

LET'S BUILD A BETTER FUTURE

FIRE RATED AND SMOKE EXHAUST SYSTEMS

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Fire-rated, smoke-tight & smoke exhaust systems by Aluprof

A wide range of systems offered by Aluprof allows for fabrication of a variety of structural elements that are responsible for "fire protection zones" in buildings, and provide appropriate conditions for evacuation of their occupants. These solutions include products linked to window & door systems, extending to a typical "stick assembly" curtain wall system solution. The fire resistance performance of these solutions, depending on the project requirements, is available in a variety of classes, from EI 15 to EI 120 for vertical assemblies, and achieves a class of REI30 / RE45 for roofs.

Aluprof's products that ensure safety of buildings' users in the event of a fire include internal partition walls with doors **MB-45EW** (EW30), internal & external partition walls with doors **MB-78EI** (EI15 to EI90) and **MB-60E EI** (EI15, EI30), automatic sliding doors **MB-78EI DPA** (EI15 to EI30), fire-rated windows **MB-86EI** (EI30), fire-rated walls **MB-118EI** (EI120), fire-rated facades **MB-SR50N EI** (EI30, EI60), fire-rated facades **MB-SR50N EI EFEKT** (EI30, EI60), glazed fire roofs (RE20, RE30, REI20, REI30), smoke control doors **MB-45D** (S_a , S_{200} [S_m]) and **smoke exhaust windows & vents**.

An important feature of the **ALUPROF** fire-rated solutions is their ability to interface with each other, one system to the next, whilst maintaining the necessary fire resistance. This is demonstrated with the integration of the **MB-78EI** door into a facade, enabling the whole structure to achieve a EI 30 or EI 60 class performance. The same possibility exists with **MB-60E EI** door that can be integrated into the MB-78EI wall and with **MB-60E EI** door that can be integrated into the **MB-118EI** wall system.

All products featured in this publication have been successfully tested in laboratories & research institutes in Poland & across Europe.



GAIN VALUABLE TIME!

Technical requirements as to fire-resisting constructions in buildings.

In accordance with the requirements of the building regulations as to buildings and their location, fire-resisting door and windows that are to be installed in the openings of vertical separating elements in a building should be designed and constructed in such a way, that in case of fire:

- prevent fire from spreading
- limit the spread of fire and smoke in the building to other rooms and zones,
- limit the spread of fire to other buildings,
- allow the evacuation of building occupants by limiting the level of heat radiation,
- ensure safety and facilitate the operation of emergency crews

The required fire resistance rating for partitions is determined by the provisions in force in the respective countries, and can be dependent on the fire resistance class, to which the building is suited. This is shown in the table below:

Fire resistive rating (building)	Fire resistance rating (partition wall)
A	EI 60
B	EI 30
C	EI 15
D	-
E	-



Symbols in the classification of fire resistance of a construction.

E – integrity



- no flames
- no smoke
- high temperature



Integrity (E) is the ability of a component or construction to maintain the integrity of the element on one side only, without spreading the fire to a non-heated side as a result of penetration of flames or hot gases.

EW – integrity and radiation reduction



- no flames
- no smoke
- lower thermal radiation



Reduction of radiation (W) is the ability of a component or construction to maintain the integrity of the element on one side only, to reduce the likelihood of fire spreading that may result from significant thermal radiation or through an element, or from its non-heated surface to adjacent materials.

EI – integrity and insulation



- no flames
- no smoke
- high temperature insulation



Insulation (I) is the ability of a component or construction to maintain the integrity of the element on one side only, without spreading the fire as a result of a significant heat flow from a heated side to a non-heated side. During the fire, the construction on the non-heated side reaches a temperature of not more than +140°C up to +180 °C.

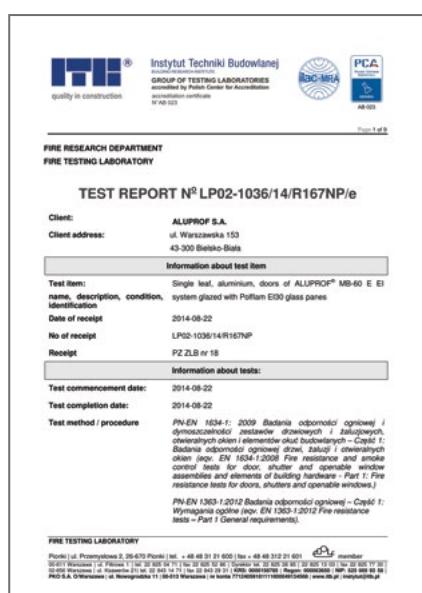
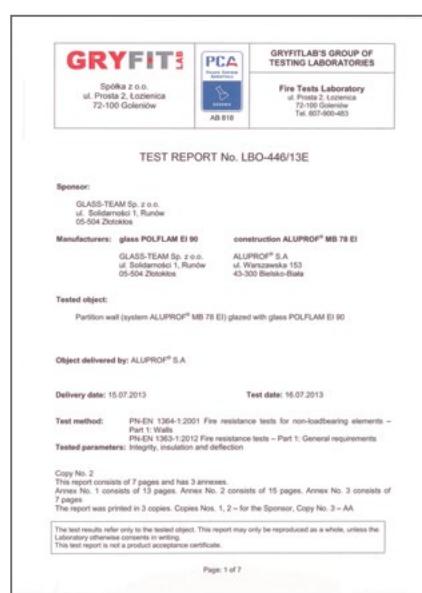
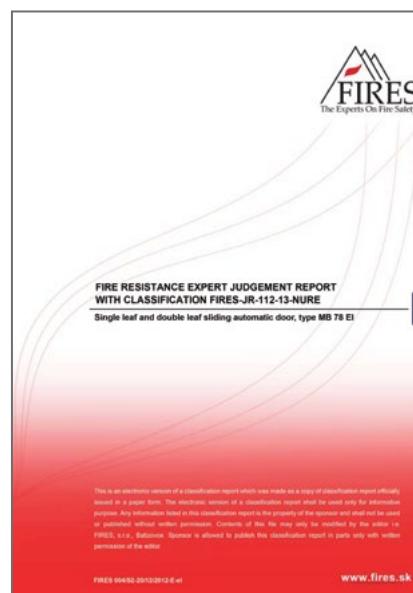
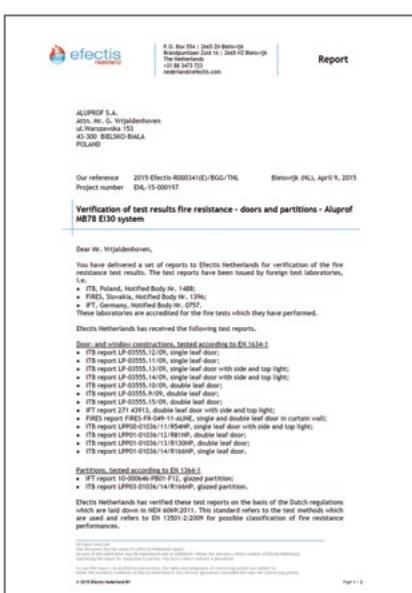
All the above-mentioned parameters are given in minutes. The number after a given symbol gives the laboratory time from starting of a fire, in which a parameter is maintained.

Research, reports, certificates.

Aluprof S.A. strives to continuously improve the quality of its products. The company's quality management system meets the requirements of standards **EN ISO 9001 / EN ISO 14001**, which has been confirmed by the inspection body **TÜV NORD**. The products offered by **Aluprof** meet all the requirements of the European standards as to the quality of alloys, tolerance and resistance characteristics. The company cooperates with many European research centres and building research laboratories, also specializing in the fire-resisting constructions: Building Research Institute (Poland), IFT Rosenheim (Germany), Warrington Certificate Exova (Great Britain), UBAtc (Belgium), Fires Institute (Slovakia), ÉMI Institute (Hungary) Incerc Institute (Romania), Efectis Institute (Netherlands), and others. The cooperation involves fire testing and reviews of the company's documents (reports and classifications). These documents enable ALUPROF systems-based products to be applied in fire-resisting constructions throughout Europe and beyond.



Examples of documents issued for ALUPROF systems-based fire-resisting constructions

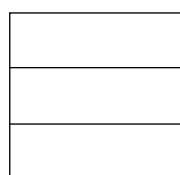


Maximum dimensions of a fire-resisting construction systems, types and maximum glass dimensions

The following table lists the maximum dimensions of fire-resisting constructions with notations and maximum glass dimensions depending on the type of construction and its fire resistance rating. For notations/dimensions of glass that are not listed in the table, please contact our Technical Support Department.

Construction	System	Class	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction /leaf-WxH	Max dims. of the glass- vertical rectangle [mm]	Max dims. of the glass- horizontal rectangle [mm]
	MB-60E EI	E130	Polflam	Polflam EI30	20	no limit x 4000	1500x3000	
	MB-78EI	E115	AGC	Pyrobel 8	9,3	no limit x 4000	1260x2360	1260x2360
		POLFLAM (Glass-Team)	Polflam EI15		20	no limit x 4000	1500x3000	2320x1465
	MB-78EI	E130	Vetrotech (Saint-Gobain)	Contraflam Lite 30	13	no limit x 4000	1500x3000	2500x1500
Fixed partitions			Vetrotech (Saint-Gobain)	Contraflam Lite 30	13		1500x3000	2500x1500
		E130	AGC	Pyrobel 16	17	no limit x 4000	1260x2360	1260x2360
			Polflam	Polflam EI30	20	no limit x 4300	2200x4200	3000x1500
		E130	Pilkington	Polflam EI30	22	no limit x 4000	2200x4000	2200x4000
			Promat Top	Pyrostop	16	no limit x 4800	2200x4200	2200x4200
		E130	Vetrotech (Saint-Gobain)	Promaglas	17	no limit x 4000	1300x2400	1300x2400
			Contraflam 30	Contraflam 30	16	no limit x 4000	1075x2300	2470x320
		E130	Pyroguard	Pyrogard T-EI30	18	no limit x 4000	1500x3000	3000x1500
			Q4glass	Q4Firestop	16,5	no limit x 4000	1470x2800	2385x1500
		E130	AGC	Pyrobel 25	26	no limit x 4000	1400x2700	2350x1400
Fixed partitions			Pyrobel 25 EG	Pyrobel 25 EG	30,4	no limit x 4000	1260x2360	1260x2360
		E160	Polflam	Polflam EI60	25	no limit x 4000	1500x3000	3000x1500
			(Glass-Team)	Polflam EI60	27	no limit x 4000	2420x4000	2420x4620
		E160	Pilkington	Polflam EI60	27	no limit x 5160	2420x4620	2420x4000
			Pyroguard	Pyrostop	23	no limit x 4000	1300x2400	1300x2400
		E160	Vetrotech (Saint-Gobain)	Pyrogard T-EI60	28	no limit x 4000	1470x2800	1470x2800
			Contraflam 60	Contraflam 60	25		1500x3000	2500x1500
		E190	Q4glass	Q4Firestop	27	no limit x 4000	1400x2700	2350x1400
			Polflam	Polflam EI90	32	no limit x 4000	1500x3000	1508x1467
		E1120	Polflam	Polflam EI120	35	no limit x 4000	1500x3000	1400x2500
			Pilkington	Pyrostop 120-10	58	no limit x 4000	1400x2500	1400x1068

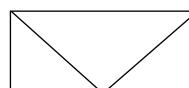
Construction	System	Class	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction /leaf-W x H	Max dims. of the glass- vertical rectangle [mm]	Max dims. of the glass- horizontal rectangle [mm]
			Vetrotech (Saint-Gobain)	Contraflam Strukture	23	no limit x 3600	1500x3600	1800x3000
	MB-78E1	E130	AGC	Pyrobel VL 16	17	no limit x 2900	1000x2900	
			Poliflam	Poliflam BR	30	no limit x 3600	1500x3600	1800x3000
Silicone joined glazed walls		E160	Vetrotech (Saint-Gobain)	Contraflam Strukture	31	no limit x 3400	1500x3400	1700x3000
			AGC	Pyrobel VL 25	26	no limit x 3480	1000x3480	1200x2900
			Poliflam	Poliflam BR	35	no limit x 3600	1500x3600	1800x3000
	MB-60E E1	E130	Poliflam	Poliflam E130	20	1400x2475 / 2580x2475		
	MB-78E1	E115	AGC	Pyrobel 8	9,3	1260x2360		
			POLFLAM (Glass-Team)	Poliflam E115	20	1400x2500 / 2500x2500		
			Vetrotech (Saint-Gobain)	Contraflam Lite 30	13	1160x2250		
			AGC	Pyrobel 16	17,3	1400x2500		
			Poliflam (Glass-Team)	Pyrobel 16 EG	21,2			
			Pilkington	Poliflam E130	20	1400x2500/2500x2500		
		E130	Promat Top	Pyrostop	16	1100x3006/2184x3006		
			Pyroguard	Promaglas	17	1400x2500/2500x2500		
			Vetrotech (Saint-Gobain)	Pyroguard T-E130	18	1075x2300		
			Q4glass	Contraflam 30	16	1400x2500/2500x2500		
			Poliflam	Q4Firestop	16,5	1260x2300		
	MB-86E1	E130	AGC	Poliflam E130	20	1500x2300/2400x1300	1385x2185	2236x1135
			Poliflam (Glass-Team)	Pyrobel 25	26	1400x2500/2500x2500		
				Poliflam E160	25	1400x2500/2500x2500		
			Pilkington	Poliflam E160	25	1100x3006/2184x3006		
	MB-78E1	E160	Pyrogard	Pyroguard T-E160	23	1400x2500		
			Vetrotech (Saint-Gobain)	Contraflam 60	25	1400x2500/2500x2500		
			Q4glass	Pyroguard	27	1400x2500		
			AGC	Pyrobel 90/35	36	1400x2500		
	MB-78E1	E190	Pilkington	Pyrostop 90-102	37	1265x2300		
			Vetrotech (Saint-Gobain)	Contraflam 90	40	1260x2360		



Silicone joined glazed walls



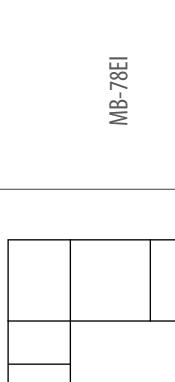
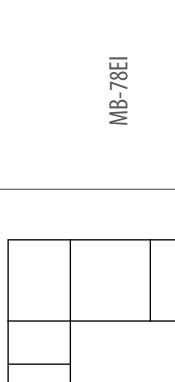
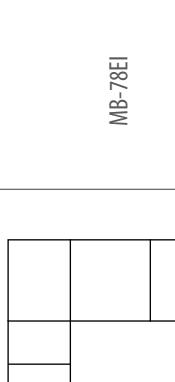
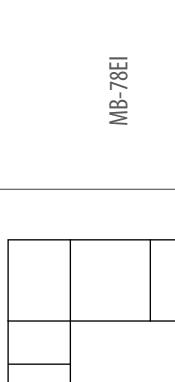
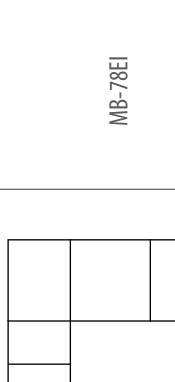
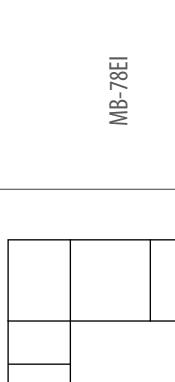
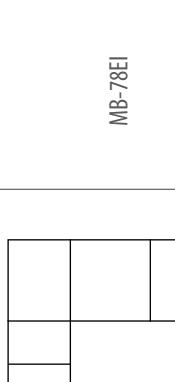
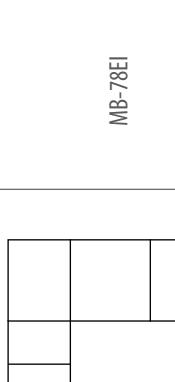
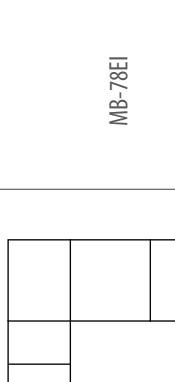
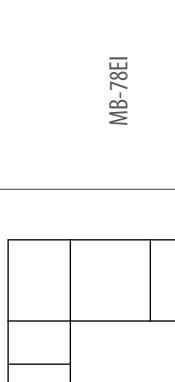
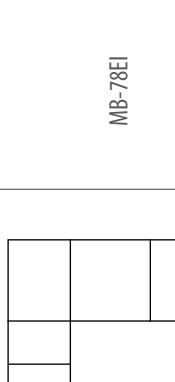
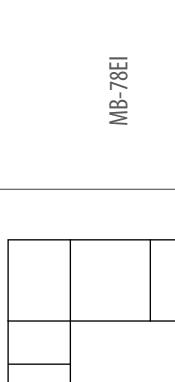
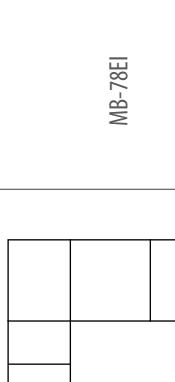
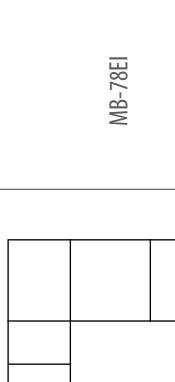
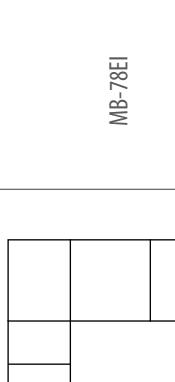
doors and windows



doors and windows

Construction	System	Class	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction /leaf-W x H	Max dims. of the glass-rectangle [mm]
Automatic sliding doors	MB-78 EI DPA	EI30	Polfiam	Polfiam EI30	20	1350x2550/1350x2710	
		Vetrotech (Saint-Gobain)		Contraflam 30	16, 18, 22	1350x2550	
			Polfiam (Glass-Team)	Polfiam EI30	20	1500x3000	2400x1500
			Pilkington	Pyrostop 30	16	1400x2400	1800x1200
		Vetrotech (Saint-Gobain)	Contraflam 30	Contraflam 30	16	1500x3000	1700x1200
				Contraflam 30 - 20	20	1500x3000	1700x1200
		Polfiam	Polfiam EI60	Polfiam EI60	25	1500x3000	2400x1500
		Pilkington	Pyrostop 60	Pyrostop 60	23	1400x2400	1800x1200
		Vetrotech (Saint-Gobain)	Contraflam 60	Contraflam 60	25	1400x2400	1800x1200
				Contraflam 60 - 3	27	1500x3000	1700x1200
		Q4glass	Q4Fire Stop 60	Q4Fire Stop 60	30	1500x3000	2000x1500
curtain wall	MB-SR50N EI EFEKT	EI30	Polfiam	Polfiam EI30	20	1500x3000	2000x1500
	MB-SR50N EI EFEKT	EI60	Polfiam	Polfiam EI60	25	1500x3000	2000x1500
	Vetrotech (Saint-Gobain)		Contraflam	Contraflam	25, 29	1500x3146	
		Q4glass	Q4Firestop	Q4Firestop	30	1500x3000	2000x1500
	RE130/RE30	MB-SR50N EI	Polfiam	Polfiam HEI30	22	1250x2350	
		Vetrotech (Saint-Gobain)	Contraflam Lite 30 Horizontal	Contraflam Lite 30 Horizontal	20	1100x2100	
		skylight					

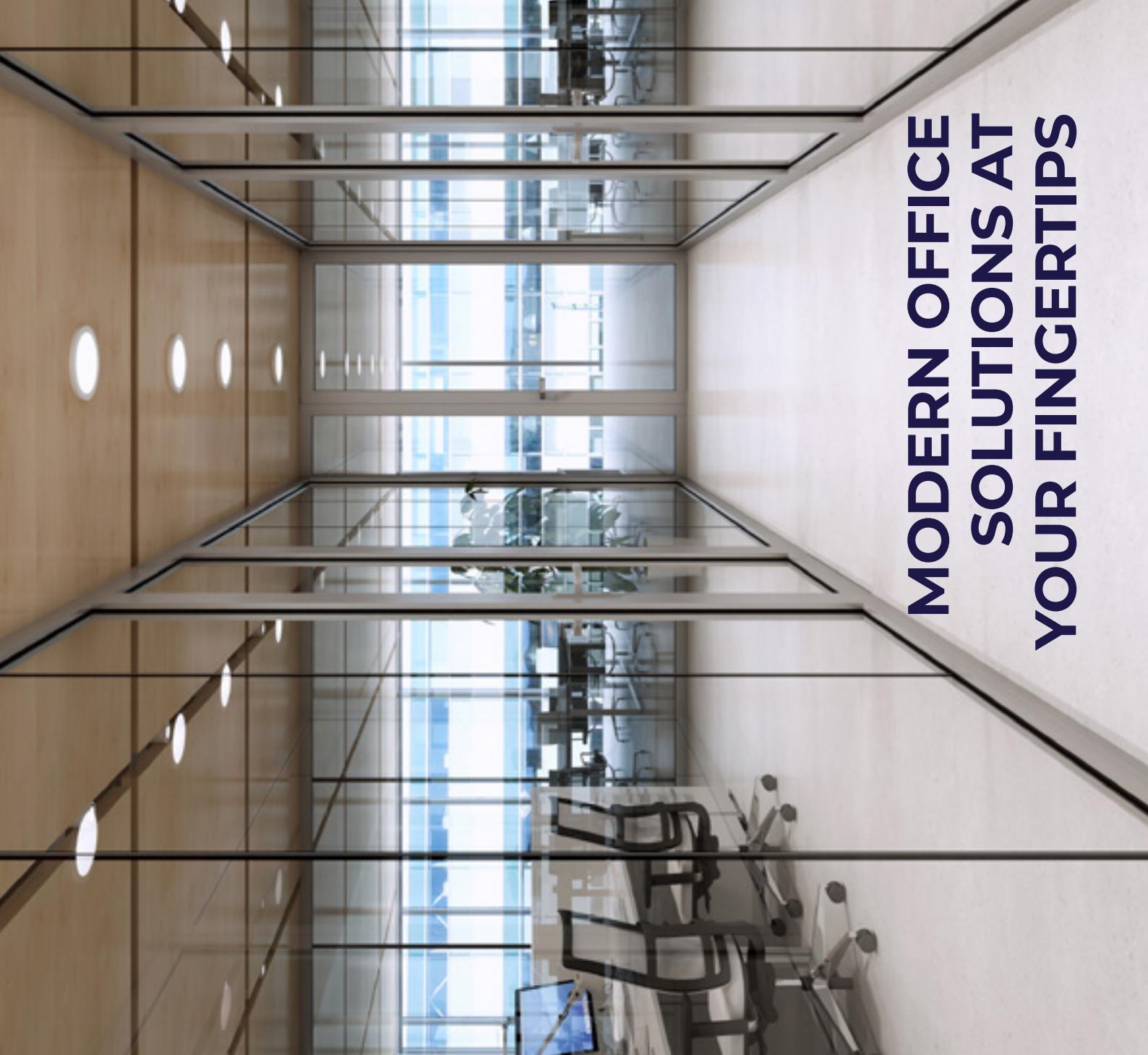
List of constructions available in different fire resistance classes

Class	Construction	System	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction/ leaf - W x H [mm]	Max dims. of the glass - vertical rectangle [mm]	Max dims. of the glass - horizontal rectangle [mm]	Page
EW30		MB-78EI	Vetrotech (Saint-Gobain)	Contraflam Lite 30	13	no limit x 4000	1500x3000	2500x1500	18
EI15		MB-78EI	AGC	Pyrobel 8	9,3	no limit x 4000	1260x2360	1260x2360	18
EI15		MB-78EI	Polflam	Polflam EI15	20	no limit x 4000	1500x3000	3000x1500	18
EI15		MB-78EI	Vetrotech (Saint-Gobain)	Contraflam Lite 30	13, 15, 19	no limit x 4000	1500x3000	2500x1500	18
EI30		MB-60EI	AGC	Pyrobel 8	9,3	1260x2360	1260x2360	1260x2360	14
EI30		MB-78EI	Polflam	Polflam EI130	20	no limit x 4000	1500x3000	1260x2360	18
EI30		MB-78EI	AGC	Pyrobel 16	17	no limit x 4000	1260x2360	1260x2360	14
EI30		MB-78EI	Polflam	Polflam EI30	20	no limit x 4300	2200x4200	3000x1500	18
EI30		MB-78EI	Polflam	Polflam EI30	22	no limit x 4000	2200x4000	2200x4000	18
EI30		MB-78EI	Polflam	Polflam EI30	22	no limit x 4800	2200x4200	2200x4200	18
EI30		MB-78EI	Pilkington	Pyrostop	16	no limit x 4000	1300x2400	1300x2400	18
EI30		MB-78EI	Promat Top	Promaglas	17	no limit x 4000	1075x2300	2470x1320	18
EI30		MB-78EI	Pyroguard	Pyroguard T-EI30	18	no limit x 4000	1470x2800	2385x1500	18
EI30		MB-78EI	Vetrotech (Saint-Gobain)	Contraflam 30	16	no limit x 4000	1500x3000	3000x1500	18
EI30		MB-78EI	Q4glass	Q4firestop	16,5	no limit x 4000	1400x2700	2350x1400	18

Class	Construction	System	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction-/leaf - W x H [mm]	Max dims. of the glass - vertical rectangle [mm]	Max dims. of the glass - horizontal rectangle [mm]	Page
El30		MB-78EI	Vetrotech (Saint-Gobain)	Conträflam Struktur	23	no limit x 3600	1500x3600	1800x3000	24
El30		MB-60EI	Polflam	Pyrobel VL 16	17	no limit x 2900	1000x2900		
El30		MB-78EI	AGC	Polflam EI30	20	1400x2475/2580x2475	1400x2500		
El30	Doors and windows	MB-86EI	Polflam	Pyrobel 16	17,3	1400x2500	1400x2500		
El30		MB-78EI DPA	AGC	Pyrobel 16 EG	21,2	1400x2500	1400x2500		
El30		MB-SR50NEI	Polflam	Polflam EI30	20	1400x2500/2500x2500	1100x3006/2184x3006		
El30		MB-SR50NEI EFFECT	Pilkington	Pyrostop 30-10	15	1400x2400	1400x2400		
El30		Facade	Vetrotech (Saint-Gobain)	Promaglas	17	1400x2500	1400x2500		
El60		MB-78EI	Vetrotech (Saint-Gobain)	Contraflam 30	16	1400x2500 / 2500x2500	1260x2300	1260x2300	18
El60		Fixed partitions	Pyroguard	Q4Firestop	16,5	1385x2185	2236x1135	1385x2300/2400x1300	32
El60		Fixed partitions	Pyroguard	Polflam EI30	20	1350x2550/1350x2710			
El60		Fixed partitions	Pyroguard	Polflam	20	1350x2550			
El60		Fixed partitions	Pyroguard	Pyrobel	25	no limit x 4000	1260x2360	2700x1400	
El60		Fixed partitions	Pyroguard	Polflam	25	no limit x 4000	1500x3000	3000x1500	
El60		Fixed partitions	Pyroguard	Polflam	27	no limit x 4000	2420x4000	2420x4000	18
El60		Fixed partitions	Pyroguard	Pilkington	27	no limit x 5160	2420x4620	2420x4620	
El60		Fixed partitions	Pyroguard	Pyroguard T-EI60	28	no limit x 4000	1300x2400	1300x2400	
El60		Fixed partitions	Pyroguard	Pyroguard	28	no limit x 4000	1470x2800	1470x2800	

Class	Construction	System	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction-/leaf - W x H [mm]	Max dims. of the glass - vertical rectangle [mm]	Max dims. of the glass - horizontal rectangle [mm]	Page
El60	MB-78EI Fixed partitions	MB-78EI	Vetrotech (Saint-Gobain)	Contraflam 60	25		1500x3000	2500x1500	18
El60	Silicone joined glazed walls	MB-78EI	Q4glass	Q4Firestop	27	no limit x 4000	1400x2700	2350x1400	
El60	Doors and windows	MB-78EI	Vetrotech (Saint-Gobain)	Contraflam Struktur	31	no limit x 4000	1500x3400	1700x3000	24
El60	Doors and windows	MB-SR50NEI	AGC	Pyrobel VL 25	26	no limit x 3480	1000x3480	1200x2900	24
El60	Doors and windows	MB-SR50NEI	Polflam	Polflam BR	35	no limit x 3600	1500x3600	1800x3000	
El60	Doors and windows	MB-SR50NEI	AGC	Pyrobel 25	26,6	1400x2500 / 2500x2500			
El60	Doors and windows	MB-SR50NEI	Polflam	Polflam EI60	25	1400x2500 / 2500x2500			
El60	Doors and windows	MB-SR50NEI	Pilkington	Polflam EI30	20	1100x3006 / 2184x3006			
El60	Doors and windows	MB-SR50NEI	Vetrotech (Saint-Gobain)	Pyrostop	23	1400x2500			
El60	Doors and windows	MB-SR50NEI	Q4glass	Contraflam 60	25	1400x2500			
El60	Doors and windows	MB-SR50NEI	Q4glass	Q4Firestop	27	1260x2300			
El60	Doors and windows	MB-SR50NEI	Pilkington	Polflam	25	1500x3000			
El60	Doors and windows	MB-SR50NEI	Pilkington	Pyrostop	23	1400x2400			
El60	Doors and windows	MB-SR50NEI	Vetrotech (Saint-Gobain)	Contraflam 60	25	1500x3000			
El60	Doors and windows	MB-SR50NEI	Q4glass	Contraflam 60-3	27	1500x3000			
El60	Doors and windows	MB-SR50NEI	Polflam	Q4Firestop	60	1500x3000			
El60	Doors and windows	MB-SR50NEI	Vetrotech (Saint-Gobain)	Polflam SG EI-60	27	1500x3000			
El60	Doors and windows	MB-SR50NEI	Q4glass	Contraflam 60	25,29	1576x3146			
El60	Doors and windows	MB-SR50NEI	Q4glass	Q4Firestop	30	1500x3000	2000x1500		
El90	Fixed partitions	MB-78EI	Polflam						18
El90	Fixed partitions	MB-78EI	Polflam		32	no limit x 4000	1500x3000		

Class	Construction	System	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction-/leaf - W x H [mm]	Max dims. of the glass - vertical rectangle [mm]	Max dims. of the glass - horizontal rectangle [mm]	Page
EI90	MB-78EI Doors and windows		AGC	Pyrobel 90/35	36	360x460			18
EI120	MB-118EI Fixed partitions		Pilkington	Pyrostop 90-102	37	1265x2300			36
RE30/RE30	MB-SRS50NEI skylight		Vetrotech (Saint-Gobain)	Contraflam 90	40	1260x2360			46
			Polflam	Polflam EI120	35	no limit x 4000	1500x3000	1508x1467	
			Pilkington	Pyrostop 120-10	58	no limit x 4000	1400x2500	1400x1068	
			Polflam	Polflam HE30	22		1250x2350		
			Vetrotech (Saint-Gobain)	Contraflam Lite 30 Horizontal	20		1100x2100		



**MODERN OFFICE
SOLUTIONS AT
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GLAZED PARTITION SYSTEMS:

- silicone joined glazed walls
MB-78EI rated **EI30 & EI60**
- architecturally-striking shopfronts and high-quality moveable & folding doors
MB-EXPO i MB-EXPO MOBILE
- office partitions with transparent door **MB-45 OFFICE**
- double glazed office partitions
MB-80 OFFICE

ALUPROF
ALUMINUM SYSTEMS

Fire rated partitions with doors

MB-60E EI



EI 15 EI 30



MB-60E EI enables the fabrication of fire-resisting internal or exterior single or double leaf doors. It also enables the fabrication of "technical windows" and fire-resisting partitions. **MB-60E EI**-based constructions are classified EI15 or EI30 to EN 13501-2+A1, doors can additionally meet smoke-tightness requirements in class S₂₀₀, S_a to EN 13501-2 + A1. The system is classified as non-fire spreading (NRO).

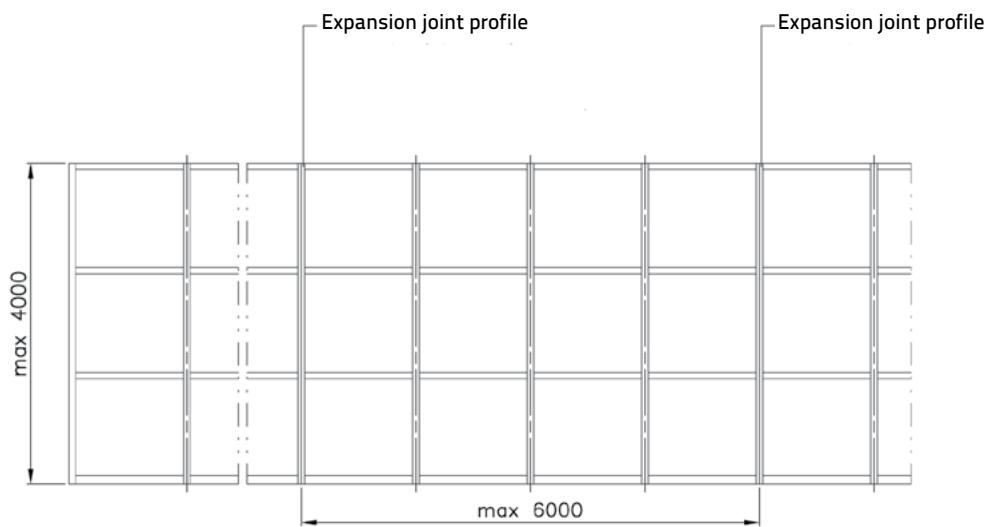
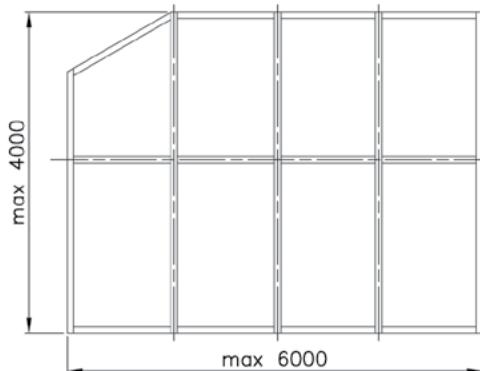
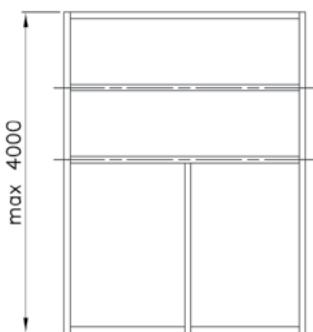
This solution is based on aluminium profiles with thermal break (system MB-60E) with the structural depth of profiles of 60 mm. The fire resistance of the construction is ensured by its fire insulation components that are mounted in internal chambers of its profiles. In addition, constructions are equipped with intumescent tapes, which stop the fire from spreading.

The system enables the application of all common fire-resisting glass classified EI15 and EI30 (thickness from 5 to 41 mm). Unlike other fire-resisting systems, **MB-60 E EI** glass is fastened on the inner face using glazing strips. Special steel elements are an important element in securing the glass before falling out during the fire.

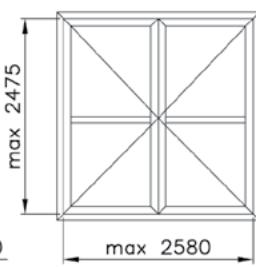
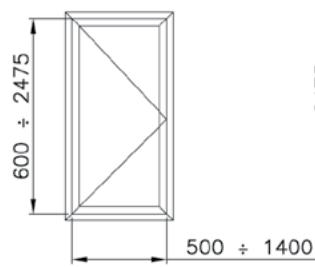
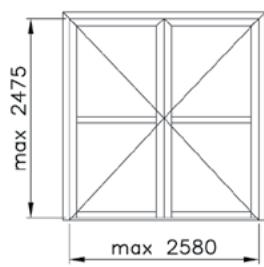
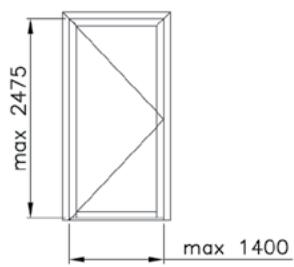
MB-60E EI enables the fabrication of doors of the following max. leaf dimensions: W up to 1.4 m, H up to 2.475 m. Double leaf door can be 2.58 m wide. Design capabilities and compatibility with other MB systems makes this solution a very attractive proposition in that class of products, whilst providing an excellent fire protection.



Max. dims. of the construction



Doors

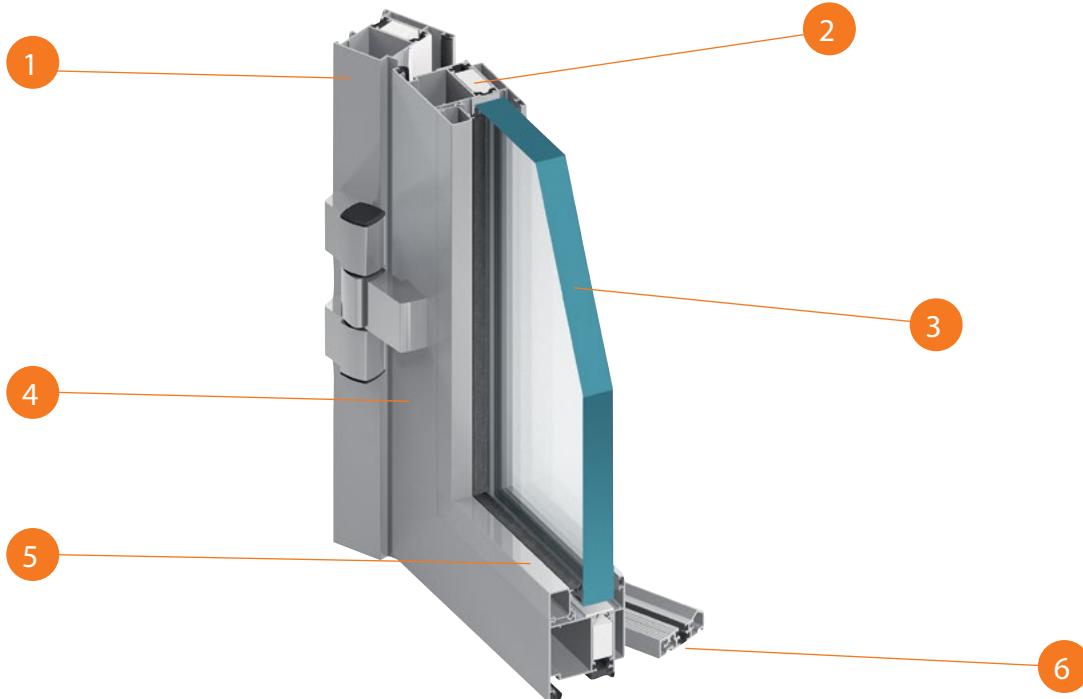


Technical window

TECHNICAL INFORMATION		TECHNICAL PARAMETERS	
Depth of the partition frame & door	60 mm	Air tightness	class 2, PN-EN 12207
Depth of the door leaf	60 mm	Water tightness	class 3A, PN-EN 12208
Range of glazing	5 – 41 mm	Fire resistance rating	EI15, EI30, EN 13501-2 +A1

Fire rated partitions with doors

MB-60E EI

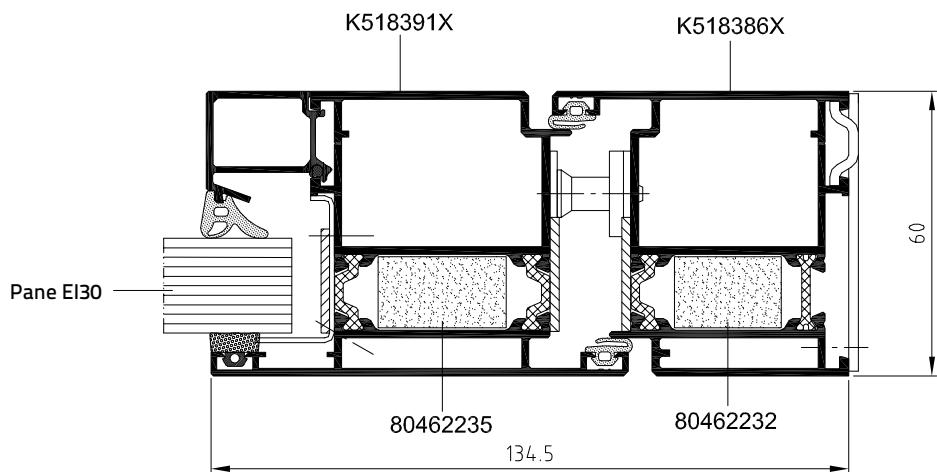


- ① MB-60E-based fire system enables the use of common elements and allows a simple and fast prefabrication
- ② Constructions classified EI15, EI30
- ③ The system enables the application of all common fire-resisting glass of different classes and of a thickness ranging from 5 to 41 mm.
- ④ Structural depth of profiles: 60 mm
- ⑤ Glazing strips used for glazing on the inner face
- ⑥ Available solutions with or without threshold

