



SLOVENSKI STANDARD

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Steklo v gradbeništvu - Samolepljiva polimerna steklena folija - 1. del: Definicije in opisi

Glass in building - Adhesive backed polymeric filmed glass - Part 1: Definitions and descriptions

Glas im Bauwesen - Glas mit selbstklebender Polymerfolie - Teil 1: Begriffe und Beschreibungen

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Verre dans la construction - Verre avec film polymère adhésif - Partie 1 : Définitions et descriptions

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English Version

Glass in building - Adhesive backed polymeric filmed glass - Part 1: Definitions and descriptions

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Foreword

This document (prEN 15755-1:2008) has been prepared by Technical Committee CEN/TC 129 “Glass in building”, the secretariat of which is held by NBN.

This document is currently submitted to the CEN Enquiry.

1 Scope

This European Standard defines the characteristics, properties and classification of adhesive backed polymeric filmed glass, i.e. glass that has had an adhesive backed polymeric film applied, for use in buildings.

This standard does not apply to adhesive backed polymeric films manufactured from polyvinylchloride (PVC).

2 Normative References

- EN 356 Glass in building – Security glazing – Testing and classification of resistance against manual attack
- EN 410 Glass in building – Determination of luminous and solar characteristics of glazing
- EN 572-1 Glass in building – Basic soda lime silicate glass products – Part 1: Definitions and general physical and mechanical properties
- 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 572-8 Glass in building – Basic soda lime silicate glass products – Part 8: Supplied and final cut sizes
- EN 673 Glass in building – Determination of thermal transmittance (U value) – Calculation method
- EN 1036 Glass in building – Silvered float glass
- EN 1063 Glass in building – Security glazing – Testing and classification of resistance against bullet attack
- EN 1096-1 Glass in building – Coated glass – Part 1: Characteristics and properties
- EN 1748-1-1 Glass in building – Special basic products – Borosilicate glasses – Part 1-1: Definitions and general physical and mechanical properties

- EN 1748-2-1 Glass in building – Special basic products – Glass ceramics – Part 2-1: Definitions and general physical and mechanical properties
- EN 1863-1 Glass in building – Heat strengthened soda lime silicate glass – Part 1: Definition and description
- EN 12150-1 Glass in building – Thermally toughened soda lime silicate safety glass - Part 1: Definition and description
- EN 12600 Glass in building – Pendulum test – Impact method test and classification for flat glass
- EN 12337-1 Glass in building – Chemically strengthened soda lime silicate glass – Part 1 - Part 1: Definition and description
- EN ISO 12543-2 Glass in building – Laminated glass and laminated safety glass – Part 2: Laminated safety glass
- EN ISO 12543-3 Glass in building – Laminated glass and laminated safety glass – Part 3: Laminated glass
- EN 12898 Determination of emissivity
- EN 13024-1 Glass in building – Thermally toughened borosilicate safety glass – Part 1: Definition and description
- EN 13541 Glass in building – Security glazing – Testing and classification of resistance against explosive pressure
- EN 14178-1 Glass in building – (Basic alkaline earth silicate glass) products- Part 1: Float glass
- EN 14179-1 Glass in building – Heat soaked thermally toughened soda lime silicate safety glass- Part 1: Definition and description
- EN 50147-1 Anechoic chamber – Shield Attenuation – Measurement
- EN 50147-2 Anechoic chamber – Alternative site suitability with respect to site attenuation
- prEN mno-1 Glass in building – Thermally toughened alkaline earth silicate safety glass – Part 1: Definition and description
- prEN 15755 - 1 Adhesive backed polymeric film – Definitions and description
- prEN 15755 - 2 Adhesive backed polymeric film – Evaluation of conformity

3 Definitions

For the purposes of this standard the following definitions apply:

3.1

adhesive backed polymeric filmed glass

a glass substrate (see 4) to which has been applied an adhesive backed polymeric film as defined in prEN xyz in order to modify one or more of its properties.

