SLOVENSKI STANDARD
SIST EN 357:2001

01-september-2001

Steklo v stavbah - Ognjeodporni zastekljeni elementi s prozornimi in prosojnimi izdelki iz stekla - Razvrġļ anje po poģarni odpornosti

Glass in building - Fire resistant glazed elements with transparent or translucent glass products - Classification of fire resistance

Glas im Bauwesen - Brandschutzverglasungen aus durchsichtigen oder durchscheinenden Glasprodukten -Klassifizierung des Feuerwiderstandes

Verre dans la construction - Eléments de construction vitrés résistant au feu incluant des produits verriers transparent ou translucides - Classification de la résistance au feu

Ta slovenski standard je istoveten z: **EN 357:2000**

ICS:

81.040.20	Steklo v gradbeništvu	Glass in building

SIST EN 357:2001 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 357

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ICS 81.040.20

English version

Glass in building - Fire resistant glazed elements with trannsparent or translucent glass products - Classification of fire resistance

Verre dans la construction - Eléments de construction vitrés résistant au feu incluant des produits verriers transparent ou translucides - Classification de la résistance au feu

Glas im Bauwesen - Brandschutzverglasungen aus durchsichtigen oder durchscheinenden Glasprodukten - Klassifizierung des Feuerwiderstandes

This European Standard was approved by CEN on 8 July 1999.

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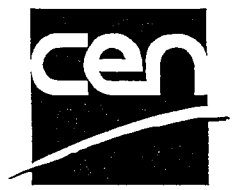

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 357:2000 E

Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 129 "Glass in building", the secretariat of which is held by IBN.

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of an identical text or by endorsement, at the latest by January 2001, and conflicting national standards shall be withdrawn at the latest by January 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies a classification of transparent or translucent glass products for use in appropriate glazed elements intended specially to provide fire resistance. These glass products are described in European Standards on basic and processed glass products.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 572-2, *Glass in building – Basic soda lime silicate glass products – Part 2: Float glass.*

EN 572-3, *Glass in building – Basic soda lime silicate glass products – Part 3: Polished wired glass.*

EN 572-4, *Glass in building – Basic soda lime silicate glass products – Part 4: Drawn sheet glass.*

EN 572-5, *Glass in building – Basic soda lime silicate glass products – Part 5: Patterned glass.*

EN 572-6, *Glass in building – Basic soda lime silicate glass products – Part 6: Wired patterned glass.*

EN 572-7, *Glass in building – Basic soda lime silicate glass products – Part 7: Wired or unwired channel shaped glass.*

EN 1748-1, *Glass in building – Special basic products – Part 1: Borosilicate glasses.*

EN 1748-2, *Glass in building – Special basic products – Part 2: Glass ceramics.*

prEN 1051, *Glass in building – Glass blocks and glass paver units – Definition, requirements, test methods and inspections.*

prEN 1096-1, *Glass in building – Coated glass – Part 1: Definitions and classification.*

prEN 1096-2, *Glass in building – Coated glass – Part 2: Test methods for durability of A, B and S coatings.*

prEN 1096-3, *Glass in building – Coated glass – Part 3: Test method for durability of C and D coatings.*

prEN 1279-1, *Glass in building – Insulating glass units – Part 1: Generalities, dimensional tolerances and rules for the system description.*

prEN 1279-2, *Glass in building – Insulating glass units – Part 2: Long term test method and requirements for moisture penetration.*

prEN 1279-3, *Glass in building – Insulating glass units – Part 3: Initial type testing on gas-filled insulating glass units – Gas leakage rate.*

prEN 1279-4, *Glass in building – Insulating glass units – Part 4: Methods of test for the physical attributes of edge seals.*

prEN 1363-1, *Fire resistance tests – Part 1: General requirements.*

prEN 1363-2, *Fire resistance tests – Part 2: Alternative and additional procedures.*

prEN 1364-1, *Fire resistance tests for non-loadbearing elements – Part 1: Walls.*

prEN 1364-2, Fire resistance tests for non-loadbearing elements – Part 2: Ceilings.

prEN 1364-3, *Fire resistance tests for non-loadbearing elements – Part 3: Curtain walling.*

prEN 1365-1, *Fire resistance tests for loadbearing elements – Part 1: Walls.*

prEN 1365-2, *Fire resistance tests for loadbearing elements – Part 2: Floors and roofs.*

prEN 1634-1, *Fire resistance tests for door and shutter assemblies – Part 1: Fire doors and shutters.*

prEN 1634-3, *Fire testing of door and shutter assemblies – Part 3: Smoke control doors and shutters.*

prEN 1863, *Glass in building – Heat strengthened soda lime silicate glass.*

prEN 12150, *Glass in building – Thermally toughened soda lime silicate safety glass.*

prEN 12337, *Glass in building – Chemically strengthened soda lime silicate glass.*

prEN 12725, *Glass in building – Glass block walls – Design, dimensions and performance.*

prEN 13024-1, *Glass in building – Thermally toughened borosilicate safety glass – Part 1: Specifications.*

prEN 13501-2[1)], *Fire classification of construction products and building elements – Part 2: Classification using test data from fire resistance tests.*

EN ISO 12543-1, *Glass in building – Laminated glass and laminated safety glass – Part 1: Definitions and description of component parts (ISO 12543-1:1998).*

EN ISO 12543-2, *Glass in building – Laminated glass and laminated safety glass – Part 2: Laminated safety glass (ISO 12543-2:1998).*

EN ISO 12543-3, *Glass in building – Laminated glass and laminated safety glass – Part 3: Laminated glass (ISO 12543-3:1998).*

