SLOVENSKI STANDARD
oSIST prEN 17530:2020

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Železniške naprave - Notranja zasteklitev za železniška vozila

Railway applications - Interior glazing for rail vehicles

Bahnanwendungen - Innenverglasung für Schienenfahrzeuge

Applications ferroviaires - Vitrage intérieur pour véhicules ferroviaires

Ta slovenski standard je istoveten z: **prEN 17530**

ICS:

45.060.01	Železniška vozila na splošno	Railway rolling stock in general

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Railway applications - Interior glazing for rail vehicles

Applications ferroviaires - Vitrage intérieur pour véhicules ferroviaires

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

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European foreword

This document (prEN 17530:2020) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

1 Scope

This document specifies the functional, performance and quality requirements for rail vehicle interior glazing including type testing, routine testing and inspection methods.

This document applies to all rail vehicles.

Determination of the size, shape, orientation and position of interior glazing is outside the scope of this document. These data form part of the interior glazing technical specification.

This document does not specify requirements for the interfaces between the interior glazing and the vehicle. Accordingly, this document does not address issues relating to installation and structural integrity.

This document does not apply to interior glazing with a surface less than 0,02 m^2 and also emergency device casings (e.g. emergency hammers, passenger alarm systems, etc).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 12150-1:2015+A1:2019, *Glass in building - Thermally toughened soda lime silicate safety glass - Part 1: definition and description*

EN ISO 12543-5:2011, *Glass in building — Laminated glass and laminated safety glass — Part 5: Dimensions and edge finishing*

EN 15152, *Railway applications - Windscreens for trains*

EN 16584-1, *Railway applications — Design for PRM use — General requirements — Part 1: Contrast*

EN 45545-1, *Railway applications - Fire protection on railway vehicles – Part 1: General*

EN 45545-2, *Railway applications - Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components*

ISO 3538, *Road vehicles - Safety glazing materials - Test methods for optical properties*

ISO 3917:2016, *Road vehicles — Safety glazing materials — Test methods for resistance to radiation, high temperature, humidity, fire and simulated weathering*

ISO 7892, *Vertical building elements — Impact resistance tests — Impact bodies and general test procedures*

EN 16186-3:2016, *Railway applications — Driver's cab — Part 3: Design of displays*

ISO 3536:2016, *Road vehicles — Safety glazing materials — Vocabulary*

EN 15551, *Railway applications – Railway rolling stock – buffers*

EN 572-2:2016, *Glass in bulding, basic soda lime silicate glass products – part 2: float glass*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15152, EN 45545-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
draught screen
glazing used to separate passenger areas

3.2
glazing in gangway area
glazing located at the articulated assembly allowing movement between rail vehicles

3.3
display
hardware device or system that show text and/or graphic information to the user

[SOURCE: EN°16186-3:2016-08]

3.4
banister infill panel
glazing used to fill the space between the handrail and the stairs

3.5
balustrade
infill glazing protecting the edge of a stair, landing or floor that may otherwise be open to passengers

3.6
mirror
glazing material used for the purpose of reflecting images

3.7
laminated safety glass
glazing material consisting of two or more layers of glass held together by one or more interlayers

[SOURCE ISO°3536:2016-06]

3.8
toughened safety glass
glazing material consisting of a single layer of glass which has been subjected to special thermal or chemical treatment to increase its mechanical strength and to condition its fragmentation upon shattering

[SOURCE: ISO 3536:2016, 2.2, modified]

3.9
technical specification
document describing specific parameters and/or product requirements as an addition to the requirements of this standard

[SOURCE EN 15551]

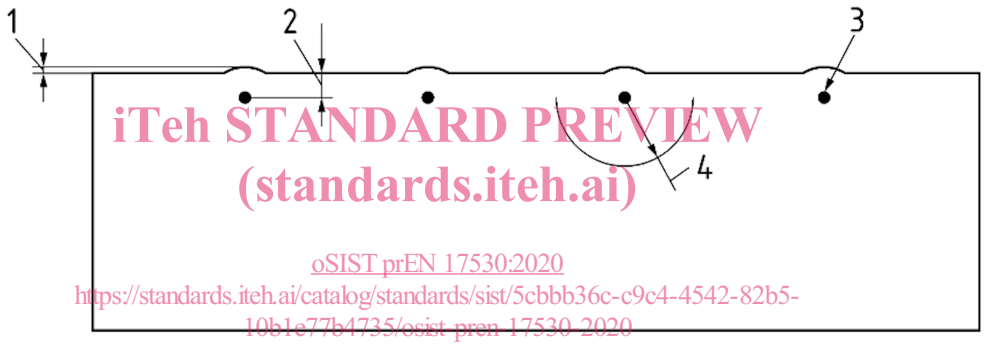
4 Dimensions and tolerances

4.1 Monolithic glass

The nominal thicknesses and thickness tolerances for a single sheet of glass are those given in the relevant product standards (see Clause 4 of EN 12150-1:2019).

