# DIN EN 13035-1:2008-06 (E)

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

## 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