FIRE RESISTANCE CLASSIFICATION REPORT No. 23275C

OWNER OF THE CLASSIFICATION REPORT

AGC GLASS EUROPE nv
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INTRODUCTION

This classification report defines the classification assigned to a non-loadbearing glazed wall (type: Pyrobel-T EI30-22 VL – in a Jansen Janisol 2 frame), in accordance with the procedures given in EN 13501-2:2023: Fire classification of products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services.

This classification report consists of 14 pages and 6 annexes and may only be used or reproduced in its entirety.

1 Details of classified product

1.1 General

The element – type: Pyrobel-T EI30-22 VL – in a Jansen Janisol 2 frame, is defined as a non-loadbearing glazed wall with fire resistance characteristics.

1.2 Description

The element, Pyrobel-T EI30-22 VL – in a Jansen Janisol 2 frame, is fully described below, in support of this classification. The drawings of the test element as it was tested, are enclosed in the annexes 1 till 5 of this classification report.

1.2.1 Composition of the test specimen as tested

The test specimen is an asymmetrical non-loadbearing glazed wall in a metal frame.

Outer dimensions of the test construction:

- height: 4000 mm;
- width: 4000 mm;
- thickness: 60 mm.

1.2.1.1 Glazing system

[1] Glass pane					
Manufacturer	AGC GLASS EUROPE nv				
Reference	Pyrobel 22 VL				
Composition	T8/6/T8				
Orientation	symmetrical				
Thickness	(22.0 ± 1.0) mm (NV)				
Dimensions		Width (mm)	Height (mm)	Weight (kg)	Reference
	1a	875	3846	165	0L002-77-475
	1b	1500	3846	283	0L002-77-432
	1c	1500	3846	283	0L002-77-458
Fixing	clasped between the rebate of the frame and the glazing beads				
[2] Glazing setting block					
Material	hardwood				
Thickness	5 mm				
Dimensions	80 mm x 22 mm				

Density	655 kg/m³ (NV)
Quantity	2 underneath each glass pane
[3] Glazing strip	
Manufacturer	Odice
Reference	Superwool X607
Material	ceramic paper
Section dimensions	20 mm x 5 mm
Density	230 kg/m³ (NV)
Position	between the glass pane and the frame rebate or glazing bead.
Fixing	self-adhesive
[4] Intumescent strip	
Manufacturer	Jung
Reference	Flamiseal G
Material	graphite-based
Section dimensions	22 mm x 2.3 mm
Position	at the horizontal edges and the outer vertical edges
Fixing	self-adhesive
[5] Intumescent strip	
Manufacturer	Kuhn
Reference	Kerafix FXL 200
Section dimensions	10 mm x 2 mm
Position	2 strips in the centre of the vertical joint between the glass panes, 1 strip per vertical glass pane edge
Fixing	self-adhesive
[6] Sealant	
Manufacturer	Dow
Reference	Dowsil Firestop 895
Material	neutral silicone
Position	between glass panes
[7] Metal glazing bead	
Manufacturer	Jansen
Reference	402.125 Z
Material	steel
Steel thickness	1.8 mm (NV)
Section dimensions	25 mm x 20 mm
Fixing	clamped on fastening studs (reference: Jansen fastening stud 450.007, material: steel, diameter: 4.0 mm, length: 15 mm), c/c: 330 mm

Additional fixing	with screws (reference: M4 x 30 H/T, material: stainless steel, diameter: M4, length: 30 mm) through the glazing bead to the frame profile, quantity: 3 per fixed edge, positions: 2 at 50 mm from the inside corners of the frame and 1 evenly spaced between

1.2.1.2 Metal framing system

[8] Metal frame	
Manufacturer	Jansen
Reference	Janisol 2 – ref. 601.685.2 Z
Material	steel
Steel thickness	1.6 mm (NV)
Outer dimensions	3960 mm x 3940 mm x 60 mm
Composed of	Single edge profile Thermal break Infill Intumescent strip
Fixing to the concrete frame	with fixing anchors (reference: Hilti HRD U8/90, material: steel, diameter: 6.9 mm, length: 145 mm) through the rebate side of the frame profile (unexposed side), c/c distance: 910/915 mm
[9] Single edge profile	
Reference	601.685.2 Z
Material	steel
Outer section dimensions part 1 (rebate)	60 mm x 72.5 mm
Outer section dimensions part 2	60 mm x 50 mm
[10] Thermal break	
Reference	This information was not provided by the client to the laboratory.
Material	This information was not provided by the client to the laboratory.
Section dimensions	31 x 3 mm (NV)
Density	This information was not provided by the client to the laboratory.
Quantity	2 per compounded frame profile