3.2

release liner

a disposable layer designed to protect the adhesive coating prior to installation.

3.3

dry lamination

installation of adhesive backed polymeric film by removal of the release liner and direct lamination to the substrate surface without using water-based solutions. Dry lamination is normally done using machinery incorporating a roller system within a clean room.

3.4

wet lamination

installation of adhesive backed polymeric film by removal of the release liner, wetting the exposed adhesive with a water-detergent solution, and lamination to the substrate surface.

3.5

general appearance defects

3.5.1

uniformity defect

slight visible variation in colour, in reflection or transmission, within an adhesive backed polymeric filmed glass pane or from pane to pane

3.5.2

stain

defect in the filmed glass larger than punctual defect, often irregularly shaped, partially of mottled structure

3.5.3

punctual defect

punctual disturbance of the visual transparency looking through the glass and of the visual reflectance looking at the glass

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NOTE Spot, pinhole and scratch are types of punctual defect.

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3.5.3.1

spots

defect that commonly looks dark against the surrounding coating, when viewed in transmission

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3.5.3.2

pinhole

punctual void in the coating with partial or total absence of coating and it normally contrasts clear relative to the coating, when viewed in transmission

3.5.3.3

scratches

variety of linear score marks, whose visibility depend on their length, depth, width, position and arrangements

3.5.4

cluster

accumulation of very small defects giving the impression of stain

3.5.5

gels

a visible variation in the adhesive caused by additional polymerisation within the adhesive or by coagulation seen as a point of distortion.

3.5.6

distortion

disturbing visible variation in optical sharpness of objects viewed through the adhesive backed polymeric filmed glass.

3.5.7**distortion lines**

disturbing visible variation seen as a line in optical sharpness of objects viewed through the adhesive backed polymeric filmed glass.

3.5.8**air bubbles**

pockets of air trapped between the adhesive backed polymeric film and the glass substrate.

3.5.9**water bubbles**

pockets of trapped installation solution between the adhesive backed polymeric film and the glass substrate.

3.5.10**particulate contamination**

particulates trapped between the adhesive backed polymeric film and the glass substrate.

3.5.11**haze**

light that is scattered upon passing through the adhesive backed polymeric filmed glass that produces a misty field of vision when objects are viewed through the adhesive backed polymeric filmed glass.

3.5.12**non-uniform colour appearance**

visible variation in colour, in reflection or transmission, within an adhesive backed polymeric filmed glass. Slight variations are not considered a defect.

NOTE

Slight colour differences may exist when joining two or more pieces of film on a large pane of glass.

3.5.13**peeling**

separation of the adhesive backed polymeric film from the glass.

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3.5.14**delamination**

separation of the layers in the adhesive backed polymeric film.

3.5.15**iridescence**

iridescence is seen as rainbow-like, luminous or gleaming colours that change colour and intensity with viewing position. Iridescence, a consequence of film construction, is not a defect.

3.5.16**demetallisation**

partial or complete loss of one or more of the metal layers within the adhesive backed polymeric film.

3.5.17**surface impressions**

a localised or repeating pattern of indentations in the adhesive backed polymeric film visible as a non-uniformity.

3.5.18**crease**

a line in the adhesive backed polymeric film caused by folding the film during manufacture or installation.

3.5.19**edge defects**

serrations and cuts caused by incorrect trimming of the adhesive backed polymeric film during installation.

