ArGEnCo Department
Structural Engineering Division

FIRE TEST LABORATORY

Notified body NB 2267
345-TEST
Member

Quartier Polytech 1
Allée de la découverte 13D, bât. B52/9
B-4000 LIEGE
Belgium

Tel.: +32 (0)4-366.91.38

CLASSIFICATION REPORT C0113

Translation : original version in French
Translator : Tradas Belgium

On behalf of:	AGC Glass Europe Avenue Jean Monnet 4 B-1348 Louvain-La-Neuve Belgium
Type of report:	Fire resistance classification in accordance with standard NBN EN 13501-2:2023
Classified product:	Non-load-bearing wall consisting of fixed frames made from Jansen type ECO50 profiles in which AGC type Pyrobel-T EW60 – 12 (4T/4gel/4T) glass panes are fitted.
Classifications issued:	EW 90, EW60, EW45, EW 30, EW 20 and EW 15 E 90, E60, E45, E 30, E 20 and E15
Date of the report:	7 September 2026

Eng. E. WELLENS *Laboratory Manager*	Prof. Dr Ir V. Denoël *Laboratory Director* p.p. Eng. E. WELLENS *Laboratory Manager*

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1 INTRODUCTION

This classification report defines the fire resistance classification assigned to the fixed stainless steel frame element made from Jansen type ECO50 profiles in which AGC type Pyrobel-T EW60 – 12 (4T/4gel/4T) glass panes are fitted in accordance with the procedures set out in NBN EN 13501-2:2023.

This classification report concerns test results obtained in accordance with the NBN EN 1364-1:2015 test standard. It is drawn up on the basis of a fire resistance test report (involving a test element) and an extended application report listing the permissible variations with respect to the elements tested. The test elements were configured in accordance with the normal requirements of the standard NBN EN 1364-1:2015 test, as well as the NBN EN 15254-4:2019 extended application standard. If a number of variations are considered simultaneously, the effect on the other variations must be taken into account as set out in Section 7.

Each test element used for the drafting of this classification report has been subject to a manufacturing control.

2 DETAILS OF CLASSIFIED PRODUCTS

2.1 GENERAL COMMENTS

The fixed stainless steel frame element made from Jansen type ECO50 profiles in which AGC type Pyrobel-T EW60 – 12 (4T/4gel/4T) glass panes are fitted is defined as a non-load-bearing element – glazed structure

Type	non-load-bearing elements – glazed structures
Product standard	EN 12150-2 – Glass in building – Thermally toughened soda-lime silicate safety glass – Part 2: Conformity assessment
Product type	2000/245/EC Annex III (1/6): Flat and curved glass panes for use in a glazed assembly intended specifically to provide for fire resistance
Use	Non-load-bearing element - Glazed structures with steel frame

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2.2 DESCRIPTION

The fixed frame element made from Jansen type ECO50 profiles in which AGC type Pyrobel-T EW60 – 12 (4T/4gel/4T) glass panes are fitted is described below and in detail in the test report, as well as in the extended application report supporting this classification.

- *In this report, the specifications of the components (dimensions, tolerances, materials, trade names, physical and chemical properties, etc.) correspond to the data provided by the applicant, unless stated otherwise. In cases where the laboratory measured properties itself, these are indicated as such. Where data have been provided by third parties, the identity of the third party is mentioned.*
- *The accuracy of the data provided by the applicant, or by third parties, has been verified by the laboratory to the extent allowed by the structure of the test element, the form in which it was provided and its identification. The laboratory cannot be held responsible for data provided by the applicant or third parties where it has not been possible for the laboratory to verify the data or where the data could affect the validity of the results.*
- *The dimensions given in relation to the peripheral edges of the test elements are based on the perimeter of the test elements "not including the free edge".*

2.2.1 Identification of the components

Number	Components	Materials	Dimensions	Origin
1	Profiles	Stainless steel	Profile excluding any upright and single cross-member: 50 x 60mm Profile excluding any upright and double cross-member: 80 x 50mm	Jansen type Eco 50 art. 01.564
2	Glazing bead	Stainless steel	Measured overall section: 20.0 x 24.6 mm	Jansen type Eco 50 art. 402.125Z
3	Glass pane	Tempered glass with clear gel	Various dimensions set out in the test report in support of the extended application	AGC type Pyrobel-T EW60 – 12 (4T/4gel/4T)
4	Frame anchor	Galvanised steel	10 x 120	Hilti type 50 HRD-C 10x120
5	Glazing bead anchor	Galvanised steel		Jansen type 450.007
6	Glass pane wedging	Wood	Variable thickness Length: 80 mm Width: 12 mm	AGC
7	Peripheral glazing edge seal	Graphite intumescent seal	Section: 12 x 2mm	Jung Type Flamiseal G
8	Peripheral glass pane seal	Adhesive ceramic fibre seal	Section: 15 x 4mm	Odice Type Superwool X607
9	Silicone glass pane finish	Neutral silicone sealant		Dow corning Firestop 700

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Number	Components	Materials	Dimensions	Origin
10	Frame wedging		Length: 200 mm Width: 65 mm Measured thickness: 5.7 mm (double layer use) Density: 1050 kg/m³	Odice Type Fibrodice MS
11	Peripheral frame insulation	Ceramic fibre	Density: 128 kg/m³ Thickness: 13 mm	Promat Type Dalfratherm

2.2.2 Description of the frame

The frame is made from profiles (1) welded in the workshop. For the purpose of performing the test in support of this extended application, the profiles (1) constituting the frame are welded to enable 7 rectangular glass panes to be incorporated. This means that the frame tested has 8 T-type joints, 4 right angles and a cross joint.

The frame is fixed by through-fastening. The spacing between the fasteners (4) is around 500 mm.

2.2.3 Description of the glass panes

The tested glass panes (3) are fitted in the frames using:

- point shims (6) to ensure a peripheral clearance of between 2 and 4 mm
- peripheral glass pane edge seal (7) placed on the entire glazing edge (3)
- peripheral glass pane seal (8) placed on the jambs of the frame and on the glazing beads (2)
- peripheral glass pane silicone (9) for the finishing between profiles (1) and glass panes (3) on the side not exposed to fire and between the glazing beads (2) and glass panes (3) on the side exposed to fire.

The glass panes (3) are placed on the lower cross-members of the frames against the jambs of the profiles (1). The screws (5) are directly placed in the profiles (1). These screws (5) allow the glazing beads (2) to be clipped onto the frame. The spacing between the screws (5) is around 250 mm.

2.2.4 Sealing of the frame peripherals

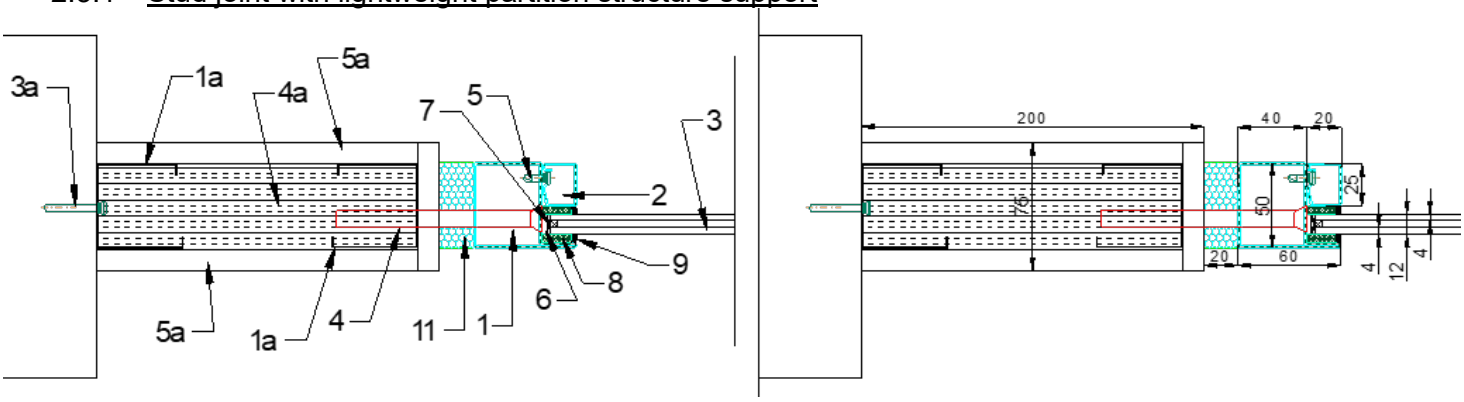
The lower frame cross-member is placed on point shims (10) distributed along the length of the lower frame cross-member. The remaining spaces between the shims (10) are filled with an insulating strip (11).

The space between the upper cross-member of the frame and the support structure, as well as the space between the uprights of the frame and the support structure, are with an insulation strip (11) folded in the form of a bead up to the level of the plane of the support structure.