[11] Infill	
Reference	This information was not provided by the client to the laboratory.
Material	This information was not provided by the client to the laboratory.
Section dimensions	46 mm x 9 mm (NV)
Density	This information was not provided by the client to the laboratory.
Quantity	2 per compounded frame profile
[12] Intumescent strip	
Manufacturer	Jansen
Reference	Jansen fire-resistant laminate (Ref. 451.082)
Material	Silicate-based intumescent product
Section dimensions	14.4 mm x 1.5 mm (NV)
Position	against the inside of the frame, at the circumference of the whole of the glass panes
Fixing	self-adhesive
[13] Frame setting block	
Manufacturer	Promat
Reference	Promatect®-H
Material	calcium silicate
Dimensions	100 mm x 60 x 20 mm
Density	870 kg/m³ (NV)
Position	5 positions, evenly spread underneath the frame

1.2.1.3 Insulation

[14] Insulation	
Manufacturer	Promat
Reference	Dalfratherm 1200 ULS
Material	alkaline earth silicate wool
Initial thickness	13 mm
Initial density	96 kg/m³ (NV)
Position	between the metal frame profiles and the concrete furnace frame, at the fixed horizontal edges.

2 Test reports/EXAP reports and test results in support of the classification

2.1 Test reports/EXAP reports

Name of the laboratory	Report ref. no.	Name of the owner	Date of the test	Method
WFRGENT nv	23275A	AGC GLASS EUROPE nv	10/10/2024	EN 1364-1:2015
WFRGENT nv	23275B	AGC GLASS EUROPE nv	-	EN 15254-4:2018

Exposure conditions during the fire resistance test:

Temperature/time curve: standard as in EN 1363-1:2020.

Direction of exposure: The test specimen is an asymmetrical construction. The side of the glazed wall with the glazing beads was exposed to the fire.

No extra load supplementary to the own weight of the glazed wall non-loadbearing was applied during the test.

One vertical edge is free, the other edges are fixed.

2.2 Test results

Parameters	Result
Thermal insulation – I	
ΔT_m = 140°C	38 minutes, no failure(1)
ΔT_M = 180°C	30 minutes
Integrity – E	
Spontaneous and sustained flaming	38 minutes, no failure(1)
Failure with ∅ 6 mm gap gauge	38 minutes, no failure(1)
Failure with ∅ 25 mm gap gauge	38 minutes, no failure(1)
Ignition of cotton pad	38 minutes, no failure(2)
Radiation – W	
Radiation intensity = 15 kW/m²	38 minutes, no failure(1)

(1) The test was discontinued after 38 minutes at the request of the sponsor.

(2) No failure until the moment of failure of the thermal insulation (I).

3 Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with clause 7 of EN 13501-2:2023.

3.2 Classification

The element, glazed wall – type: Pyrobel-T EI30-22 VL – in a Jansen Janisol 2 frame, is classified according to the following combinations of performance parameters and classes as appropriate. No other classifications are permitted.

The classifications are valid for the direction as stated in clause 2.1: The side of the glazed wall with the glazing beads was exposed to the fire.

EI 30, EI 20, EI 15
EW 30, EW 20, EW 15
E 30, E 20, E 15

3.3 Field of direct application

This classification is valid for the following end use applications according to EN 1364-1:2015.

The results of the fire test are directly applicable to similar constructions where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability:

3.3.1 Glazed element

3.3.1.4 Installation angle

A change in the angle of installation up to ± 10° from the vertical plane is allowed, provided the height of the glazed element does not exceed 3960 mm.

3.3.1.5 Height of the glazed element without overrun

For the classification times:

- EI 30

An increase in height up to a maximum of 4260 mm is allowed, provided the allowances for thermal expansion of the construction are increased pro-rata.

3.3.1.6 Height of the glazed element with overrun

- EI 20, EI 15;
- EW 30, EW 20, EW 15;
- E 30, E 20, E15.

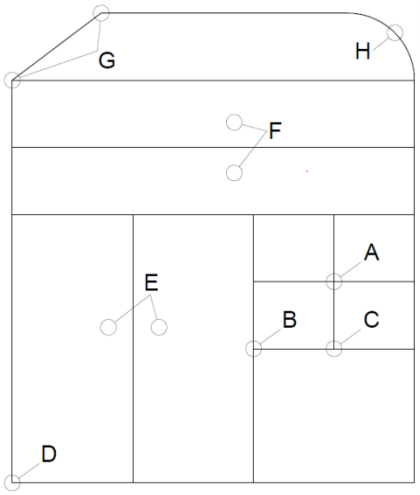
An increase in height up to a maximum of 4752 mm is allowed, provided the allowances for thermal expansion of the construction are increased pro-rata.