The thickness of a pane shall be determined as for the basic product. The measurement shall be taken at the centres of the 4 sides, and away from the area of any tong marks (see Figure 1), which may be present. An appropriate measurement tool shall be used.

The tolerance values applied to the width (B) and length (H) for monolithic glass are shown in Table 1.



Key

1 deformation
2 up to 20 mm
3 tong mark
4 100 mm radius maximum are of optical distortion

Figure 1 — Tong marks

Table 1 — Tolerances on width, *B*, and length, *H*

Nominal dimension of side, *B* or *H* (mm)	Tolerance, *t* (mm)	
	nominal glass thickness, $d \leq 6$	nominal glass thickness, $d > 6$
$0 < B$ or $H \leq 500$	±1,5	±2,0
$500 < B$ or $H \leq 1\,000$	±1,5	±2,0
$1\,000 < B$ or $H \leq 1\,500$	±2,0	±2,5
$1\,500 < B$ or $H \leq 2\,000$	±2,5	±3,0
$2\,000 < B$ or $H \leq 3\,000$	±3,0	±4,0
> 3 000	±4,0	±5,0

4.2 Laminated glass

For laminated glass, each panel shall be compliant with the requirements of 4.1. Displacement *d* and associated tolerances shall be in accordance with EN ISO 12543-5:2011 (Clause 4). Measurements shall be done using an appropriate measurement tool.

For glazing compositions comprised of monolithic glass and various panels or solid panes, the requirements of 4.1 and 4.2 may apply.

4.3 Flatness

Flatness for monolithic glass shall be according to EN 12150-1:2015+A1:2019, 6.3.

Flatness for laminated glass shall have a maximum pitch less than or equal to 2 mm/m.

5 Functional requirements

5.1 Interior glazing test requirements

5.1.1 Type tests

— The interior glazing design shall be validated by satisfactory completion of the assessments and tests for:

— dimensions (see 4);

— appearance (see 6.1);

— optical distortion, if required in the technical specification (see 6.2.1)

— transmittance, if required in the technical specification (see 6.2.2);

— hard object impact (see 7.1.1);

— soft body test, if required in the technical specification (see 7.1.2)

— fragmentation (7.2)

— ageing (see 8.1).

5.1.2 Routine tests

Routine testing shall be undertaken during production on all interior glazing for:

— dimensions (see 4);

— appearance (see 6.1);

— optical distortion, if required in the technical specification (see 6.2.1);

— fragmentation (see 7.2).

5.2 Marking

5.2.1 Interior glazing

The interior glazing shall have a permanent marking that contains, as a minimum, the following information:

— name or logo of glazing supplier

— date of manufacturing: month and the last two numerals of the year or a code by which this information can be identified;

— type of glass used, e.g. L = laminated, T = toughened;

The marking shall be visible regardless of the installation method used.

The minimum height of characters shall be 4 mm.

The positioning and colour of the marking should be defined in the technical specification.

5.2.2 Display cover glazing

The glazing used for covering displays shall have a permanent marking that contains the following information:

— date of manufacturing: month and the last two numerals of the year or a code by which this information can be identified;

— optionally, name or logo of the glazing supplier, if it does not obscure the information provided.

5.3 Service requirements

Interior glazing shall comply with the requirements set out in EN 45545-2.

Interior glazing shall comply with the contrast requirements set out in EN 16584-1.

Interior glazing shall be designed to withstand normal operational conditions, including induced static and dynamic loadings and environmental conditions such as temperature and humidity, when installed in a rail vehicle.

NOTE Typically, reference is made to EN 50125–1 temperature classes T1, T2 or T3.

Requirements for use in a specific environment which are in addition to the requirements set out in this document shall form part of the technical specification.

The mechanical strength of the interior glazing with its installation for the following elements shall comply with both load cases defined below: