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ALUFIRE Sp.z o.o.Sp.k.

Ul. Warszawska 64a, 87-148 Lysomice k.Torunia Poland

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) as detailed below:

Products

Fire Resistant Glazing ALUFIRE EI30 ALUFIRE EI60 ALUFIRE EI120 ALUFIRE VISION LINE EI30 ALUFIRE VISION LINE EI60

Standards

LPS 1158 - Requirements and tests for fire resistant glazing systems

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Certificate No: 1406a ALUFIRE Sp.z o.o.Sp.k.

Table 1. ALUFIRE Glazing systems

Product Name	Max dimensions width x height (mm)	EN 13501-2 classification	Fillings / Glazing panel options (see table no)	LPCB Ref. No.
ALUFIRE EI30	4154x4200	EI 30 / EW 30 / E 30	2	1406a/01
ALUFIRE EI60	4154x3954	EI 60 / EW 60 / E 60	3	1406a/02
ALUFIRE EI120	2900x4400	EI 120 / EW 120 / E 120	4	1406a/03
ALUFIRE Vision Line EI30	3462x4154	EI 30 / EW 30 / E 30	5	1406a/04
ALUFIRE Vision Line EI60	3062x3585	EI 60 / EW 60 / E 60	6	1406a/05

Notes:

1. LPCB Ref. No's 1406a/01, 1406a/02 and 1406a/03 – ALUFIRE glazing systems are manufactured and installed to the specifications as detailed in Classification Reports no's 00749.1/15/Z00NP/e dated 05-06-2015, 00749.2/15/Z00NP/e dated 28-05-2015 and 00749.3/15/Z00NP/e dated 24-05-2015,

2. Where EI 15 and EI 45 glazing system classification is required the EI 30 and EI 60 designs can be applied to the EI 15 and EI 45 systems

- 3. LPCB Ref. No's 1406a/01, 1406a/02 and 1406a/03 the approval does cover an unlimited width of wall, the movement joint every 8000mm.
- 4. LPCB Ref. No's 1406a/04 and 1406a/05– ALUFIRE Vision Line glazing systems are manufactured and installed to the specifications as detailed in Classification Reports no's 03125/16/R35NP dated 30-04-2016 and Annex 1 to Classification Reports no's 03125/16/R35NP dated 10-10-2016.
- 5. LPCB Ref. No's 1406a/04 and 1406a/05 the approval does cover an unlimited width of wall.
- 6. LPCB Ref. No's 1406a/04 and 1406a/05 ALUFIRE Vision Line EI30, EI60 the individual glass modules are connected with each other with the use of:
 - DC 700 FIRESTOP silicon of DOW CORNING company,
 - 2 x intumescent gasket EUROSTRIP of CARBOLINE company and DC 700 FIRESTOP silicon of DOW CORNING company.

The width of the silicon connection ranges from 3,6 to 12 mm.

- 7. LPCB Ref. No's 1406a/01 ALUFIRE EI30 systems are fixed to the supporting construction by means of:
 - Steel fixings min. 10 mm ø x 112 mm-long. Max. 630 mm centres in the case of horizontal edges, and max. 780 mm centres in the case of vertical edges. The maximum distance from the corner to the first fixing point is max. 190 mm.
- 8. LPCB Ref. No's 1406a/01 ALUFIRE EI30 glazing systems when fixed to a Steel frame supporting construction by means of:

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- steel fixings min. 7,5 ø x 130 mm-long in the case of horizontal edges and min. 7,5 ø x 92 mm in case of the vertical edges. Max. 613 mm centres distance in case of horizontal edges and max. 624 mm centres in case of vertical edges, the maximum distance from the corner to the first fixing point is max. 190 mm.
- 9. LPCB Ref. No's 1406a/04 ALUFIRE Vision Line EI30 wall systems are fixed to the supporting construction by means of:
 - Steel fixings min. 10 mm ø x 112 mm-long. Max. 682 mm centres in the case of horizontal edges, and max. 680 mm centres in the case of vertical edges. The maximum distance from the corner to the first fixing point is max. 190 mm.
- 10. LPCB Ref. No's 1406a/04 ALUFIRE Vision Line EI30 glazing systems when fixed to a Steel frame supporting construction by means of:
 - Steel fixings min. 7,5 ø x 130 mm -long. Max. 682 mm centres in the case of horizontal edges, and max. 680 mm centres in the case of vertical edges. The maximum distance from the corner to the first fixing point is max. 190 mm.
- 11. LPCB Ref. No's 1406a/02 ALUFIRE EI60 glazing systems are fixed to the supporting construction by means of:

- Steel fixings of min. 10 mm ø x min. 92 mm-long, max. 700 mm centres in the case of horizontal edges and 625 mm centres in the case of vertical edges, the maximum distance from the corner to the first fixing point is max. 190 mm.

- Steel fixings min 5 x 100 mm in case of horizontal and vertical edges. Max. 613 mm distance in case of horizontal edges and in max. 624 mm centres in case of vertical edges, distance from the corner to the first fixing point is max. 190 mm.

- 12. LPCB Ref. No's 1406a/05 ALUFIRE Vision Line EI60 wall systems are fixed to the supporting construction by means of:
 - Steel fixings min. 10 mm ø x 112 mm-long in the case of horizontal edges and min. 10 ø x 132 mm in case of the vertical edges. Max. 682 mm centres in the case of horizontal edges, and max. 652 mm centres in the case of vertical edges. The maximum distance from the corner to the first fixing point is max. 190 mm.
- 13. LPCB Ref. No's 1406a/05 ALUFIRE Vision Line EI60 glazing systems when fixed to a Steel frame supporting construction by means of:
 - Steel fixings min. 7,5 ø x 130 mm -long in the case of horizontal edges and min. 10 ø x 132 mm in case of the vertical edges. Max. 682 mm centres in the case of horizontal edges, and max. 652 mm centres in the case of vertical edges. The maximum distance from the corner to the first fixing point is max. 190 mm.

14. LPCB Ref. No's 1406a/01, 1406a/02 - ALUFIRE EI30 and EI60 glazing are approved for installation into ALUFIRE, ALUFIRE VISION LINE glazing systems and rigid or flexible walls having a fire resistance of at least the same as the glazing system being installed.

15. LPCB Ref. No 1406a/03 - ALUFIRE EI120 glazing systems approved for installation into ALUFIRE EI120 system and a rigid supporting construction of minimum fire resistance class EI 120.

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- 16. LPCB Ref. No 1406a/03 ALUFIRE EI120 glazing systems are fixed to the supporting construction by means of:
 - Steel fixings min. 10 mm ø and min 112 mm-long in case of horizontal edges and min. 10 mm ø and min. 92 mm-long in case of vertical edges, placed at max. 630 centres in case of horizontal edges and 664 centres in case of vertical edges, the distance from the corner to the first fixing point is max. 190 mm.

The gaps between the ALUFIRE EI120 glazing system and supporting construction (maximum width of 30 mm) are filled by means of non-combustible mineral wool density of min. 70 kg/m3, and closed by means of one of the following components:

- gypsum plasterboard
- mortar for plastering,
- cement-lime plaster,
- fireproof silicone or acryl,
 - aluminium profile,
- steel profile,
- steel or aluminium sheet.
- 17. The gaps between the ALUFIRE EI30, ALUFIRE EI60, ALUFIRE Vision Line EI30 and ALUFIRE Vision Line EI60 systems non-loadbearing walls and supporting construction (maximum width of 30 mm) are filled by means of non-combustible mineral wool density of min. 70 kg/m3, or one of the following foams:
 - GREAT STUFF of DOW company,
 - SOUDAFOAM FR of SOUDAL company,
 - BBS-9802 NBS of DEN BRAVEN company,(only for ALUFIRE EI30 and ALUFIRE Vision Line EI30 system)
 - NULLIFIRE FF197 1K-P of ILLBRUCK company (only for ALUFIRE EI30 and ALUFIRE Vision Line EI30 system)

The gap is closed by means of one of the following components:

- gypsum plasterboard
- mortar for plastering,
- cement-lime plaster,
- fireproof silicone or acryl,
- aluminum profile,
- steel profile,
- steel or aluminium sheet.
- 18. LPCB Ref no 1406a/03 Jointing components, screws, bolts, rivets, nuts, washers are only stainless or galvanized steel.
- 19. ALUFIRE glazing systems manufacturer.

The following Company manufacture the products listed on this certificate to a specification issued and is audited by the LPCB to ensure the product certification requirements are met.

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Alufire Sp z.o.o.Sp.k. (LPCB Ref. 1406) 64 a ul. Warszawska 87-148 Lysomice K. Toruna, Poland

Table 2. Filings/glazing panel specification ALUFIRE EI30

Manufacturer	Panel Type	Max dimensions in portrait orientation width x height (mm)	Max dimensions in landscape orientation width x height (mm)	Thickness (mm)
AGC	Glass/Pyrobel 16	1400x2500 1000x2888	2500x846	17.3
AGC	Glass/Pyrobel 16 EG	1400x2500 1000x2888	2500x846	21.1
AGC	Glass/Pyrobel 17	1400x2500 1000x2888	2500x846	17.8
AGC	Glass/Pyrobel El30/16	1148x2225	1148x2225	16
PILKINGTON	Glass/PYROSTOP 30- 10	1400x2500	2500x846	15
PILKINGTON	Glass/PYROSTOP 30- 20	1400x2500	2500x846	18
REGLAS S.r.o	Glass/PYROBAT 15	1127x2050	2050x1127	15
Vetrotech Saint-Gobain	Glass/EKOFLAM 30	1300x2300	1917x1300	15

Other ALUFIRE EI30 system filling systems not mentioned in table 2:

- glass units made of glazing presented in table 2 coupled with safety glass or laminated glass in accordance with EN 12150-1:2002 or EN ISO 12543-2:2000;

opaque panels, with core made of minimum two layers of gypsum plasterboards type F (each thickness of 12,5 mm) and external facing made of:

- aluminium sheets thickness of 1,5 mm (opaque panel overall minimum thickness 28 mm, maximum dimensions: 1800 x 3000 mm (width x height), area – 4.538m².

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stainless steel sheets thickness of 1,0 mm (opaque panel overall minimum thickness 27 mm, maximum dimensions: 1800 x 3000 mm (width x height), area – 4.538m².

Maximum dimensions of PYROBEL 16 glazing of AGC company can be increased, as follows:

- for portrait orientation: 1540x2750 mm (width x height), area –3.868m2

- for landscape orientation: 2750x931 mm (width x height), area – 2.337m2.

Maximum dimensions of PYROSTOP 30-10 glazing of PILKINGTON company can be increased, as follows:

- for portrait orientation: 1680X3000 mm (width x height), area –4.235m2
 for landscape orientation: 3000x1015 mm (width x height), area 3.7465m2.
- For particular orientation: 5000x1015 mm (width x height), area 5.7405m2.
 Maximum dimensions of EKOFLAM 30 glazing of Vetrotech Saint-Gobain company can be increased, as follows:
 for portrait orientation: 1560x2760 mm (width x height), area –3.618m2
- for landscape orientation: 2300x1560 mm (width x height), area 3.015m2.

Non-loadbearing walls of ALUFIRE EI30 system can be also glazed with the glazing in accordance with table 3.

Table 3. Filings/glazing panel specification ALUFIRE EI60

Manufacturer	Panel Type	Max dimensions in portrait orientation width x height (mm)	Max dimensions in landscape orientation width x height (mm)	Thickness (mm)
PILKINGTON	Glass/PYROSTOP 60- 101	323x2700 1500x2500	2500x1300	23
PILKINGTON	Glass/PYROSTOP 60- 201	323x2700 1500x2500	2500x1300	27
VETROTECH SAINT GLOBAIN	Glass/CONTRAFLA M N2	1146x2223	1146x2223	23
GLASS TEAM	Glass/POLFLAM EI60	1423x2223	1146x2223	34
AGC	Glass/PYROBEL 25	1000x2888 1400x2500	2500x846	26.6
AGC	Glass/PYROBEL 25 EG	1000x2888 1400x2500	2500x846	30.4

Other ALUFIRE EI60 system filling systems not mentioned in table 2:

- glass units made of glazing presented in table 2 coupled with safety glass or laminated glass in accordance with EN 12150-1:2002 or EN ISO 12543-2:2000;

- opaque panels, with core made of three layers of gypsum plasterboards type F (each thickness of 12,5 mm) and external facing made of:

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- aluminium sheets thickness of 1,5 mm (opaque panel overall thickness 40,5 mm, maximum dimensions: 1500 x 2500 mm, width x height)
- stainless steel sheets thickness of 1,0 mm (opaque panel overall thickness 39,5 mm, maximum dimensions: 1500 x 2500 mm, width x height

Maximum dimension of PYROBEL 25 of ACG company can be increased to 1200x3465mm (width x height), area 3.494 m2.

Table 4. Filings/glazing panel specification ALUFIRE EI120

Manufacturer	Panel Type	Max dimensions in portrait orientation width x height (mm)	Max dimensions in landscape orientation width x height (mm)	Thickness (mm)
PILKINGTON	Glass/PYROSTOP 120-10	1418x2218	2218x1318	58
PILKINGTON	Glass/PYROSTOP 120-380	1200x2218	2218x630	64
AGC	Glass/PYROBEL 54	1418x2418	2218x918	54

Other ALUFIRE EI120 system filling systems not mentioned in table 4:

- glass units made of glazing presented in table 2 coupled with safety glass or laminated glass in accordance with EN 12150-1:2002 or EN ISO 12543-2:2000;

opaque panels, overall thickness of 62mm, with core made of two layers of FIREBOARD plated of KNAUF company (each thickness of 30mm) and external facing made of stainless steel plates thickness of 1.0mm, with the maximum dimensions: 1118 x 2000 mm, width x height in portrait orientation and 1895x636mm width x height in landscape orientation)

Maximum dimensions of PYROSTOP 120-10 glazing of PILKINGTON company can be increased, as follows: - for portrait orientation: 1702x2662 mm (width x height), area – 3,8056 m²,

- for landscape orientation: 2662x1582mm, (width x height), area 3,5372 m².
- Maximum dimensions of PYROSTOP 120-380 glazing of PILKINGTON company can be increased as follows:
 - for portrait orientation: 1320x2440 mm, (width x height) area 2,9410 m²
 - for landscape orientation: 2440x693 mm, (width x height) area 1.5440 m²

Maximum dimensions of opaque panel can be increased as follows:

- for portrait orientation: 1342x2400mm, (width x height) area 2.7056 m².
- for landscape orientation: 2274x763mm, (width x height) area 1,4583 m².

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Table 5. Filings/glazing panel specification ALUFIRE Vision Line EI30

Manufacturer	Panel Type	Max dimensions in portrait orientation width x height (mm)	Thickness (mm)
AGC	Glass/Pyrobel 16	1000x2888	17.3
AGC	Glass/Pyrobel 16 EG	1000x2888	21.1
AGC	Glass/Pyrobel 16 EG2	1000x2888	24.8
AGC	Glass/Pyrobel 16 EG Stratophone	1000x2888	21.8
AGC	Glass/Pyrobel 16 EG2 Stratophone	1000x2888	26.3
AGC	Glass/Pyrobel 25	1600x3000	26.6
AGC	Glass/Pyrobel 25 EG	1600x3000	30.4
AGC	Glass/Pyrobel 25 EG2	1600x3000	34.1
AGC	Glass/Pyrobel 25 EG Stratophone	1600x3000	31.1
AGC	Glass/Pyrobel 25 EG2 Stratophone	1600x3000	35.6

Glass can be taped (unilateral, bilateral) by foil.

Maximum dimensions of type PYROBEL 25 glazing of AGC company can be increased, as follows: 1920x3600 mm (width x height), area – 5,808 m2,

Table 6. Filings/glazing panel specification ALUFIRE Vision Line EI60

Manufacturer	Panel Type	Max dimensions in portrait orientation width x height (mm)	Thickness (mm)
AGC	Glass/Pyrobel 25	1000x2888	26.6
AGC	Glass/Pyrobel 25 EG	1000x2888	30.4
AGC	Glass/Pyrobel 25 EG2	1000x2888	34.1
AGC	Glass/Pyrobel 25 EG Stratophone	1000x2888	31.1
AGC	Glass/Pyrobel 25 EG2 Stratophone	1000x2888	35.6
Glass can be taped (unil	ateral, bilateral) by foil.		

Maximum dimensions of type PYROBEL 25 glazing of AGC company can be increased, as follows:

- 1200x3466 mm (width x height), area – 3,4945 m2.

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