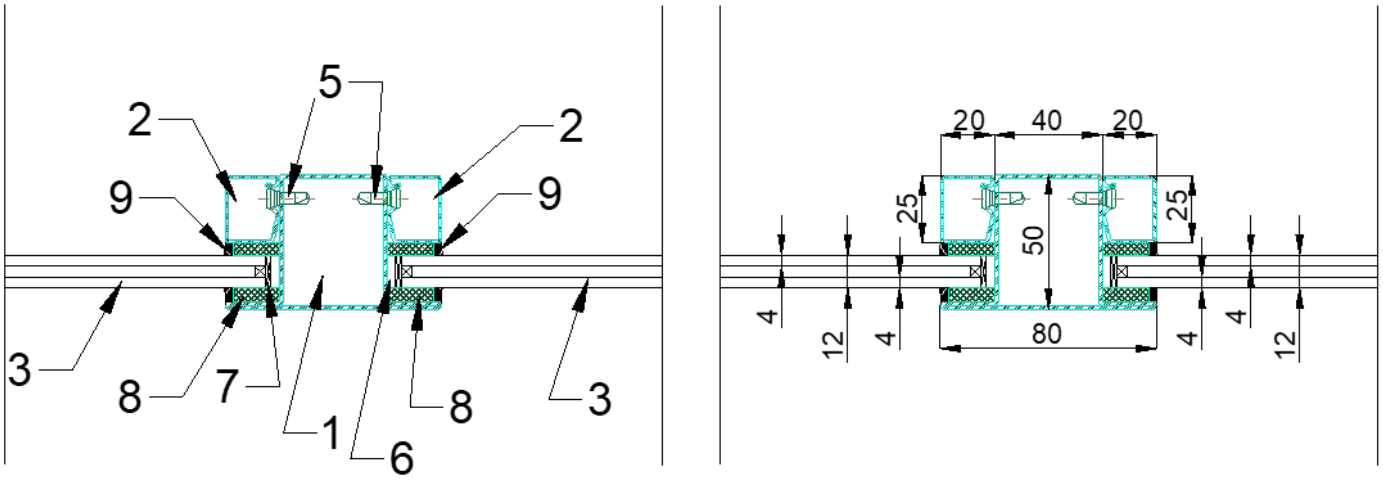
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2.3 DRAWINGS

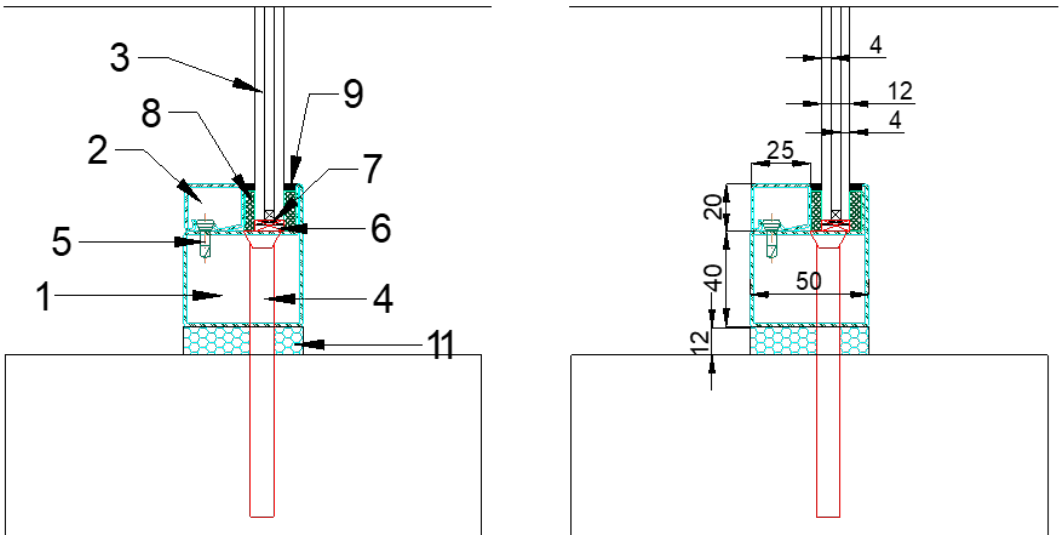
2.3.1 Stud joint with lightweight partition structure support



2.3.2 Joint between 2 glass panes



2.3.3 Frame stand



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3 TEST REPORT, EXTENDED APPLICATION REPORT AND TEST RESULTS IN SUPPORT OF THE CLASSIFICATION

3.1 TEST REPORT AND EXTENDED APPLICATION REPORT

Prepared by	Client	Report reference No.	Standard	Test date/EXAP
University of Liège	AGC Glass Europe	EF/FV/1609	EN 1364-1 :2015	24 April 2026
University of Liège	AGC Glass Europe	EA0061	EN 15254-4 :2019	24 August 2026

3.2 RESULTS

3.2.1 Test exposure conditions

Temperature/time curve	Standard curve ISO 834
Symmetrical element	No
Number of exposed sides	One
Direction of exposure	Fire on the glazing bead side

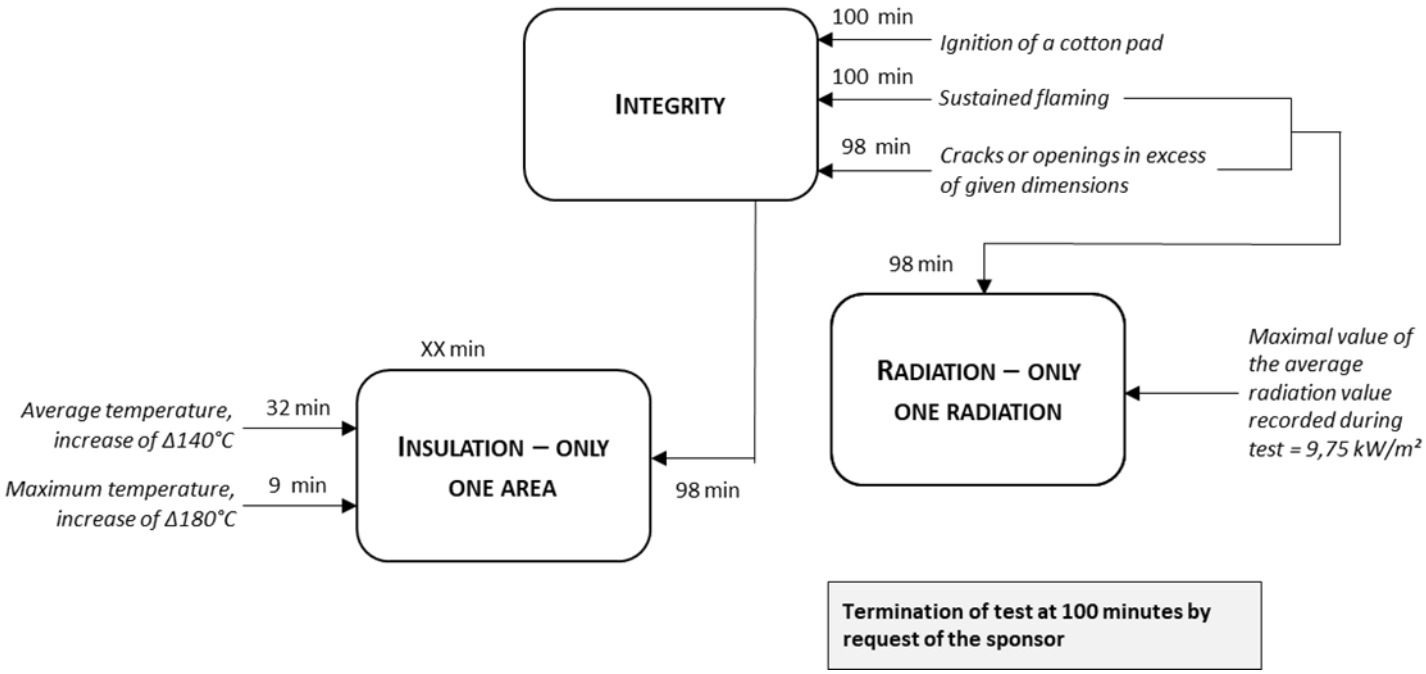
3.2.2 Test results

Report EF/FV/1609

- Each result is expressed in full minutes during which the corresponding criterion continued to be met.
- These test results are those obtained with the standardised support structure described in Section 2.1 of this test report.

PERFORMANCE	CRITERIA	*Time (full minute)*	*Failures? (time in min and sec or not)*
FIRE RESISTANCE	*Ignition of cotton pad*	*100*	*No*
	Sustained flame	*100*	*No*
	Cracks or openings exceeding the given dimensions	*98*	*98' 56"*
THERMAL INSULATION - ONE AREA ONLY	*Average temperature, increase of Δ140 °C*	*32*	*32' 56"*
	Maximum temperature, increase of Δ180 °C	*9*	*9' 16"*
RADIATION	*Maximum average level radiation > 5 kW/m²*	*44*	*44' 46"*
	Maximum average level radiation > 10 kW/m²	*100*	*No*
	Maximum average level radiation > 15 kW/m²	*100*	*No*
	Maximum average level radiation > 20 kW/m²	*100*	*No*
	Maximum average level radiation > 25 kW/m²	*100*	*No*

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4 CLASSIFICATION

4.1 CLASSIFICATION REFERENCE

This classification was carried out in accordance with Article 7.5.2 of NBN EN 13501-2:2023.

4.2 CLASSIFICATION

The fixed stainless steel frame element made from Jansen type ECO50 profiles in which AGC type Pyrobel-T EW60 – 12 (4T/4gel/4T) glass panes are fitted is classified according to the following combinations of performance parameters and classes.

	E		W		9	0									
	E		W		6	0									
	E		W		4	5									
	E		W		3	0									
	E		W		2	0									

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	E		W		1	5									
	E				9	0									
	E				6	0									
	E				4	5									
	E				3	0									
	E				2	0									
	E				1	5									

Fire resistance classifications issued: EW 90, EW60, EW45, EW 30, EW 20, EW 15, E 90, E60, E45, E 30, E 20 and E 15

These classifications are valid for:
- exposure to an ISO 834 temperature/time curve.
- a direction of exposure to fire on the glazing bead side
- the following end-use applications.

5 DIRECT FIELD OF APPLICATION

The numbering reproduced in this Appendix is that of Appendix A of standard EN 1364-1:2015.

5.A.4.1 GENERAL COMMENTS

The test results are directly applicable to similar structures when one or more of the modifications listed below have been made, and the structure continues to comply with the corresponding design rules with regard to its rigidity and stability. Other changes are not allowed.

The result of a test on an element comprising mixtures of different types of structure (for example different types of glass or different types of frames, etc.) is applicable only to the element subjected to the test. The test that is the subject of this report did not include a mixture of different types of structure.

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5.A.4.2 RULES RELATING TO THE PRIMARY AREA OF APPLICATION NOT REQUIRING A TIME OVERRUN

5.A.4.2.1 Glazed element

5.A.4.2.1.1 Installation angle

The test results cover the glazed elements inclined at a maximum angle of ± 10° with respect to the vertical plane, provided that the height of the glazed element is not greater than the maximum height subjected to the test, i.e. 2670 mm.

5.A.4.2.1.2 Height of the glazed element

The test results do not cover rectangular glazed elements with a height increase of 10% over the height subjected to the test for the combined fireproofing and radiation classifications of more than 20 minutes on account of the maximum deformation of the classified element exceeding 100 mm after 20 minutes;

5.A.4.2.1.3 Width of the glazed element

The test results cover rectangular glazed elements of greater width or repetitions of the glazed element subjected to the test or parts thereof, provided that:

- the framing system is identical to that tested;
- the width of the classified element used during the test is 2.8 m or more with an unsecured vertical edge (condition fulfilled during the test);
- the mullions and/or the cross-members between the glazed elements have been subjected to the test (the junctions between mullions and cross-members tested and therefore validated are given in Chapter 1 of this report).

In the case of elements that are intended to be classified as EW (case of the test in support of this report), the following additional provisions apply:

- the average temperature of the unexposed surface of the glazed element and the average temperature of the unexposed face in the non-glazed area of the classified element (see Figure 12 or 14) remains below 300°C (condition not fulfilled during the test); or
- the thermal radiation measured on the element classified as complete and fully glazed with a minimum size of 2.8 m x 2.8 m does not exceed 12.3 kW/m^2 (condition fulfilled during the test).

5.A.4.2.2 Glazing system

5.A.4.2.2.1 Linear dimensions

The linear dimensions of the glass panes may be reduced compared to the dimensions submitted for testing. The height and width can be taken into account independently.

5.A.4.2.2.2 Geometric ratio

The rectangular glass panes were not tested in support of this report with a geometric ratio in both portrait and landscape mode.

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5.A.4.2.2.3 Glazing beads

The test results on the clipped glazing beads (case of the test in support of this report) cover the screwed glazing beads, with the same spacing or a lower spacing, i.e. 250 mm.

The test results do not allow an EI classification to be claimed. Consequently, the rules for changing the type of glazing bead are not applicable.

The test results for the applications planned for classification E and/or EW on non-combustible glazing bead profiles (case of the test in support of this report) also cover a glazing bead depth which is at least equal to that subjected to the test, i.e. 25 mm, the height remaining the same as that subjected to the test, i.e. 20 mm.

5.A.4.2.3 Frame system

The distance between the mullions and/or cross-members may be reduced compared to that submitted for testing.

The spacing of the fasteners may be reduced compared to those subjected to the test.

The section of the frames may be increased compared to those submitted for testing.

5.A.4.2.4 Support structures

5.A.4.2.4.1 General

For test elements tested in the test frame, without any support structure, the result is applicable to high-density rigid support structures having at least the same fire resistance as the classified element. In the case of this test, the classified element was tested in a flexible standard support structure.

5.A.4.2.4.2 Standard support structures

The test results obtained with flexible standard support structures can be applied to high-density rigid support structures (according to EN 1363-1) having at least the same fire resistance classification, i.e. EI30, and an overall thickness greater than or equal to that of the element used for the test, i.e. 75 mm.

The test results obtained with flexible standard support structures do not cover either sandwich panel structures or flexible support structures in which the lining does not cover the uprights on both sides.

The test results obtained with flexible standard support structures cover other flexible structures with the same fire resistance classification, i.e. EI30, provided that:

- the structure is of the upright and board type according to the EN 13501-2 classification;
- the structure has an overall thickness at least equal to the minimum thickness of the appropriate range according to EN 1363-1 for the standard flexible wall used during the test;
- the number of layers of boards and the overall thickness of the layers are greater than or equal to those tested, i.e. a layer of 12.5 mm on each side;

The classified element was tested with a flexible standardised support structure fixed along the vertical and horizontal edges; the permitted flexible standard support structures can only be interfaced along the types of edges tested (vertical and horizontal).

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5.A.4.2.4.3 Non-standard support structures

Not applicable to the classified element

5.A.4.3 RULES RELATING TO THE PRIMARY AREA OF APPLICATION REQUIRING A TIME OVERRUN

5.A.4.3.1 General comments

For certain rules to be applicable, it is necessary to obtain a time overrun during the fire test compared to the desired classification time. The time overrun required is shown in the table below

Time overrun

Classification time (min)	Time overrun A (min)	Time overrun B (min)
≤ 20	not applicable	≥ 3
30, 45 and 60	≥ 3 and < 6	≥ 6
≥ 90	≥ 5% and < 10% of the target classification time	≥ 10% of the target classification time

NOTE The rules mentioned in 5.A.4.3 may be applied in addition to the rules provided in 5.A.4.2.

The test results do not enable a classification time to be obtained for the combined fire resistance and thermal insulation classifications.

The test results make it possible to obtain a time overrun A for the 90-minute combined fire resistance and radiation classifications.

The test results make it possible to obtain a time overrun B for the combined fire resistance and radiation classifications of 60, 45, 30, 20 and 15 minutes.

5.A.4.3.2 Dimensions of the glazed element

5.A.4.3.2.1 Height

The test result of the glazed element covers the height up to the maximum height subjected to the test multiplied by a factor of 1.1, i.e. a maximum height of 2937 mm, for all the combined fire resistance and radiation classifications.

The test result of the glazed element covers the height up to the maximum height subjected to the test multiplied by a factor of 1.2, i.e. a maximum height of 3204 mm, for all the 60-minute combined fire resistance and radiation classifications.

The above heights are given by virtue of the thermal radiation measured on the complete and fully glazed classified element not exceeding 12.3 kW/m2.

5.A.4.3.2.2 Width

The repetition of the glazed element is covered according to the rules described in A.4.2.1.3.

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5.A.4.3.3 Dimensions and surface area of the individual rectangular glass panes

The test result of the glass pane covers the dimensions up to the maximum of the dimensions subjected to the test multiplied by a factor of 1.1 in width and/or in height, provided that the time overrun A is reached and that the surface subjected to the maximum test multiplied by a factor of 1.1 is not exceeded. In the case of the test, the maximum dimension tested is 2670 mm high and 1300 mm wide. For the combined 90-minute fire resistance and radiation classification, the maximum size validated is 2937 mm high and 1430 mm wide with a maximum surface area of 3.82 m^2.

The test result of the glass pane covers the dimensions up to the maximum of the dimensions subjected to the test multiplied by a factor of 1.2 in width and/or in height, provided that the time overrun B is reached and that the surface subjected to the maximum test multiplied by a factor of 1.21 is not exceeded. In the case of the test, the maximum dimension tested is 2670 mm high and 1300 mm wide. For the 60-minute combined fire resistance and radiation classification, the maximum size validated is 3204 mm high and 1560 mm wide with a maximum surface area of 4.20 m^2.

To take account of the increase in the dimensions of the glass, it is permissible to increase the distance between the mullions and/or the cross-members.

5.A.4.3.4 Geometric ratio

The calculation of the allowed geometric ratio as defined in A.4.2.2.2 shall be carried out after any increase in the dimensions of the glass as a function of the established time overrun, i.e. A ≤ ½ × (A portrait, extended + A landscape, extended), where:

- A surface of the glass pane evaluated;
- A portrait, extended, extended surface area of the glass pane in "portrait" format;
- A landscape, extended, extended surface area of the glass pane in "landscape" format.

5.A.4.3.5 Four-sided circular, triangular and non-rectangular individual glass panes

Not applicable to the classified element.

6 EXTENDED FIELD OF APPLICATION

The numbering reproduced in this chapter 6 is that of EN 15254-4 :2019.

6.5. SPECIFIC MODIFICATIONS TO THE GLAZING SYSTEM

6.5.1 Replacement of the fire resistant glass

6.5.1.1 General comments

The AGC type Pyrobel-T EW60 – 12 (4T/4gel/4T) glass pane may be replaced with another type of glass without additional testing provided that:

- both types of glass belong to the same range of glass products (AGC Pyrobel-T range).
- the replacement fire-resistant glass has at least the same fire-resistance classification in accordance with EN 13501-2 as the glass subjected to the test. In the case of the glass pane used for the test, the only type of classification obtained is EW.

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- the dimensions (width x height) of the replacement glass are within the maximum dimensions set out in the primary area of application (see chapter 5.4.4.3.2. of this report)

The total thickness of the glass pane may be increased provided that no intermediate fire protection layer and no individual glass elements are decreased.

The thickness of each component that does not protect against fire must not be increased. It may be reduced, which results in a reduction of the total thickness of the glass.

6.5.1.2. EI classification with the element that provides the fire resistance tested on the exposed surface

Not applicable to the test element on account of the tested glass pane not having an EI classification.

6.5.1.3. EI classification with the element that provides the fire resistance tested on the unexposed surface

Not applicable to the test element on account of the test element not having an EI classification.

6.5.1.4. E, EW classification

No additional rules apply other than those set out in chapter 5.5.1.1.

6.5.2. Glass shapes

Circular, triangular or non-rectangular quadrilateral shapes may be cut from the size of the extended glass pane defined in the primary area of application defined in this report.

All other non-rectangular shapes can only be cut from the rectangular glass pane size submitted for testing.

6.5.3. Increase in dimensions of the glass

Not applicable to the test element. For variations in the dimensions of the glass panes, refer to the primary area of application (chapters 5.4.4.2.1. and 5.4.4.3.2 of this report).

6.5.4. Replacement of glazing beads in construction timber

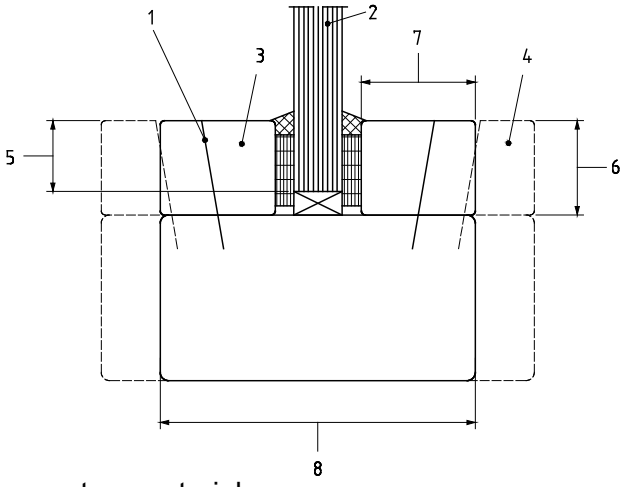
Not applicable to the test element on account of the test element using metal glazing beads.

6.5.5. Replacement of metal glazing beads

The materials that can be used for the glazing beads are stainless steel and mild steel.