3.3.1.7 Width of the glazed element

A greater width is allowed by replicating the tested glazed elements or parts thereof, provided the framing system is identical to the one tested and the connection joints between the glazed elements have been tested.

Tested connection joints:

- Type D: corner junction.
- Type E: two full vertical panes side by side.



3.3.2 Glazing system

3.3.2.1 Linear dimensions

An unlimited decrease in height and/or width of the panes is allowed.

3.3.2.2 Dimensions and area of individual rectangular glass panes without overrun

For the classification times:

- EI 30

The following table shows the allowed size/area:

Tested sizes/areas		
Width (mm)	**Height** (mm)	**Area** (m²)
1500	3846	5.769

3.3.2.3 Dimensions and area of individual rectangular glass panes with overrun

For the classification times:

- EI 20, EI 15;
- EW 30, EW 20, EW 15;
- E 30, E 20, E15.

The following table shows the calculated extended size/area:

Tested sizes/areas			Extended sizes/areas		
Width (mm)	**Height** (mm)	**Area** (m²)	**Width** (mm)	**Height** (mm)	**Area** (m²)
1500	3846	5.769	1800	4615	6.980

In order to accommodate the increase in glass dimensions, it is permitted to increase the distance between mullions and/or transoms.

The results are given in the following annex:

Annex 6: the maximum allowed dimensions of rectangular shaped glass panes are represented by the outer lines.

3.3.2.4 Glazing beads

Test results on 'clip-on' beads cover screwed-on glazing beads, applied with the same or smaller centre to centre distance (≤ 330 mm).

The tested bead width may be increased (≥ 25 mm). The bead depth may not be changed. (according to EN 15254-4:2018, figure 5)

3.3.2.5 Framing system

The distance between mullions and/or transoms may be decreased from that tested.

The distance between fixing centres may be decreased from that tested (≤ 910/915 mm).

The cross-sectional dimensions of the frame profiles may be increased from the dimensions tested (≥ 50/72.5 mm x ≥ 60 mm).

3.3.2.6 Supporting constructions

The classification is valid for the following standard supporting constructions in accordance with EN 1363-1 with at least the same fire resistance and overall thickness as the test specimen:

- High density rigid standard supporting construction.

3.4 Field of extended application

3.4.1 Glass shapes

Circular, triangular or 4 sided non-rectangular shapes may be cut from within the extended rectangular pane size defined by the field of direct application.

All other non-rectangular shapes may only be cut from the tested rectangular pane size and shall not be extended further.

3.4.2 Metal beads: Exchange of bead fixing / bead shape and dimensions

Allowed changes:

- The bead depth may be increased (≥ 20mm) provided the mechanical edge cover remains within the limits determined by the reference test.
- The bead width (≥ 25 mm) may be increased without restriction.

3.4.3 Exchange of gaskets / glazing strips / setting blocks

Exchange of a glazing material, e.g. gaskets, is only allowed if it is demonstrated in a reference test and/or pre-existing test data that the exchange does not have a detrimental effect on the fire performance within a comparable glazing system of the same glass product range.

3.4.4 Changing or adding surface coverings

Decorative surface coverings of the glazing beads may be added.

Limitation:

- It must be demonstrated that the covering material achieves at least Class A2 when tested according to EN 13501-1.
- Any coverings on glazed elements classified EI shall be secured using only fixing method(s) proven in the reference test and/or by pre-existing test data.

3.4.5 Metal frames: Frame materials / sections / thickness of chamber walls

Frame section may be changed provided that it is be demonstrated that:

- The inertia of the profiles is not reduced in the cold state.
- The frame section width is not reduced.
- The wall thickness and number of chambers in the frame are not reduced.

Limitation:

- Without additional test evidence it is not allowed to exchange the tested material for another material.

3.4.6 Changes or adding frame surface coverings

Decorative surface coverings of the framing members may be added.

Limitation:

- Decorative surface coverings of the framing members may be added where one does not exist, provided it is demonstrated that the covering material achieves at least Class A2 when classified according to EN 13501-1.
- If the surface covering is not Class A2 then the rules laid down in the EN 15269-2, EN 15269-3 and EN 15269-5 apply.

