



National Standards Authority of Ireland
Údarás um Chaighdeáin Náisiúnta na hÉireann

IRISH STANDARD

I.S. EN 13035-1:2008

ICS 81.100

**MACHINES AND PLANTS FOR THE
MANUFACTURE, TREATMENT AND
PROCESSING OF FLAT GLASS - SAFETY
REQUIREMENTS - PART 1: STORAGE,
HANDLING AND TRANSPORTATION
EQUIPMENT INSIDE THE FACTORY**

National Standards
Authority of Ireland
Northwood, Dublin 9
Ireland

Tel: +353 1 807 3800
Fax: +353 1 807 3838
<http://www.nsai.ie>

Sales

<http://www.standards.ie>

*This Irish Standard was
published under the authority
of the National Standards
Authority of Ireland and
comes into effect on:
18 June 2008*

**NO COPYING WITHOUT NSAI
PERMISSION EXCEPT AS
PERMITTED BY COPYRIGHT
LAW**

© NSAI 2008

Price Code O

Údarás um Chaighdeáin Náisiúnta na hÉireann

This page is intentionally left BLANK.

ICS 81.100

English Version

Machines and plants for the manufacture, treatment and processing of flat glass - Safety requirements - Part 1: Storage, handling and transportation equipment inside the factory

Machines et installations pour la production, le façonnage et la transformation du verre plat - Exigences de sécurité - Partie 1 : Stockage, manutention et transport à l'intérieur de l'usine

Maschinen und Anlagen für die Herstellung, Be- und Verarbeitung von Flachglas - Sicherheitsanforderungen - Teil 1: Einrichtungen zum Lagern, Handhaben und Transportieren innerhalb des Werks

This European Standard was approved by CEN on 28 December 2007.

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: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword.....	3
Introduction	4
1 Scope	4
2 Normative references	4
3 Terms and definitions.....	6
4 List of significant hazards	8
5 Safety requirements and/or protective measures	10
5.1 General.....	10
5.2 Mechanical strength	10
5.3 Angle of lean	11
5.4 Retention of glass.....	11
5.5 Cladding materials.....	13
5.6 Tow bars	13
5.7 Stability of storage equipment	13
5.8 Vacuum-lifting device for use inside the factory.....	16
5.9 Other hazards.....	17
6 Verification of safety requirements and/or protective measures	18
7 Information for use	18
7.1 General.....	18
7.2 Signals and warning devices.....	18
7.3 Accompanying documents.....	18
7.4 Marking	19
Annex A (informative) Overview over equipment for glass storing, handling and transporting.....	21
Annex B (informative) Terminology.....	22
B.1 Referring to glass	22
B.1.1 Glass height 'H'	22
B.1.2 Glass length 'L'	22
B.1.3 Product	22
B.1.4 Cullet	22
B.1.5 Flat glass	22
B.1.6 Substance.....	22
B.1.7 Vent	22
B.2 Referring to storage equipment	23
B.2.1 Attitude of glass in any type of equipment	23
B.2.2 Type of equipment	24
Annex C (informative) Minimum clearances for interfacing equipment.....	39
C.1 Vertical supporting bearers and the grab	39
C.2 Horizontal base bearers and the grab	39
C.3 Horizontal supporting bearers and the grab.....	40
C.4 Interfacing structural (non supporting) equipment and handling device fingers.....	43
C.5 Beam-strap sling and over-the-top grab	43
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC	46
Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	47
Bibliography	48

Foreword

This document (EN 13035-1:2008) has been prepared by Technical Committee CEN/TC 151 “Construction equipment and building material machines — Safety”, the secretariat of which is held by DIN.

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). It is one of a series concerning machinery for the manufacture, treatment and processing of flat glass (see Bibliography).

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

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 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

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.

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 the United Kingdom.

Introduction

This document is a type C standard as stated in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

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 according to the provisions of this type C standard.

In this European Standard it is assumed that:

- negotiation occurs between the manufacturer and the user/purchaser concerning particular conditions of use not dealt with in this standard and specific interfaces consideration (e.g. Annex C – Clearances for interfacing equipment);
- the floors inside the factory used for glass charging and discharging processes are virtually horizontal and without significant asperities.

1 Scope

1.1 This standard contains the requirements for safety for the design and installation of equipment intended for the storage, handling and transportation of flat glass inside the factory as described in Clause 3. It applies to stationary, movable and mobile storage equipment (see 3.2), mechanical and pneumatic handling equipment (see 3.3) and transportation equipment (see 3.4) (see overview in Annex A).

1.2 Additional requirements for dealing with specific hazards due to the use outside the factory are dealt with in prEN 13035-2.

1.3 This standard only deals with the devices which are directly in contact with the glass. Tractors, cranes, hoists and fork lifts are out of the scope as well as parts of other powered vehicles that are not in contact with the glass (see 3.4.1). This standard does not apply to manual handling equipment as defined in 3.3.1.

1.4 This standard deals with all significant hazards, hazardous situations and events relevant to equipment for the storage, handling and transportation of flat glass, when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). This standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards during commissioning, the operation and maintenance. Noise has not been considered to be a significant hazard for any type of equipment in the scope of this standard.

1.5 This document is not applicable to storage, handling or transportation equipment for flat glass inside the factory, which is manufactured before the date of its publication as EN.

2 Normative references

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.

EN 294:1992, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

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](#)
-