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CLASSIFICATION OF FIRE RESISTANCE
FIRES-CR-027-25-AUPE

Fixed partition, type S77 FR Alumil
with dimensions of (1 611 x 2 611) mm

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CLASSIFICATION OF FIRE RESISTANCE IN ACCORDANCE WITH EN 13501-2: 2023

with direct field of application

FIRES-CR-027-25-AUPE

Name of the product: Fixed partition, type S77 FR Alumil
with dimensions of (1 611 x 2 611) mm

Sponsor:
Alumil SA
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1. INTRODUCTION

This classification report defines the resistance to fire classification assigned to element Fixed partition, type S77 FR Alumil with dimensions of (1 611 x 2 611) mm in accordance with the procedures given in EN 13501-2: 2023.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Fixed partition, type S77 FR Alumil with dimensions of (1 611 x 2 611) mm, is defined as a non-loadbearing partition with fire resistance separation function.

2.2 PRODUCT DESCRIPTION

DIMENSIONS (identical for both test specimens)

Overall dimensions of the partition:	(1 611 x 2 611) mm (width x height)
Dimensions of the glass pane:	(1 529 x 2 529 x 36) mm (width x height x thickness) Area of the glass pane: 3,867 m^2
Dimensions of the wall opening:	(1 630 x 2 630) mm

Art. numbers of components stated below were delivered by the sponsor.

FRAME

The frame is made of 3-chamber system aluminium alloy profiles art. No. S77510 with dimensions of (61 x 77) mm and a profile wall thickness of 1,6 mm, with an interrupted thermal bridge made of polyamide type 40 mm U-2T shape GF25 with a wall thickness of 1,8 mm (manufacturer: Alumil SA, Greece).

The central chamber of the profile is filled with an insulation board made of phenolic foam type KOOLTHERM K3 (manufacturer: Kingspan), art. no. 313-25-021-00, with dimensions of (34 x 20) mm and a bulk density of 35 kg/m³.

The outer chambers of the profile are filled with plasterboards type B Knauf GKB (manufacturer: Knauf), with dimensions of (19 x 22) mm (2 layers of 9,5 mmthick board) art. no. 680-77-512-00, and (9,5 x 22) mm, part no. 680-77-511-00, both having a bulk density of 700 kg/m³. Insulation boards are packaged in the plastic foil.

Individual profiles are connected using double corner inserts made of aluminium alloy 6060, art. No. 113-23-102-00 and 113-23-196-00. The connectors are placed into the outer chambers of the profiles and insulated with Fire acrylic mastic type B1, part no. 770-01-414-00.

The aluminium pieces of the alignment corners art. No. 180-77-280-00 with dimensions of (22,2 x 1,5) mm, are installed in each corner of the profiles joint at exterior profile side.

The connectors-anchoring pieces are fixed to the outer perimeter frame as follows:

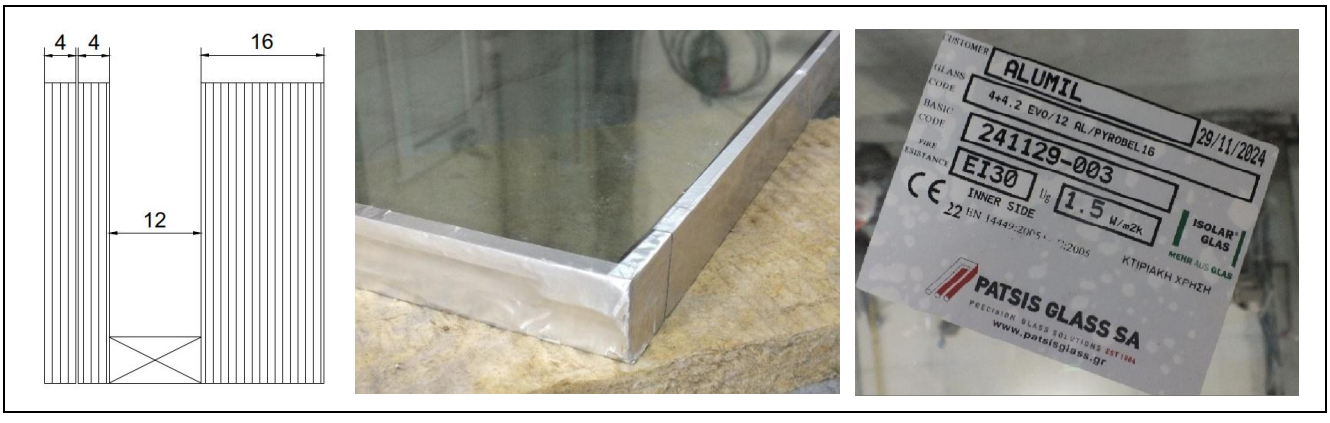
- outer stainless stripe connectors-anchoring pieces art. No. 680-77-510-00 with dimensions of (75 x 16 x 1,5) mm screwed to the frame using of pan head screws (4,2 x 19) mm art. No. 7984144219, placed in position of the frame fixation).