4 Limitations

This classification report does not represent type approval nor certification of the product.

SIGNED

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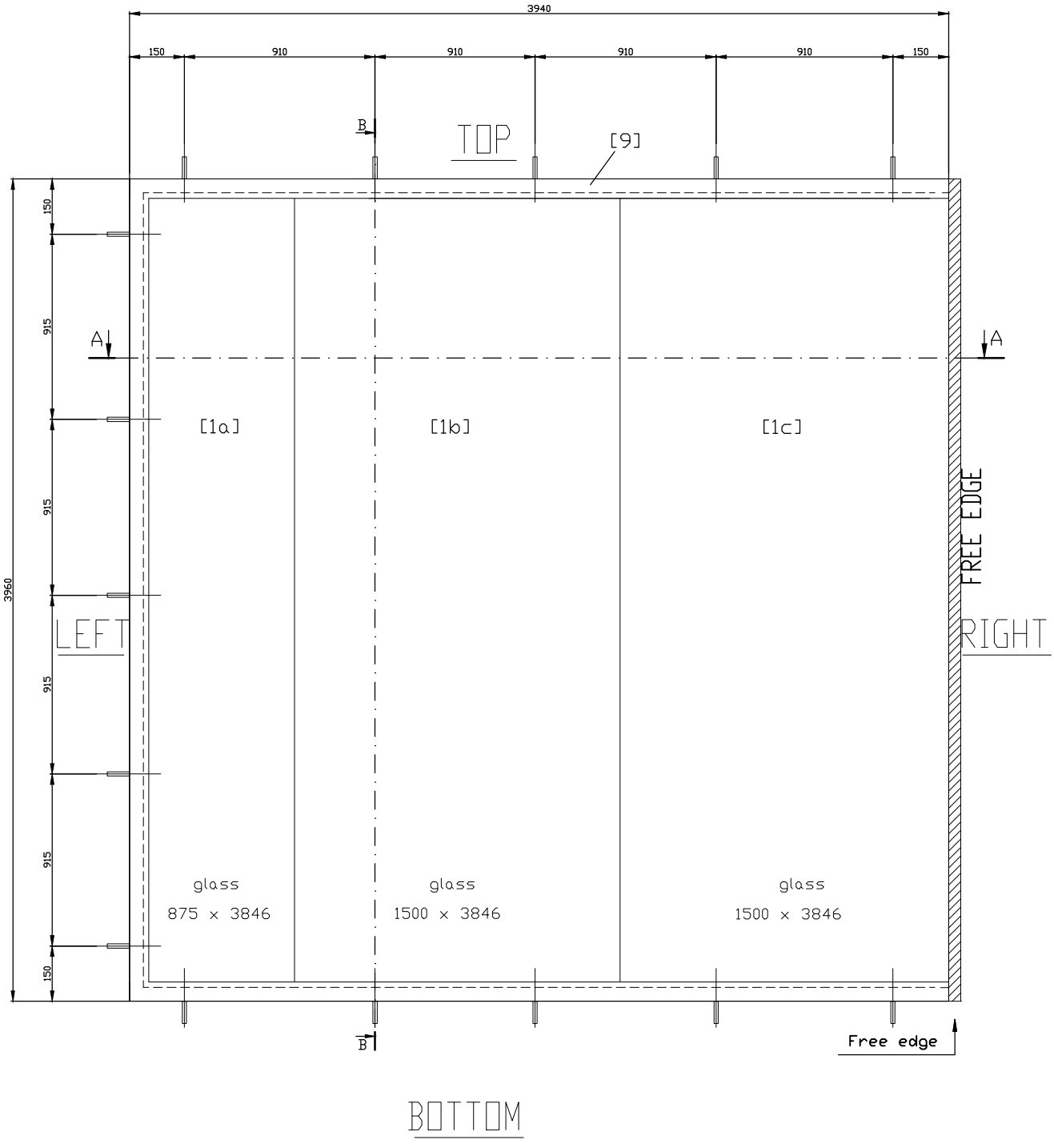
This document is the original version of the classification report and is written in English.

