1 Attachments mounted on the load carrier or on fork arms which are removable by the user are not considered to be a part of the truck.

This European Standard specifies supplementary technical requirements for the prevention of the ignition of an explosive atmosphere of flammable gases, vapours, mists or dusts by industrial trucks of equipment group II and equipment category 2G, 3G, 2D or 3D.

NOTE 2 The relationship between an equipment category (hereafter referred to as category) and the corresponding zone (area classification) is shown in informative Annex B.

This European Standard does not include:

— trucks of equipment group I;

— trucks of equipment group II, equipment category 1;

— trucks intended for use in potentially explosive atmospheres with hybrid mixtures;

— protective systems.

This European Standard is not applicable to trucks intended for use in potentially explosive atmospheres of carbon disulphide (CS_2), carbon monoxide (CO) and/or ethylene oxide (C_2H_4O) due to the special properties of these gases.

This standard is applicable to trucks intended for use in atmospheres with an ambient temperature range of - 20 °C to +40 °C, i.e. trucks built in accordance with this European Standard will be satisfactory to any service conditions within this range unless otherwise specified.

NOTE 3 The ambient temperature range -20 °C to +40 °C is in line with EN ISO 3691-1.

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 1127-1:2011, *Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology*

EN 1149-5, *Protective clothing - Electrostatic properties - Part 5: Material performance and design requirements*

EN 1175-1:1998+A1:2010, *Safety of industrial trucks - Electrical requirements - Part 1: General requirements for battery powered trucks*

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

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

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

SAI GLOBAL

This is a free preview. Purchase the entire publication at the link below:

Product Page

Looking for additional Standards? Visit Intertek Inform Infostore

Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation