# საქართველოს სტანდარტი

მანქანები და მოწყობილობები ფურცვლოვანი მინის წარმოების, დამუშავებისა და გადამუშავებისათვის-უსაფრთხოების მოთხოვნები-ნაწილი 1: მოწყობილობების შენახვა, დამუშავება და ტრანსპორტირება ქარხნის ტერიტორიაზე

საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტო თბილისი

## სსტ ენ 13035-1:2008/2016

### საინფორმაციო მონაცემები

- 1 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს 2016 წლის 1 აპრილის  $\mathbb{N}^{\circ}$  26 და 2016 წლის 1 თებერვლის  $\mathbb{N}^{\circ}$  7 განკარგულებებით
- 2 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 13035-1:2008 "მანქანები და მოწყობილობები ფურცვლოვანი მინის წარმოების, დამუშავებისა და გადამუშავებისათვის-უსაფრთხოების მოთხოვნები-ნაწილი 1: მოწყობილობების შენახვა, დამუშავება და ტრანსპორტირება ქარხნის ტერიტორიაზე"

### 3 პირველად

**4 რეგისტრირებულია** საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2016 წლის 1 აპრილი N268-1.3-8551

# EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 13035-1

March 2008

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**

Forewo	A MA	_
	ord	
	ction	4
1	Scope	4
	Normative references	4
2		
2 3	Terms and definitions	
4 5 5.1 5.2	List of significant hazards	8
5	Safety requirements and/or protective measures	10
5.1	General	
5.2	Mechanical strength	
5.3	Angle of lean	
5.4	Retention of glass	
5.5	Cladding materials	
5.6	Tow bars	
5.7	Stability of storage equipment	
5.8	Vacuum-lifting device for use inside the factory	
. 9	Other hazards	
5.9 5 7.1	Verification of safety requirements and/or protective measures	18
,	Information for use	18
.1	General	
2	Signals and warning devices	
3	Accompanying documents	
	7.000pujg	
	Marking  A (informative) Overview over equipment for glass storing, handling and transporting	19
Annex Annex	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	21 22
Annex Annex 3.1	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	19 21 22
nnex nnex 3.1 3.1.1	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	19 21 22 22
Annex Annex 3.1 3.1.1 3.1.2	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	1921222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	19212222222222
Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	1921222222222222
Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	19212222222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	19212222222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	1921222222222222222223
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2 3.2.1	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
nnex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2 3.2.1	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2.1 3.2.2 Annex 3.1.2	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2 3.2.1 3.2.2 Annex 3.1	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2 3.2.1 3.2.2 Annex 3.1.2 3.2.2	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2.1 3.2.2 Annex 3.1.2 3.2.1 3.2.2	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2.1 3.2.1 3.2.2 Annex 2.1 2.2 2.3 2.4 2.5	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2.1 3.2.1 3.2.2 Annex C.1 C.2 C.3 C.4 C.5	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2.1 3.2.1 3.2.2 Annex 2.1 2.2 2.3 2.4 2.5	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222
Annex Annex 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.2.1 3.2.1 3.2.2 Annex 2.1 2.2 2.3 2.4 2.5	A (informative) Overview over equipment for glass storing, handling and transporting  B (informative) Terminology	192122222222

### **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.

### l Scope

- 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 estationary, 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).
- Additional requirements for dealing with specific hazards due to the use outside the factory are dealt with prEN 13035-2.
- This standard only deals with the devices which are directly in contact with the glass. Tractors, cranes, choists 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