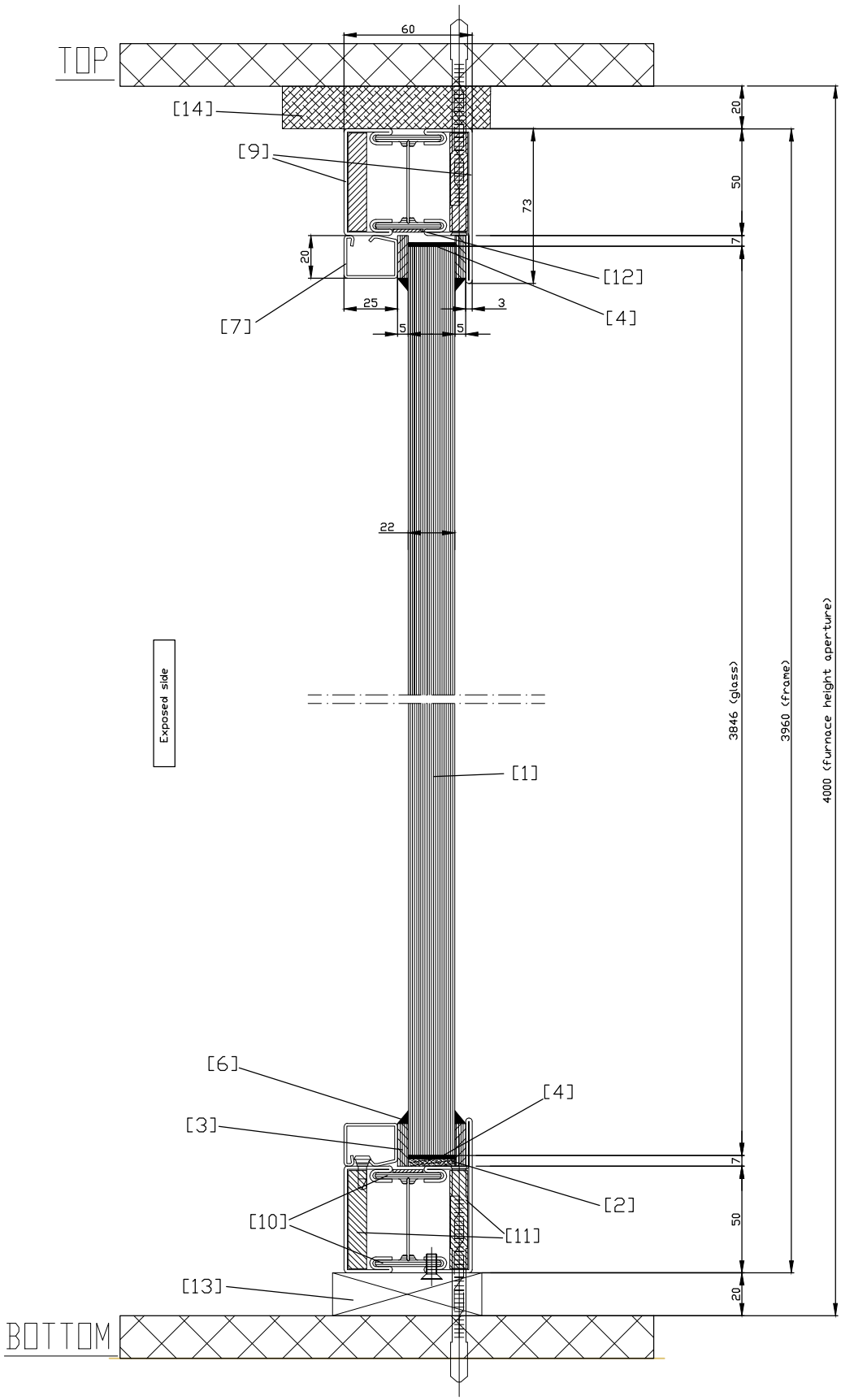
In case of doubt, the most recent version prevails, originally issued in English.

The authenticity of the electronic signatures is assured by Belgium Root CA.