Intumescent tape art. No. 680-01-011-00 with dimensions of (27 x 2) mm type Tecnoflame® (manufacturer: Marvon Srl.) is placed around the inner perimeter of the frame (around the glazing).

Glazing of the frame

The frame is glazed with the insulation double glass (glass code: 4+4.2 EVO/12 AL/ PYROBEL 16), consists of the PYROBEL EI 30, 16 mm thick (manufacturer: AGC) + 12,0 mm air cavity (ALU) + 4+4.2 EVO hardened glass with 2 x 0,38 mm PVB foil (manufacturer of double insulating glass: Patsis Glass, GR). The perimeter of the glass is covered with an aluminum foil.

Dimensions of the glass pane: (1 529 x 2 529) mm (width x height), 36,2 mm thick.



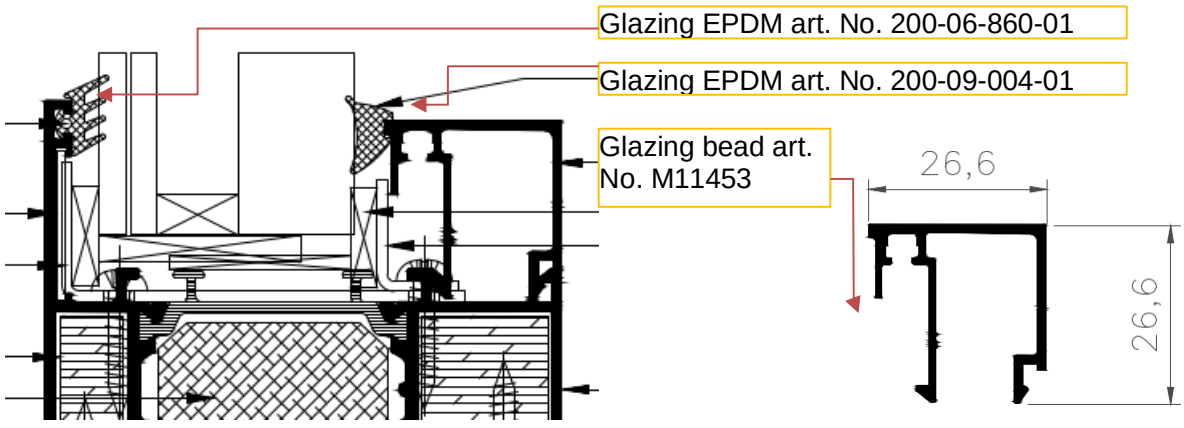
The glass panes are fixed to the frame using L- shaped glass holders art Nr. 680-77-001-00 with dimensions of (30 x 60 x 17,5) mm, and L-shaped glass holders art. No. 680-03-014-00 with dimensions of (30 x 12 x 1,5) mm – at interior glazing side.
These L- shaped glass holders are fixed to the profiles using steel screws (4,2 x 13) mm (2 pcs per one holder). Position of the glazing holders acc. to drawings (5 pcs at the horizontal edges, 7 pcs at the vertical edges).