<p>European Technical Assessment</p> <p>ETA-18/0914 of 17/12/2018</p> <p>General Part</p> <p>Technical Assessment Body issuing the European Technical Assessment</p> <p>Instytut Techniki Budowlanej</p> <p>Trade name of the construction product</p> <p>ALUPROF MB-60E EI</p> <p>Product family to which the construction product belongs</p> <p>Internal Partition Kit for use as non-load bearing walls</p> <p>Manufacturer</p> <p>ALUPROF S.A. ul. Warszawska 153 43-300 Bielsko-Biala, Poland</p> <p>Manufacturing plant</p> <p>ALUPROF S.A. ul. Warszawska 153 43-300 Bielsko-Biala, Poland</p> <p>This European Technical Assessment contains</p> <p>This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of</p> <p>Guideline for European Technical Approval ETAG 003, edition December 1998 amended by 2014, Part 1: Internal partition kits for use as non-loadbearing walls - used as European Assessment Document (EAD)</p>	<p>Member of</p> <p>www.eota.eu</p> <p>Instytut Techniki Budowlanej</p> <p>00-611 WARSZAWA ul. FILTRÓW 1 tel. (+48 22) 825 04 71, (+48 22) 825 76 50 fax (+48 22) 825 52 68</p> <p>Czona 100% Europejskiej Organizacji Technicznej w Budownictwie - UETA</p> <p>Czona 100% Europejskiej Organizacji Technicznej ds. Gospodarki Technicznej - EOTA</p> <p>Seria: APROBATA TECHNICZNE</p> <p>APROBATA TECHNICZNA ITB AT-15-6006/2016</p> <p>Na podstawie rozporządzenia Ministra Infrastruktury z dnia 8 listopada 2004 r. w sprawie gospodatki technicznej oraz jednostek organizacyjnych upoważnionych do wydawania dokumentów technicznych Dr. U. z 2014 r. poz. 1040, w wyniku postępowania zprobatywnego dokonanego w Instytucie Techniki Budowlanej w Warszawie, na wniosek firmy:</p> <p>ALUPROF S.A. 43-300 Bielsko-Biala, ul. Warszawska 153</p> <p>stwierdza się przydatność do stosowania w budownictwie wyrobów pod nazwą:</p> <p>Drzwi przeciwpożarowe i/lub dymoszczelne systemu ALUPROF® MB-78EI i ALUPROF® MB-60E EI</p> <p>I drzwi przeciwpożarowe systemu ALUPROF® MB-78EI EI DPA</p> <p>oraz zestaw wyrobów do wykonywania przeciwpożarowych</p> <p>ścian wewnętrznych i zewnętrznych</p> <p>systemu ALUPROF® MB-78EI</p> <p>w zakresie i na zasadach określonych w Załączniku, który jest integralną częścią niniejszej Aprobaty Technicznej ITB.</p> <p>Załącznik:</p> <p>Postanowienia ogólne i techniczne</p> <p>Warszawa, 29 grudnia 2016 r.</p> <p>DYREKTOR Instytut Techniki Budowlanej dr inż. Marcin M. Kral</p>
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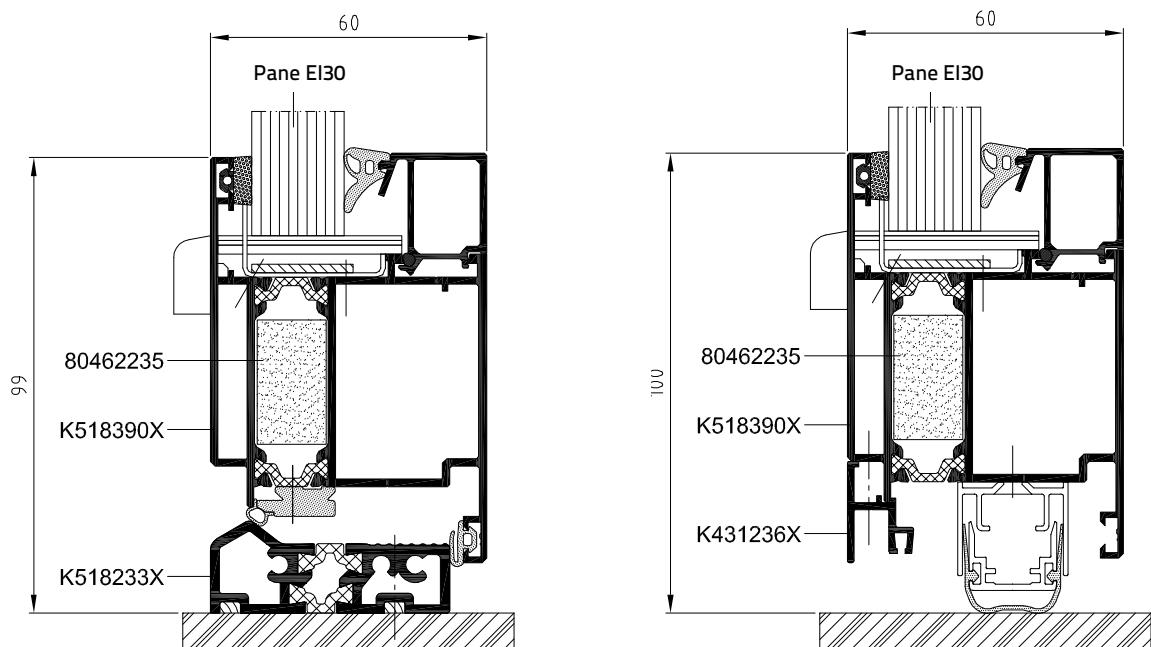
MB-60E EI-based constructions are covered by the Technical Approval of the No. AT-15-6006/2016 and the European Technical Assessment ETA-18/091

Door frame and door leaf – cross-section



Bottom cross-section with threshold

Door leaf with drop seal – cross-section



Fire rated doors and wall partitions

MB-78EI



EW 15 EW 30

EI 15 EI 30 EI 45 EI 60 EI 90



The **MB-78EI** system has been developed for the producing of internal or external fire-rated partition walls, with single- or double-leaf doors featured by a fire resistance class of EI 15, EI 30, EI 45 EI 60 or EI 90 to EN 13501-2. In most cases, these constructions can also have smoke control characteristics (classes S_{200} & S_a). Numerous tests and calculations have shown that **MB-78EI**-based products have a very good thermal and acoustic insulation. Due to its characteristics, optimized technology & production costs, the compatibility with other ALUPROF window and door systems and the constant technical development, it is a very popular product, widely used by the construction professionals.

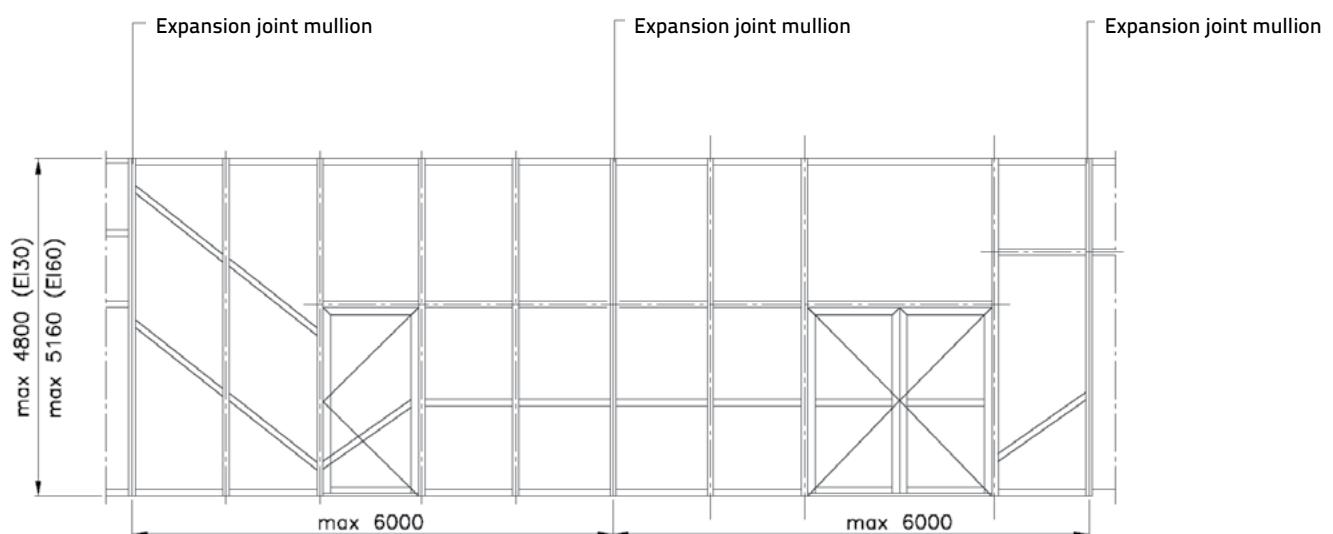
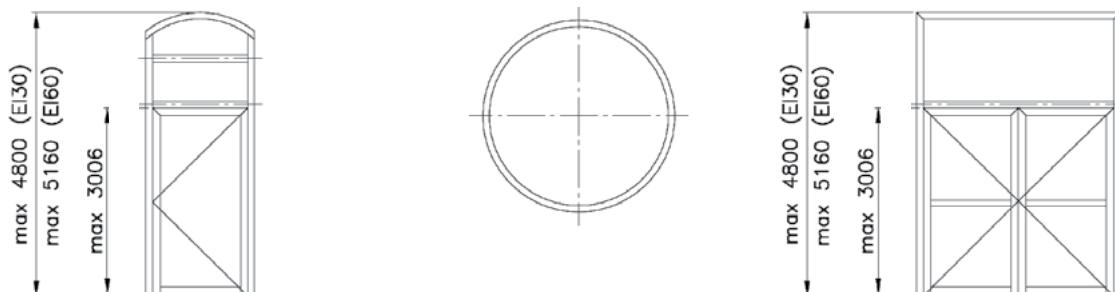
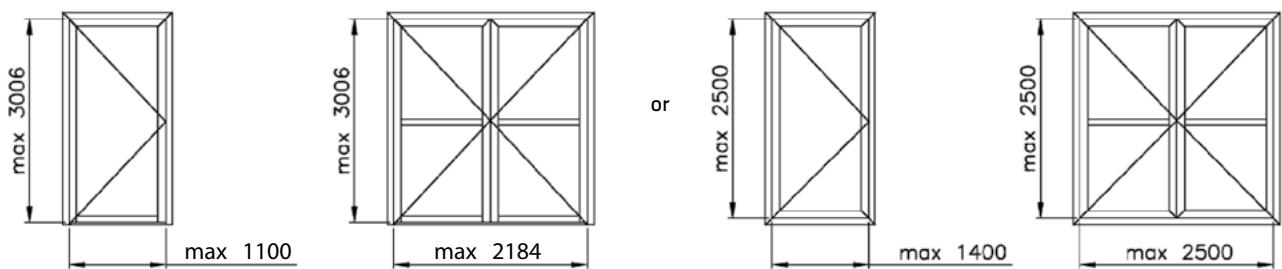
The structure of the **MB-78 EI** system is based on the thermally-insulated, 78 mm deep aluminium profiles. They are characterized by a low overall heat transfer coefficient "U," thanks in the main, to specialist design thermal break, 34mm in width. The resistance to high temperature is assured by special fire insulation elements – GKF or CI – introduced into the inner chambers of the profiles and into insulating spaces between profiles and steel accessories and joints.