EN ISO 12543-4, *Glass in building – Laminated glass and laminated safety glass – Part 4: Test methods for durability (ISO 12543-4:1998).*

EN ISO 12543-5, *Glass in building – Laminated glass and laminated safety glass – Part 5: Dimensions and edge finishing (ISO 12543-5:1998).*

EN ISO 12543-6, *Glass in building – Laminated glass and laminated safety glass – Part 6: Appearance (ISO 12543-6:1998).*

ISO 834, *Fire resistance tests – Elements of building construction.*

3 Definitions

For the purposes of this European Standard the following definitions apply:

3.1
Fire resistant glazed element[2)]:
an element of construction containing one or more transparent or translucent glass products with mounting supports, sealing and fixing material including all particular constructional components proven and classified by testing[3)]

[1)]This standard is in preparation

[2)] e. g. partitions, doors, framed glazing

[3)] In accordance with the relevant clauses of the appropriate fire resistance test standards.

3.2
Fire resistance
a property defined in the following terms:

3.2.1 R
Loadbearing capacity
the ability of the element of construction to withstand fire exposure, on one or more faces, for a period of time without any loss of structural stability

3.2.2 E
Integrity
the ability of the element of construction with a separating function to withstand fire exposure on one side only, without the transmission of fire to the non-fire side as a result of the passage of significant quantities of flames or hot gases from the fire to the non-fire side, thereby causing ignition of the non-fire exposed surface or any materials adjacent to that surface

3.2.3 W
Reduction of radiation
the ability of the element of construction with a separating function to withstand fire exposure from one side only for a period of time, while the measured radiated heat in front of the glazing is below a specified level

3.2.4 I
Insulation

the ability of the element of construction to withstand fire exposure on one side only, without the transmission of fire as a result of significant conduction of heat from the fire side to the non-fire side, thereby causing ignition of the non-fire exposed surface or any material in contact with that surface and the ability to provide a barrier to heat sufficient to protect people near the element of construction for the relevant classification period

3.2.5 S
Smoke control
the ability of the element of construction to reduce the passage of hot or cold gases or smoke from one side to the other

3.2.6 C
Self closing
the ability of the fire door or shutter to close an opening by means of a closing mechanism each time the door or shutter is opened or in the event of smoke

4 Glass products

Products according to this standard include the following (they are specified in the documents referred to; see also Annex B)

- float glass (see EN 572-2)
- polished wired glass (see EN 572-3)
- drawn sheet glass (see EN 572-4)
- patterned glass (see EN 572-5)
- wired patterned glass (see EN 572-6)
- wired or unwired channel shaped glass (see EN 572-7)
- glass blocks and paver units (see prEN 1051)
- glass block walls (see prEN 12725)
- borosilicate glasses (see prEN 1748-1)
- glass ceramics (see prEN 1748-2)

– heat strengthened soda lime silicate glass (see prEN 1863)
– laminated glass and laminated safety glass (see EN ISO 12543-1 to EN ISO 12543-6)
– thermally toughened soda lime silicate safety glass (see prEN 12150)
– chemically strengthened soda lime silicate glass (see prEN 12337)
– heat soaked thermally toughened safety glass (see annex B)
– thermally toughened borosilicate safety glass (see prEN 13024-1)
– earth alkaline silicate glass (see Annex B)[2)]

in single or multiple glazing (see prEN 1279-1 to prEN 1279-4), as coated (see prEN 1096-1 to prEN 1096-3) or uncoated glass.

NOTE 1: These products can only be classified as being appropriate for use in fire resistant glazed elements if they have been successfully tested in accordance with the test procedures referred to in 6.2.2.

NOTE 2: Annex A gives some variations of these products.

5 Classification

5.1 General

The fire resistance classification shall be related to the complete glazed element which incorporates the glass products and all given dimensions and tolerances. The classification values are those obtained by the tested fire resistant glazed elements containing the glass product in accordance with prEN 13501-2[1)] . To achieve classification, an appropriate frame containing the glass product and designed by the sponsor, can be used for the fire test.

NOTE : The classification obtained with this standard structure does not mean that the glass product, used in a different frame, offers the same fire resistance as it does in the tested frame.

On the basis of the performance obtained in the standard tests undertaken on samples of glazed elements, according to the fire resistance test standards, one or more of the classes in 5.2 and 5.3 shall be defined.

The classes are expressed by the letter(s) representing the considered functional requirement(s), followed by the performance time expressed in minutes:

R(minutes)/E(minutes)/EW(minutes)/EI(minutes)/S(minutes)/C

Only the combinations of letters and performance times defined in 5.2 and 5.3 can be used for the relevant fire resistant glazed elements.

5.2 Loadbearing separating fire resistant glazed elements

5.2.1 Walls (see prEN 1365-1)

Classification:	RE		20	30		60	90	120	180	240
	REI	15	20	30	45	60	90	120	180	240
	REW		20	30		60	90	120	180	240

5.2.2 Floors and roofs (see prEN 1365-2)

Floors and roofs are classified for the fire coming from the underside only.

Classification:	RE		20	30		60	90	120	180	240
	REI	15	20	30	45	60	90	120	180	240

5.3 Non-loadbearing separating fire resistant glazed elements

5.3.1 Non-loadbearing walls (see prEN 1364-1)

Classification:	E		20	30		60	90	120		
	EW		20	30		60	90	120		
	EI	15	20	30	45	60	90	120	180	240

[2)] See page 5.

[1)] See page 5.