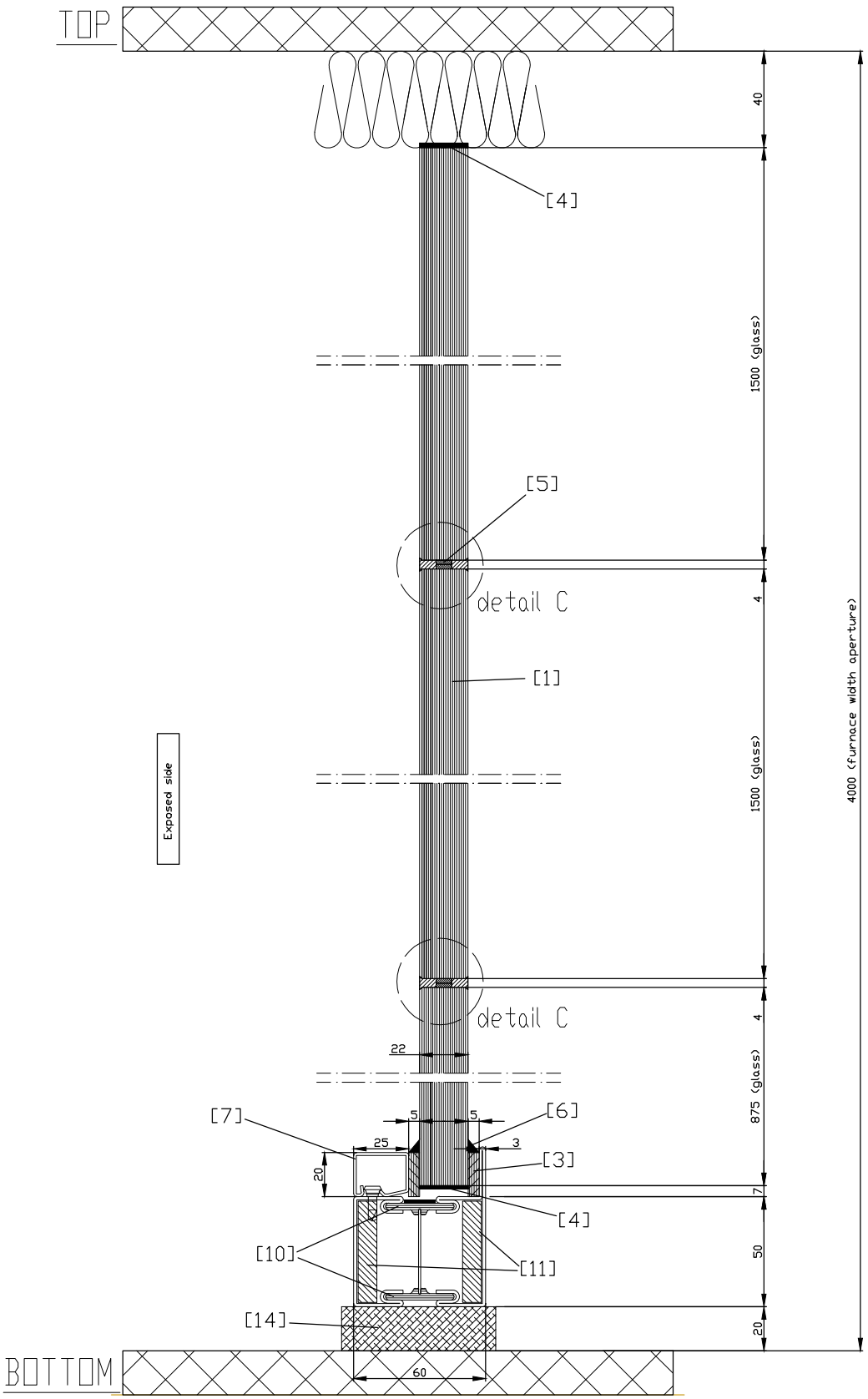
Front view (unexposed side) - dimensions - glass structure.



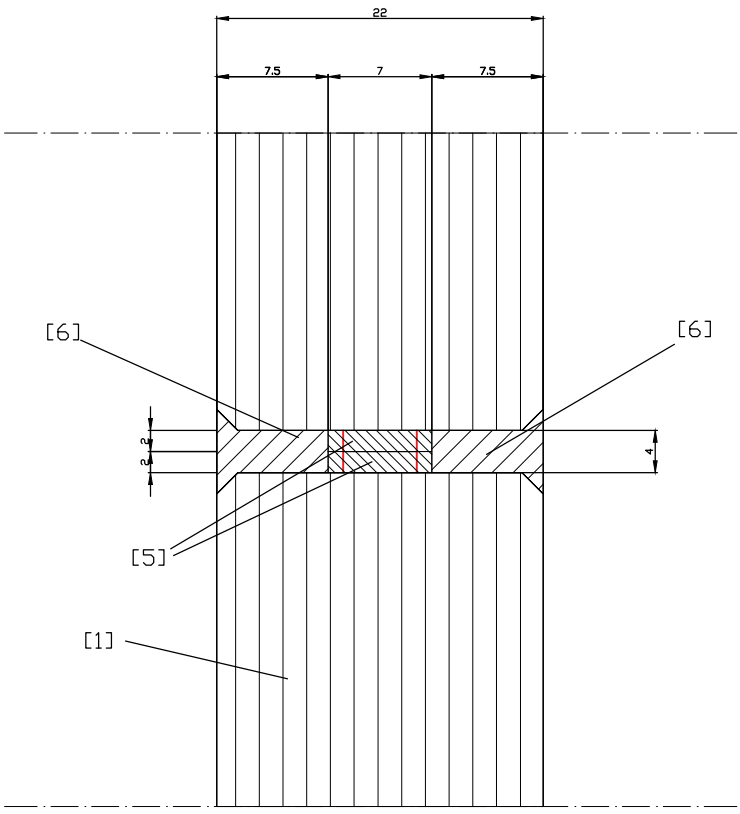
Section A-A - detail - dimensions.



