SLOVENSKI STANDARD
SIST EN 15755-1:2014

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Steklo v gradbeništvu - Steklo s samolepljivo polimerno folijo - 1. del: Definicije in zahteve

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

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

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

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81.040.20	Steklo v gradbeništvu	Glass in building
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Glass in building - Adhesive backed polymeric filmed glass - Part 1: Definitions and requirements

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Foreword

This document (EN 15755-1:2014) has been prepared by Technical Committee CEN/TC 129 “Glass in building”, the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by February 2015, and conflicting national standards shall be withdrawn at the latest by February 2015.

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Introduction

Adhesive backed polymeric filmed glass is glass which has had its properties and performance modified by the application of adhesive backed polymeric film.

There are a number of different types of films that are manufactured to modify specific properties of glass, including: solar energy transmittance, visible light transmittance, emissivity, Ultra Violet transmittance, privacy, appearance, impact behaviour, security, electromagnetic frequency (EMF) attenuation, and surface protection.

1 Scope

This European Standard defines the characteristics, properties and classification of adhesive backed polymeric filmed glass, i.e. glass product that has had an adhesive backed polymeric film applied, for use in buildings. The adhesive backed polymeric film is based on biaxially oriented polyester film as defined in EN 15752-1. This applies to both site and factory applications.

This European Standard does not apply to adhesive backed polymeric films manufactured using polyvinylchloride (PVC).

Other requirements, not specified in this standard, may apply to adhesive backed polymeric filmed glass that is incorporated into assemblies, e.g. laminated glass or insulating glass units. The additional requirements are specified in the appropriate product standard. Adhesive backed polymeric filmed glass, in this case, does not lose its mechanical or thermal characteristics.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

EN 673, *Glass in building - Determination of thermal transmittance (U value) - Calculation method*

EN 1063, *Glass in building - Security glazing - Testing and classification of resistance against bullet attack*

EN 12600, *Glass in building - Pendulum test - Impact test method and classification for flat glass*

EN 12898, *Glass in building - Determination of the emissivity*

EN 15752-1:2014, *Adhesive backed polymeric film – Definitions and description*

EN 50147-1, *Anechoic chambers - Part 1: Shield attenuation measurement*

EN ISO 8510-2, *Adhesives - Peel test for a flexible-bonded-to-rigid test specimen assembly - Part 2: 180 degree peel (ISO 8510-2)*

ISO 16933, *Glass in building — Explosion-resistant security glazing — Test and classification for arena air-blast loading*

CIE 13.3:1995, *Method of Measuring and Specifying Colour Rendering Properties of Light Sources*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15752-1:2014 and the following apply.

3.1
adhesive backed polymeric filmed glass
glass substrate (see Clause 4) to which has been applied an adhesive backed polymeric film as defined in EN 15752-1 in order to modify one or more of its properties

3.2
release liner
disposable layer designed to protect the adhesive coating prior to installation

3.3
dry lamination
installation of an adhesive backed polymeric film by removal of the release liner and direct lamination to the glass substrate surface without using water-based solutions

Note 1 to entry: Dry lamination is normally done using machinery incorporating a roller system within a clean room.

3.4
wet lamination
installation of an 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
these are either visual or optical faults caused by the film or by its application

Note 1 to entry: These are defined in 3.5.1 to 3.5.19

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 a punctual defect, often irregularly shaped, partially of mottled structure

3.5.3
punctual defect
punctual disturbance of the visual transparency whilst looking through the glass and of the visual reflectance looking at the glass

Note 1 to entry: Spots, pinholes, gels and particulates are types of punctual defect.

3.5.3.1
spot
defect that commonly looks dark against the surrounding film area, when viewed in transmission

3.5.3.2
pinhole
punctual void in one or more film layers that normally contrasts clear relative to the surrounding film area when viewed in transmission

3.5.3.3
scratch
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 a stain

3.5.5
gel
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 line
disturbing visible variation seen as a line in optical sharpness of objects viewed through the adhesive backed polymeric filmed glass

3.5.8
air bubble
pocket of air trapped between the adhesive backed polymeric film and the glass substrate

3.5.9
water bubble
pocket of trapped installation solution between the adhesive backed polymeric film and the glass substrate

3.5.10
particulate contamination
particulate 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

Note 1 to entry: Slight variations are not considered a defect.

Note 2 to entry: 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

3.5.14
delamination
separation of the polymeric layers in the adhesive backed polymeric film

3.5.15
iridescence
visible effect due to film construction consisting of rainbow-like, luminous or gleaming colours that change colour and intensity with viewing position

Note 1 to entry: Iridescence 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 impression
localised or repeating pattern of indentations in the adhesive backed polymeric film visible as a non-uniformity

3.5.18
crease
line in the adhesive backed polymeric film caused by folding the film during manufacture or installation

3.5.19
edge defect
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 1036–1
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
Basic alumino silicate glass products	prEN 15681–1
Heat soaked thermally toughened alkaline earth silicate safety glass	prEN 15682–1
Thermally toughened U channel soda lime silicate safety glass	prEN 15683–1

NOTE Application of adhesive backed polymeric film to the coated surface of coated glass 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 EN 15752-1. Depending upon the type of film one or more of the properties of the glass substrate will be modified.

Where a test standard is specified, adhesive backed polymeric filmed glass shall be tested and characterized using clear, monolithic, uncoated float glass of nominal thickness of 4 mm as the substrate, unless otherwise specified in this standard. The adhesive backed polymeric film shall be applied to the glass substrate according to the original manufacturer's recommendations. The glass shall be soda lime silicate and shall be in accordance with EN 572-1 and EN 572-2. One or more tests may be conducted on glass meeting these requirements but with a different thickness; these tests shall only be accepted if the same tests have been completed and reported in accordance with this standard for 4 mm thick glass. Adhesive backed polymeric film test specimens shall be representative of normal production material.

Measurement of the properties of test specimens shall be made after the cure time has elapsed. Cure time requirements may be obtained from the original manufacturer of the adhesive backed polymeric film.

The installation method shall be representative of the normal method used to install the adhesive backed polymeric film to the glass substrate.

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 and reported in accordance with EN 410. If desired, the solar-optical characteristics may also be reported as percentages, except for the general colour rendering index and shading coefficient; percentage values shall not be used in isolation from the decimal values.

Optional characteristics derived from EN 410 data, such as glare reduction, may be determined as described in EN 15752-1. These derived characteristics shall not be used in isolation and EN 410 values shall take precedence.

NOTE 1 The short wave shading coefficient and the long wave shading coefficient may be determined from the calculated EN 410 data.

NOTE 2 The contribution of the rear side of the pane of adhesive backed polymeric filmed glass is included.

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, as defined in EN 12600.

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, as defined in EN 12600.