Changes in the shape of the glazing beads are not allowed. The width of the glazing beads (item 7 in the figure below) may be increased to more than 24.6 mm. The depth of the glazing beads (item 6 in the figure below) may be increased to more than 20 mm as long as the glazing depth (item 5 in the figure below) does not change.

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6.5.6. Replacement of glazing system materials

With the exception of the glazing bead material, the materials used for the glazing system may not be replaced.

6.5.7. Surface coating of the glazing beads

It is possible to add surface coatings to the glazing beads provided that they meet the requirements of fire resistance class A2 according to EN 13501-1.

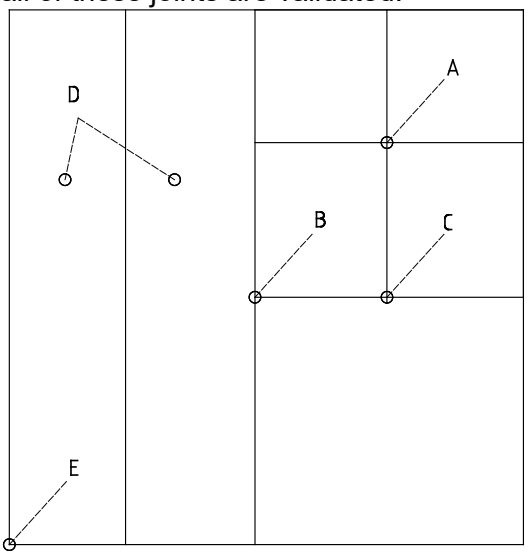
6.6 SPECIFIC MODIFICATIONS TO THE FRAME SYSTEM

6.6.1. Replacement of the frames

6.6.1.1. General comments

The only materials approved for the frame are stainless steel and mild steel.

The test in support of this extended application report was carried out with the joint types A, B, C, D and E illustrated below. As a result, all of these joints are validated.



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6.6.1.2. Wood frames

Not applicable to the test element on account of the test element using a metal frame.

6.6.1.3. Metal frames

In addition to the rules set out under point 6.6.1.1 of this report, the following additional rules apply for steel frames.

In the absence of additional test data, the steel used for the frame may not be replaced.

6.6.2. Frame surface coating

Frame surface coatings may be added as long as they meet the requirements of fire resistance class A2 according to EN 13501-1.

6.7 MODIFICATIONS TO THE FIRE RESISTANT GLAZING ELEMENT

6.7.1. Increase in dimensions and repetition for fire-resistant glazed elements with an EW rating

For certain rules to be applicable, it is necessary to obtain a time overrun during the fire test compared to the desired classification time. The time overrun required for rectangular and circular glazed elements is shown in the table below

Time overrun

Classification time (min)	Time overrun A (min)	Time overrun B (min)
≤ 20	not applicable	≥ 3
30, 45 and 60	≥ 3 and < 6	≥ 6
≥ 90	≥ 5% and < 10% of the target classification time	≥ 10% of the target classification time

The results of the test in support of this extended application report do not enable a classification time to be obtained for the combined fire resistance and thermal insulation classifications.

The results of the test in support of this extended application report make it possible to obtain a time overrun A for the 90-minute combined fire resistance and radiation classifications.

The results of the test in support of this extended application report make it possible to obtain a time overrun B for the 60, 45, 30, 20 and 15-minute combined fire resistance and radiation classifications.

The data from the test in support of this extended application report do not enable the Wext defined in the extended application standard to be calculated. Consequently, the permitted dimensional increases are only those stated in the primary area of application (chapters 5.4.4.2.1. and 5.4.4.3.2. of this report)

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6.7.2. Reductions in dimensions for fire-resistant glazed elements with an EW rating

The data from the test in support of this extended application report do not enable the Wext defined in the extended application standard to be calculated. Consequently, the dimensional reductions allowed are only those stated in the primary area of application (chapters 5.4.4.2.1. and 5.4.4.3.2. of this report)

7 LIMITATIONS

The combinations of parameter variations, assigned individually in the extended area of application described above, are permitted in accordance with § 4.3 of the extended application standard NBN EN 15254-4 :2019 under the following condition: each change required for these combinations is supported by evidence obtained by way of tests and/or by pre-existing test data. In the case of this extended application report drawn up on the basis of a single test, there is no evidence that has been obtained from tests and/or from pre-existing test data

This classification document does not constitute type approval, evaluation, clearance or certification of the product.

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