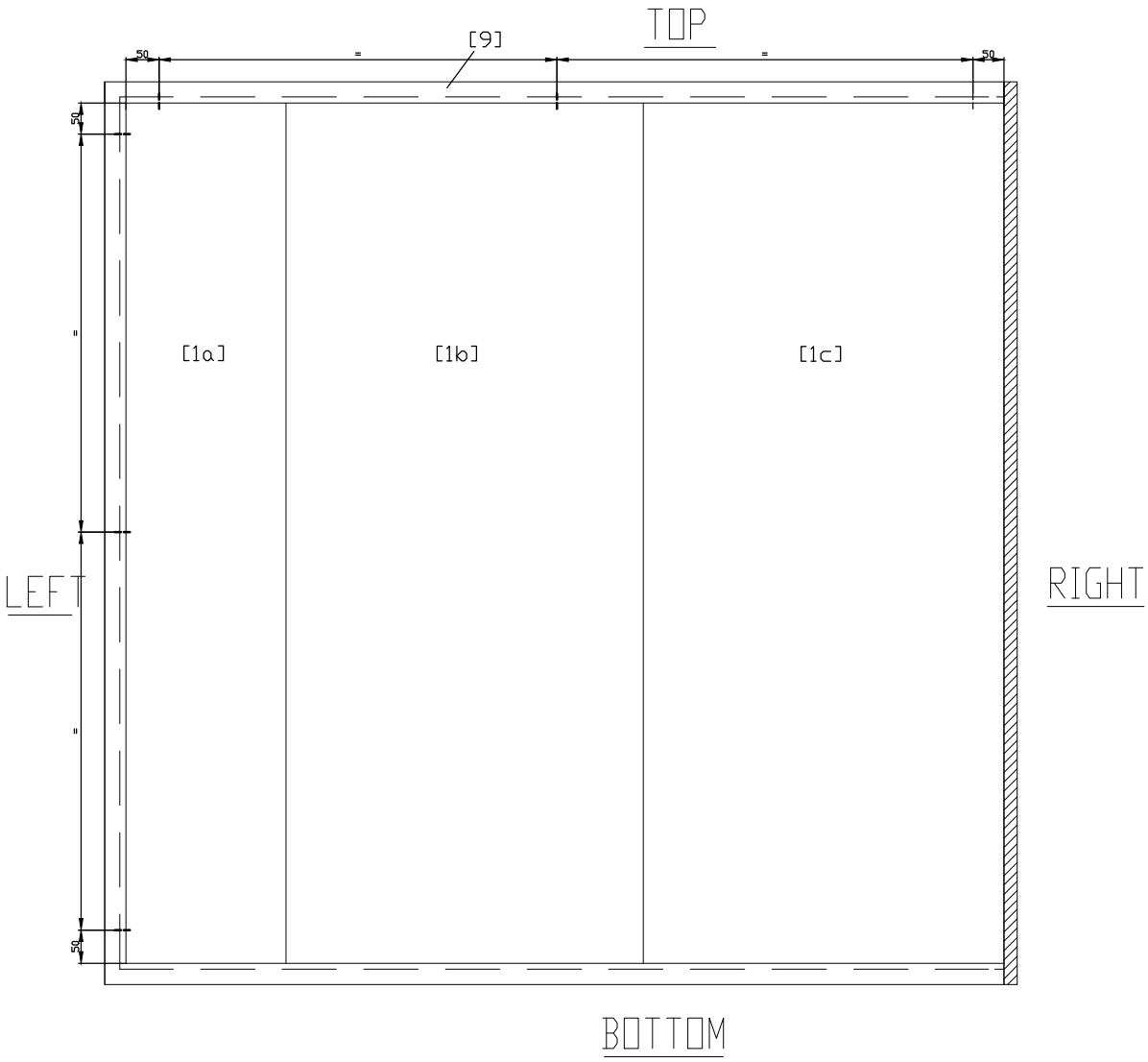
Section B-B - detail - dimensions.