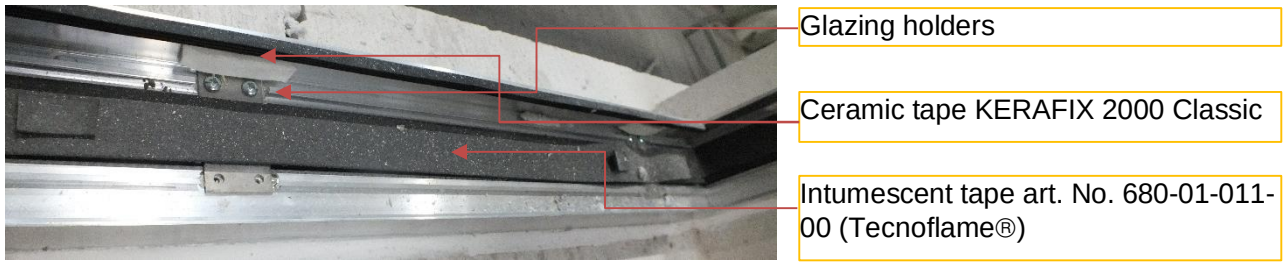
The distance setting blocks (Branddex Pax), with a bulk density of 1 700 kg/m^3, with dimensions of (70 x 30) mm and thickness of 4 mm art. Nr. 680-10-014-00 are put in the corners of the glass (between the glass and frame).

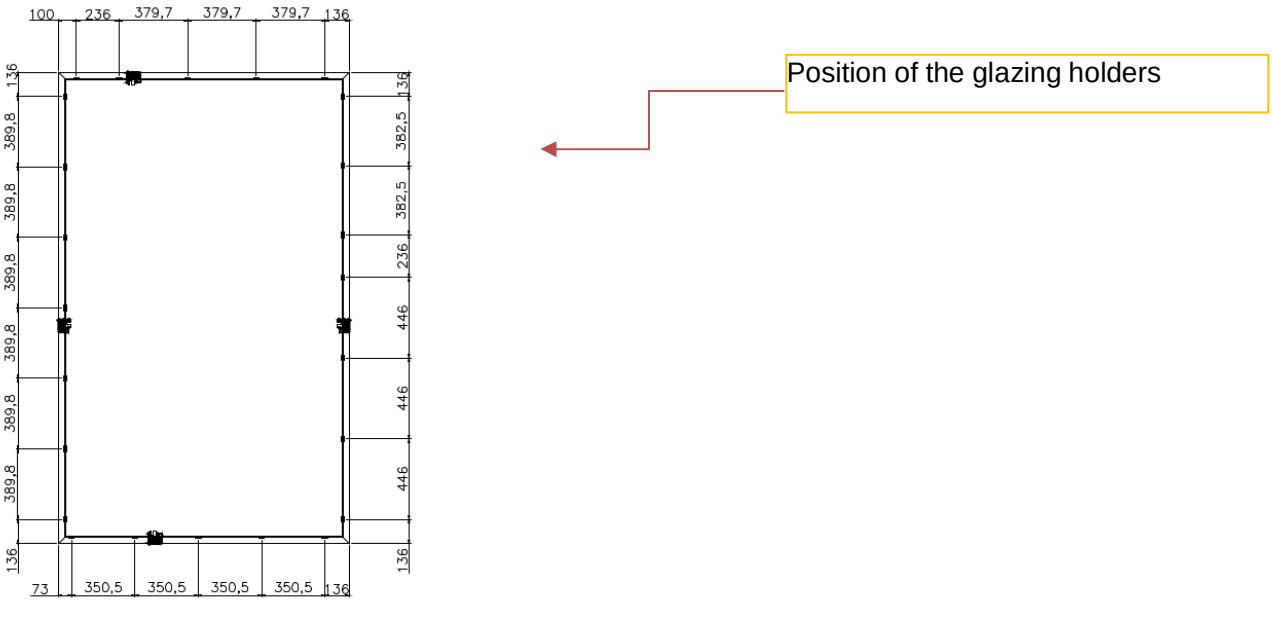
The strips of the ceramic tape KERAFIX 2000 Classic (mix of calcium magnesium silicate (15 x 4 x 50) mm art. No. 720-61-542-00 are on the glazing L-shaped glass holders in joint with the glass.

The clip-on aluminium glazing beads art. No. M11453 with dimensions of (26,6 x 26,6) mm, are clicked onto the profile of the frame, installed at the end of glass fixation on the interior frame side.

The glazing EPDM sealing profile catalogue No. 200-06-860-01, 8,0 mm thick (4,0 mm in compressed state), is placed around the perimeter of glass pane, at exterior window side.
The glazing EPDM sealing profiles catalogue No. 200-09-004-01, 7,0 mm thick (4,0 mm in compressed state), are placed around the perimeter of glass pane, at interior window side.



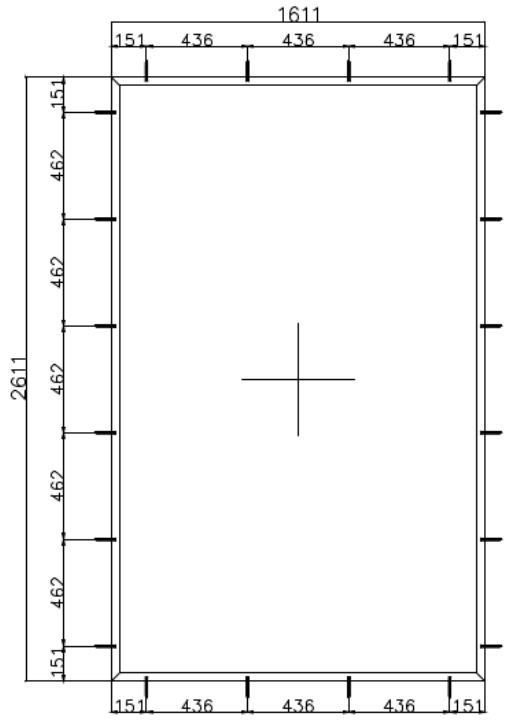




2.3 DESCRIPTION OF THE PRODUCT FIXATION

Product is fixed to the standard rigid supporting construction made by aerated concrete blocks 200 mm thick with bulk density in according to EN 1363-1: 650 kg/m^3 ±200 kg/m^3 (the manufacturer's stated value in the dried steady-state is 450 kg/m^3). Individual blocks are joined by thin layer of gypsum plaster for aerated concrete blocks. The concrete lintel is used at the top of the openings.

The frame of the partition is fixed in the mid-thickness of the supporting construction using steel screws (∅ 7,5 x 132) mm through the stripes of the frame connector-anchors art. No.680-77-510-00 around the perimeter of the frame. Position of screws as follows:



The gap, 10 mm wide, between the frame and supporting construction is filled with one component polyurethane foam, type Marvon TECNO-F 240 (manufacturer: Marvon Srl), covered by the adhesive mastic Fire Acrylic sealant B1 art. Nr. 770-01-414-00 (manufacturer: Elastotet).

More detailed information about product construction is shown in drawings which are part of the test report [1].

3. TEST REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method	Type of the test
[1]	FIRES, s.r.o., Batizovce, SR	Alumil SA, Thessaloniki, Greece	FIRES-FR-014-25-AUNS	24. 01. 2025	EN 1364-1: 2015	A

Type of the test: A – accredited, N – non-accredited

[1] Test specimens were conditioned according to EN 1363-1 before the fire resistance test

3.2 TEST SPECIMENS

Test report No.	Samples information	Conditioning	Pre-fire tests
[1]	The test laboratory recorded test samples production data in the test report (see clause 3).	The specimen was stored in the hall of testing laboratory and conditioned according to EN 1363-1.	-