Angular wall connections achievable with the system, the possibility of bending & curving profiles, as well as the use of diagonal cross-pieces and decorative muntin bars glued on glass are the features that affect the shape and aesthetics of a building.

The range of permissible dimensions of the construction includes fixed partitions up to 5.16 m high and single-swing doors with leaf dimensions: W up to 1.4 m; H up to 3.0 m; the width of double doors may achieve 2.5 m. The **MB-78EI** door system can exist as an individual "goal-post frame" as part of a larger composite "window wall" or in fire resistant facade, our **MB-SR50N EI** system. Structures & door sets of this type, both single & double leaf door arrangements, have been successfully tested in a notified laboratory, obtaining fire resistance classes of EI 30 & EI 60.



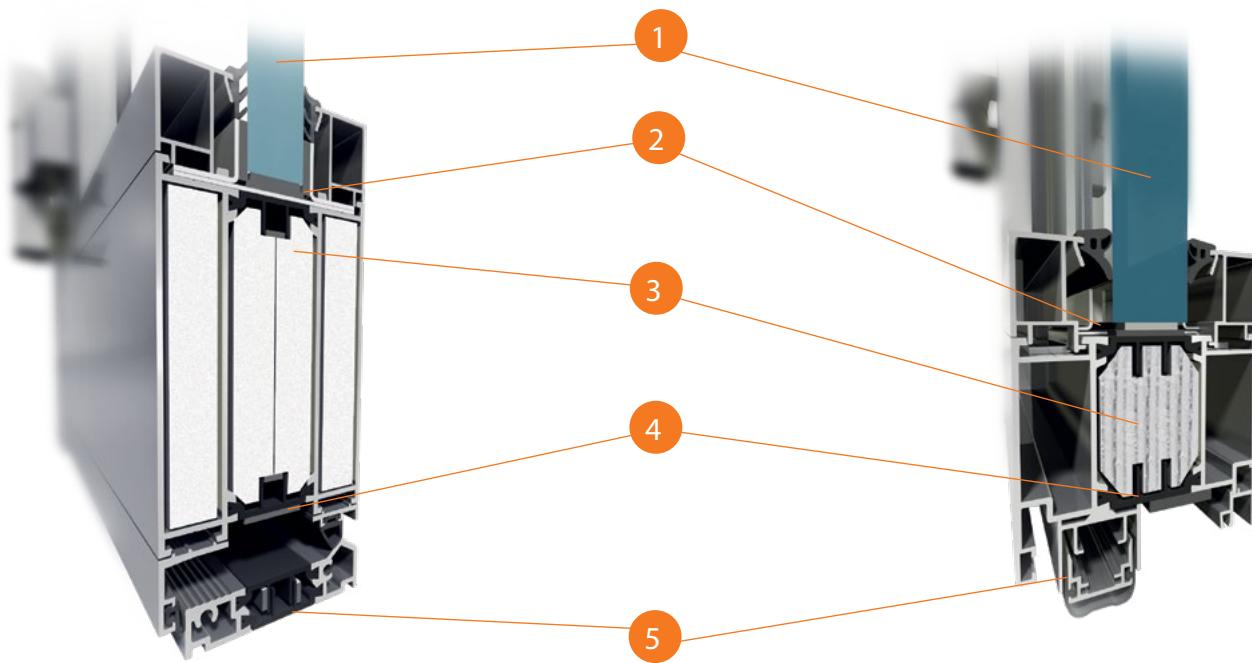
Max. dimensions of the wall segments



TECHNICAL SPECIFICATION		TECHNICAL PARAMETERS	
Depth of wall & door frame	78 mm	Air Permeability	Class 2, PN-EN 12207:2001
Depth of leaf	78 mm	Watertightness	Class 5A, PN-EN 12208:2001
Width of wall & door frame	51 mm / 72 mm	Fire resistance	Classes EI 15, EI 30, EI45, EI 60, EI 90 in accordance with EN 13501-2, classes EI 15, EI 30, EI45, EI 60 in accordance with AT-15-6006/2016
Width of door leaf profiles	72 mm / 51 mm	Thermal insulation (coeff. R_w)	from 1,6 W/(m ² K)
Glazing range	8 – 65 mm	Acoustic Insulation (coeff. R_w)	up to 41 dB

Fire rated doors and wall partitions

MB-78EI



- ① Single or double fire-resistant glass of a thickness of up to 65 mm
- ② Steel accessories and expanding tapes that protect the structure from high temperatures
- ③ GKF or CI type fire protection inserted inside the profiles, enables performance classes EI15 to EI 90
- ④ Profiled thermal break that provides adequate protection against heat loss (U_f from 1.6 m²K)
- ⑤ Different door bottom rail seal solutions: with & without threshold profile option, obtaining a smoke-proof class S_{200} S_a

Extensive design possibilities, a wide range & variety of hinge products, locks, door closers & other hardware, alongside an optimised manufacturing process, are not the only advantages of this system. It also allows the realisation of the product solutions contained on the following pages: **MB-78EI DPA** automatic sliding door of an EI 15 or EI 30 class & **MB-118EI** walls of an EI 120 class.

The thickness of infills achievable with the **MB-78EI** system is from 8 to 65 mm. Infills may include all typical fire-resistant glass panes, as well as layered opaque elements consisting of sheet metal and appropriate panels that ensure the required fire resistance.

Range of possible fire-resistant glazing

for use in the MB-78EI systems includes:

- Pyrobel of a thickness of 9.3 mm – 36 mm
- Polflam of a thickness of 20 mm – 25 mm
- Contraflam Lite of a thickness of 13 mm – 22 mm
- Contraflam 30 of a thickness of 16 mm – 20 mm
- Contraflam 60 of a thickness of 25 mm – 35 mm
- Contraflam 90 of a thickness of 40 mm
- Pyrostop of a thickness of 15 mm – 45 mm
- Promaglas of a thickness of 17 mm – 30 mm
- Pyranowa of a thickness of 15 mm – 27 mm
- Fireswiss of a thickness of 15 mm – 28 mm
- Q4Firestop of a thickness of 16,5 mm – 27 mm

ITB® Instytut Techniki Budowlanej
00-611 WARSZAWA | ul. PIĘTRÓWKA 1 | tel. (+48 22) 625 04 71, (+48 22) 625 76 55 | fax (+48 22) 625 52 80
Cetniewo Kierowcy i Akceptacji Technicznej w Budownictwie UATeC
Cetniewo Kierowcy i Organizacji ds. Dostawy Technicznej - LOTa
Seria: APROBATA TECHNICZNA

**APROBATA TECHNICZNA ITB
AT-15-6006/2016**

Na podstawie rozporządzenia Ministra Infrastruktury z dnia 8 kwietnia 2004 r. w sprawie sporządzenia technicznych oraz jednostek organizacyjnych uzupełniających do tego wymiany Decreto U. z 2014 r., poz. 1040, w wyniku postępowania aprobowanego dokonanego w Instytucie Techniki Budowlanej w Warszawie, na wniosek firmy:

ALUPROF S.A.
43-300 Bielsko-Biała, ul. Warszawska 153

stwierdza się przydatność do stosowania w budownictwie wyrobów pod nazwą:

Drzwi przeciwpożarowe i/lub dymoszczelne systemów ALUPROF® MB-78EI i ALUPROF® MB-60E EI i drzwi przeciwpożarowe systemu ALUPROF® MB-78EI DPA oraz zestaw wyrobów do wykonywania przeciwpożarowych ścian wewnętrznych i zewnętrznych systemu ALUPROF® MB-78EI

w zakresie i na zasadach określonych w Załączniku, który jest integralną częścią niniejszej Aprobaty Technicznej ITB.

Ten dokument jest jedynie dokumentem informacyjnym i nie może być uznany za dokument techniczny. Wszelkie zmiany w konstrukcji i technologii powinny być zatwierdzone przez Instytut Techniki Budowlanej.

Załącznik:
Postanowienia ogólne i techniczne

Warszawa, 29 grudnia 2016 r.

Termin ważności:
29 grudnia 2021 r.

Dyrektor
Instytutu Techniki Budowlanej
dr inż. Maciej M. Kral

Aprobata Techniczna ITB AT-15-6006/2016 z grudnia 2016 r. jest nowelizacją Aprobaty Technicznej ITB AT-15-6006/2016 z grudnia 2016 r. Dokument Aprobaty Technicznej ITB AT-15-6006/2016 zawiera 214 stron. Tekst tego dokumentu można konsultować w wersji elektronicznej, a także w wersji drukowanej. Wszelkie zmiany w konstrukcji i technologii powinny być zatwierdzone przez Instytut Techniki Budowlanej.