Detail C - dimensions.



Front view - dimensions - additional fixing glazing beads.

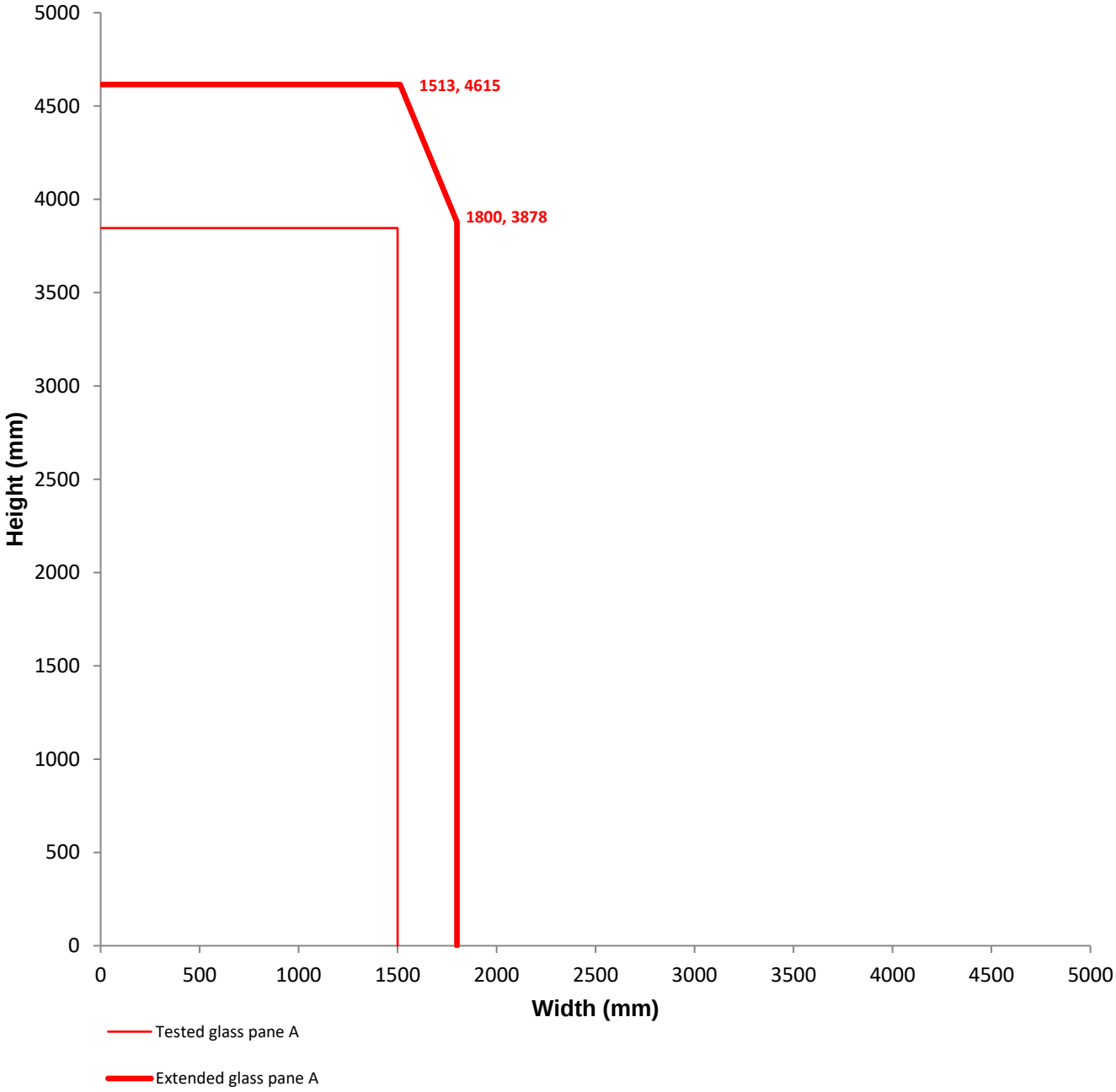


For glazing beads > 3 m => fixation with additional screws

Individual rectangular glass panes: aspect ratio and increase in area

The extended dimensions are only valid for the following classification times:

- EI 20, EI 15;
- EW 30, EW 20, EW 15;
- E 30, E 20, E15.



Note:

The maximum dimensions of rectangular glass panes are represented by the outer lines.