4 Glass Substrate

The following types of glass products, in accordance with appropriate ENs, can be used as substrates for adhesive backed polymeric filmed glass:

Basic soda lime silicate glass products	EN 572-1 to 8
Special basic products – Borosilicate glasses	EN 1748-1-1
Special basic products – Glass ceramics	EN 1748-2-1
Special basic products – Alkaline earth silicate glass	EN 14178-1
Silvered float glass	EN 1036
Thermally toughened soda lime silicate safety glass	EN 12150-1
Heat strengthened soda lime silicate glass	EN 1863-1
Chemically strengthened soda lime silicate glass	EN 12337-1
Heat soaked thermally toughened soda lime silicate safety glass	EN 14179-1
Thermally toughened borosilicate safety glass	EN 13024-1
Thermally toughened alkaline earth silicate safety glass	EN 14321-1
Laminated and laminated safety glass	EN ISO 12543-2, -3
Coated glass	EN 1096-1

NOTE Coated glass should be regarded as the glass substrate used to manufacture the coated glass product as the application of adhesive backed polymeric film to the coated surface is not recommended.

5 Product definitions

5.1 General

The performance of adhesive backed polymeric filmed glass is a composite of the properties of the glass substrate and the characteristics of the adhesive backed polymeric film as defined in prEN xyz. Depending upon the type of film one or more of the properties of the glass substrate will be modified.

5.2 Solar control

The purpose of applying adhesive backed polymeric solar control film to a glass substrate is the modification of the spectrophotometric properties of the glass substrate to which it has been applied. The properties shall be determined in accordance with EN 410.

NOTE Properties of the adhesive backed polymeric film alone can be determined by calculation using programmes for example WINDAT, WINDOW5, OPTICS5, hence the performance of the filmed glass can be calculated by combining the properties of the adhesive backed polymeric film with those of the glass substrate.

5.3 Safety

The purpose of applying adhesive backed polymeric safety film to a glass substrate is the modification of the breakage characteristics of the glass substrate to which it has been applied. The testing and classification shall be in accordance with EN 12600.

- NOTE 1 The application of adhesive backed polymeric safety film to a glass substrate that has a mode of breakage (A), i.e. annealed glass, as defined in EN 12600, will be the modification of the mode of breakage to (B), i.e. laminated glass.
- NOTE 2 The application of adhesive backed polymeric safety film to a glass substrate that has a mode of breakage (B), i.e. laminated glass, as defined in EN 12600, will not change the existing mode of breakage.
- NOTE 3 The application of adhesive backed polymeric safety film to a glass substrate that has a mode of breakage (C), i.e. toughened glass, as defined in EN 12600, will be the modification of the mode of breakage to (B), i.e. laminated glass.

5.4 Security

5.4.1 General

The purpose of applying adhesive backed polymeric security film to a glass substrate is the modification of the shatter properties, impact behaviour and resistance to attack of the glass substrate to which it has been applied.

5.4.2 Resistance to manual attack

The purpose of applying adhesive backed polymeric security film to a glass substrate is to modify the resistance against manual attack. The testing and classification shall be in accordance with EN 356.

- NOTE 1 This modification could be the transformation of a glass substrate with no penetration resistance into one with penetration resistance.
- NOTE 2 This modification could be the transformation of a glass substrate with a level of penetration resistance into one with a higher performance.

5.4.3 Resistance to explosive pressure

The purpose of applying adhesive backed polymeric security film to a glass substrate is to modify the resistance to explosive pressure. The testing and classification shall be in accordance with EN 13541.

- NOTE 1 This modification could be the transformation of a glass substrate with no resistance to explosive pressure into one with resistance to explosive pressure.
- NOTE 2 This modification could be the transformation of a glass substrate with a level of resistance to explosive pressure into one with a higher performance.

5.4.4 Resistance to ballistic attack

The purpose of applying adhesive backed polymeric security film to a glass substrate is to modify the resistance to ballistic attack of the glass substrate. The testing and classification shall be in accordance with EN 1063.

- NOTE 1 This modification could be the transformation of a glass substrate that exhibits splintering, i.e. class S in accordance with EN 1063, to one that does not exhibit splintering, i.e. class NS in accordance with EN 1063.
- NOTE 2 This modification could enable a glass substrate with a level of resistance to ballistic attack to be transformed into one with a higher performance.