3.3 TEST RESULTS

No./ Test method	Parameter		Results
[1] Specimen No. 1	supporting construction		Standard rigid supporting construction made by aerated concrete blocks 200 mm thick with bulk density in according to EN 1363-1: 650 kg/m^3 ±200 kg/m^3
	temperature curve		standard temperature time curve
	integrity	cotton pad	48 minutes no failure
		gap gauges	48 minutes no failure
		sustained flaming	48 minutes no failure
	thermal insulation	average temperature (140 K)	43 minutes
		maximal temperature (180 K)	45 minutes
	radiation 15 kW.m^{-2}		48 minutes no failure
	mechanical action		-
	orientation of the specimen		The glazing beads outside the fire (Pyrobel 16 outside the fire).
[1] Specimen No. 2	supporting construction		Standard rigid supporting construction made by aerated concrete blocks 200 mm thick with bulk density in according to EN 1363-1: 650 kg/m^3 ±200 kg/m^3
	temperature curve		standard temperature time curve
	integrity	cotton pad	48 minutes no failure
		gap gauges	48 minutes no failure
		sustained flaming	48 minutes no failure
	thermal insulation	average temperature (140 K)	48 minutes no failure
		maximal temperature (180 K)	48 minutes no failure
	radiation 15 kW.m^{-2}		48 minutes no failure
	mechanical action		-
	orientation of the specimen		The glazing beads inside the fire (Pyrobel 16 inside the fire)

[1] The fire test was terminated in the 49th minute of the test because of a risk of the specimens´ collapse.

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 7.5.2 and 7.5.3 of EN 13501-2: 2023.

4.2 CLASSIFICATION OF THE PARTITION acc. to clause 7.5.2 of EN 13501-2:2023

The element, **Fixed partition, type S77 FR Alumil with dimensions of (1 611 x 2 611) mm**, is classified according to the following combinations of performance parameters and classes as appropriate.

Fire resistance classification:
E 30; EI 30; EW 30

Note: Classification of the element with the glazing beads inside the fire (Pyrobel 16 inside the fire): **E 45; EI 45; EW 45**.

4.2.1 CLASSIFICATION OF THE EXTERNAL WALL acc. to clause 7.5.3 of EN 13501-2:2023

The element, **Fixed partition, type S77 FR Alumil with dimensions of (1 611 x 2 611) mm**, is classified according to the following combinations of performance parameters and classes as appropriate.

Fire resistance classification:
E 30 (o « i); EI 30 (o « i); EW 30 (o « i)

4.3 FIELD OF APPLICATION

This classification is valid according to EN 1364-1: 2015 annex A.4.2 and A.4.3 for the following end use applications:

Installation angle	A change in the slope of the installation angle by ±10° from the vertical plane is allowed, provided that the height of the wall does not exceed the tested height (maximum wall height: 2,611 mm);
Height of the glazed element	The height of the glazed element may be increased multiplied by a factor of 1.2 (the overrun time B achieved), meaning the maximum allowed height of the glazed element is 3,133 mm;
Width of the glazed element	The width of the glazed element may be increased multiplied by a factor of 1.2 (the overrun time B achieved), meaning the maximum allowed width is 1,933 mm (the maximum allowed width of the glass pane is 1,834 mm);
Dimensions and area of rectangular glass pane	The height of the glass pane may be increased multiplied by a factor of 1.2 (the overrun time B achieved), meaning the maximum allowed height of the glass pane is 3,034 mm.; The width of the glass pane may be increased multiplied by a factor of 1,2 (overrun time B achieved), meaning the maximum allowed width of the glass pane is 1 834 mm; The maximal area of the glass pane may be increased multiplied by a factor 1,2 (overrun time B achieved), meaning the maximum allowed area of the glass pane is 4,64 m^2; Decreasing the dimensions and area of the glass pane is allowed; Height and width may be considered independently;

Aspect ratio	Only rectangular panes with a portrait aspect ratio is allowed;
Fixation of the glass pane to the frame	Changes to the glass pane fixation system are not allowed;
Glazing beads	Clip-on beads may be replaced by screwed glazing beads;
Framing system	Distance between fixing centres may be decreased from tested;
Supporting construction	The element may be installed into the standard rigid supporting construction with minimal thickness is 200 mm and minimal bulk density of 650 kg/m^3;

5. LIMITATIONS

This classification document does not represent type approval or certification of the product.

The classification is valid provided that the product, field of application and standards and regulations are not changed.

Approved by:

Ing. Marek Gorlický
Head of the Testing Laboratory

Prepared by:

Michaela Gorlická
Technician of the Testing Laboratory