The **MB-78EI** system has a Technical Approval of the No. AT-15-6006/2016 valid until 29.12.2021 and a certificate CERTIFIRE by the Institute of Warrington Certification Ltd No. CF 5138.

certifire
CERTIFICATE OF APPROVAL
No CF 5138

This is to certify that, in accordance with
TS25 General Requirements for Certification of Fire-Resistant Products
The undermentioned products

ALUPROF S.A.
Ul. Warszawska 153,
43-300 Bielsko-Biała, Poland
Tel.: +48 33 891 53 00

Have been assessed against the requirements of the Technical Schedule(s)
defined below and are certified as being subject to the conditions
appended hereto:

CERTIFIED PRODUCT
Aluminium Framing Systems
Type MB 78 EI for Glazed
Walls and Doors

TECHNICAL SCHEDULE
TS25 Fire Resistant Glass,
Glazing Systems and
Materials

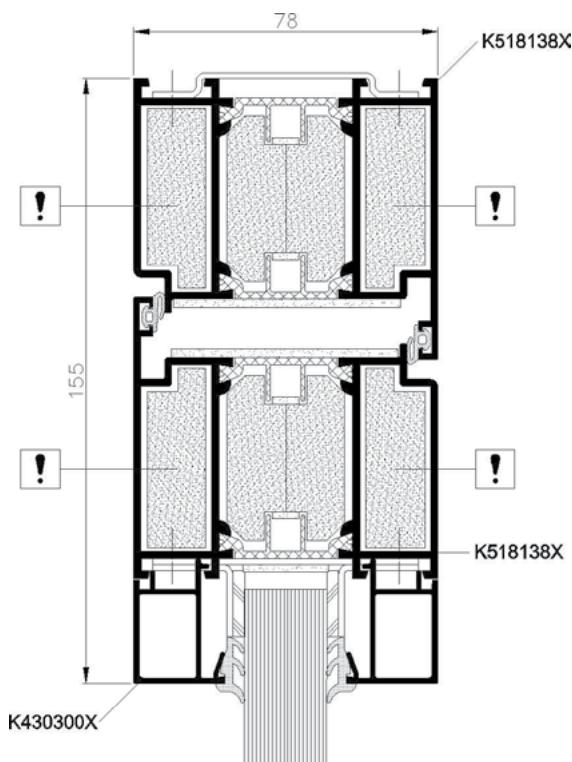
Signed and sealed for and on behalf of CERTIFIRE

Sir Ken Knight
Chairman - Management Council
Page 1 of 29

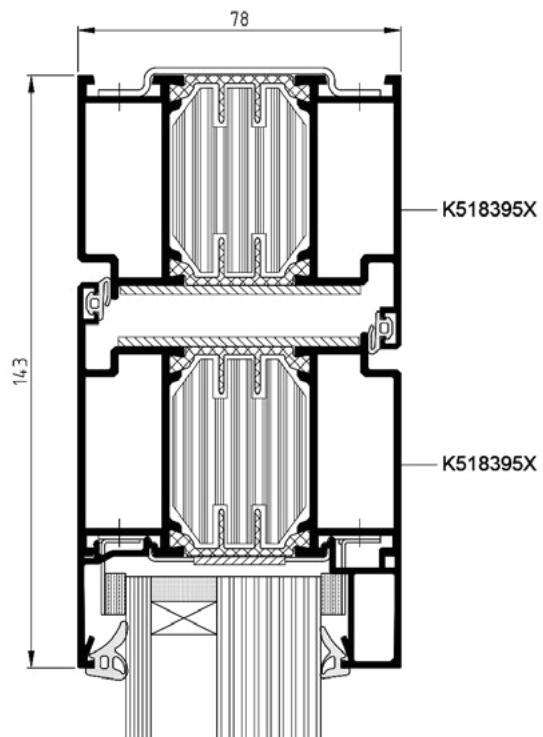
Issued: 2nd April 2013 Valid for: 3rd April 2018

CERTIFIRE Seals shall be valid where issued

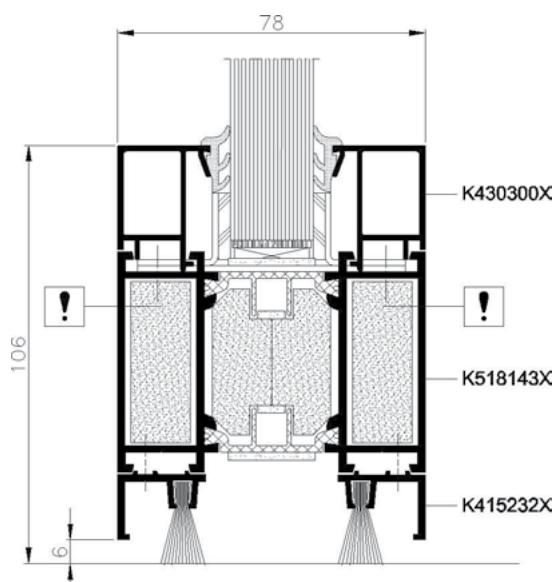
Door frame and door leaf – cross-section



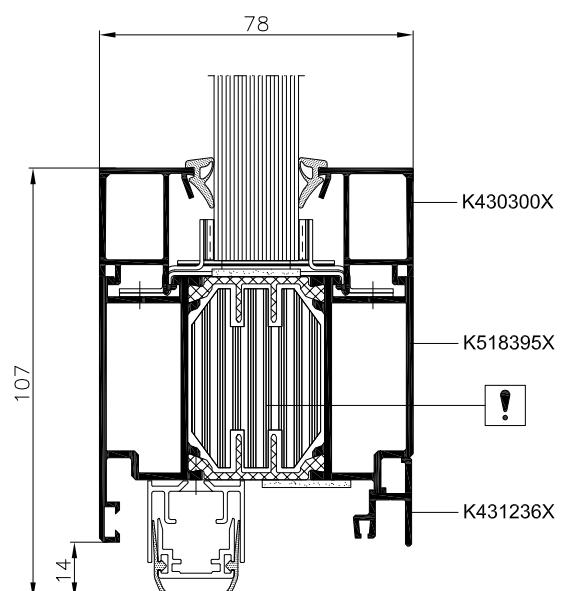
Door frame and door leaf with CI infills – cross-section



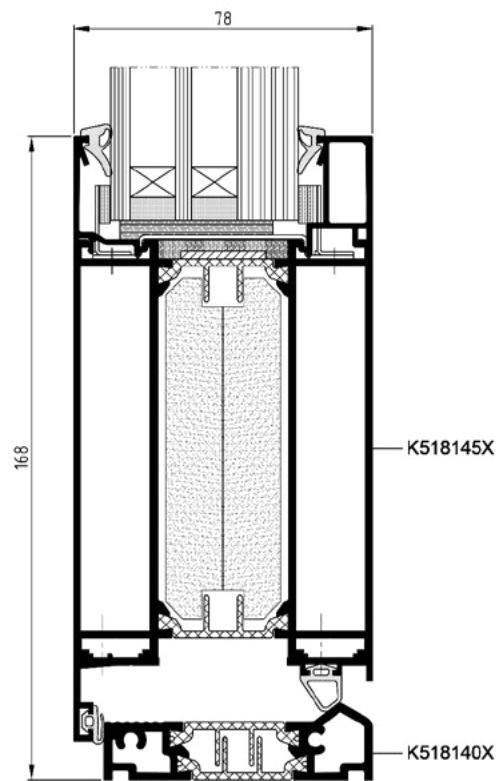
Door without a threshold – bottom cross-section



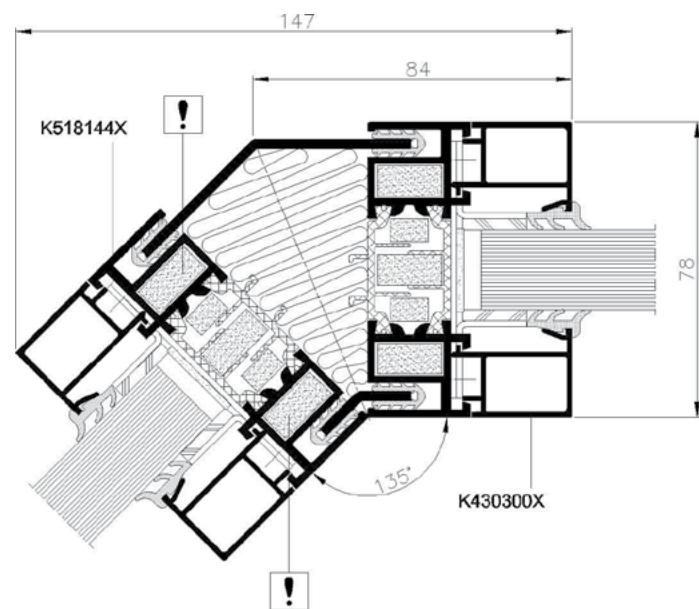
Door leaf with drop seal – cross-section



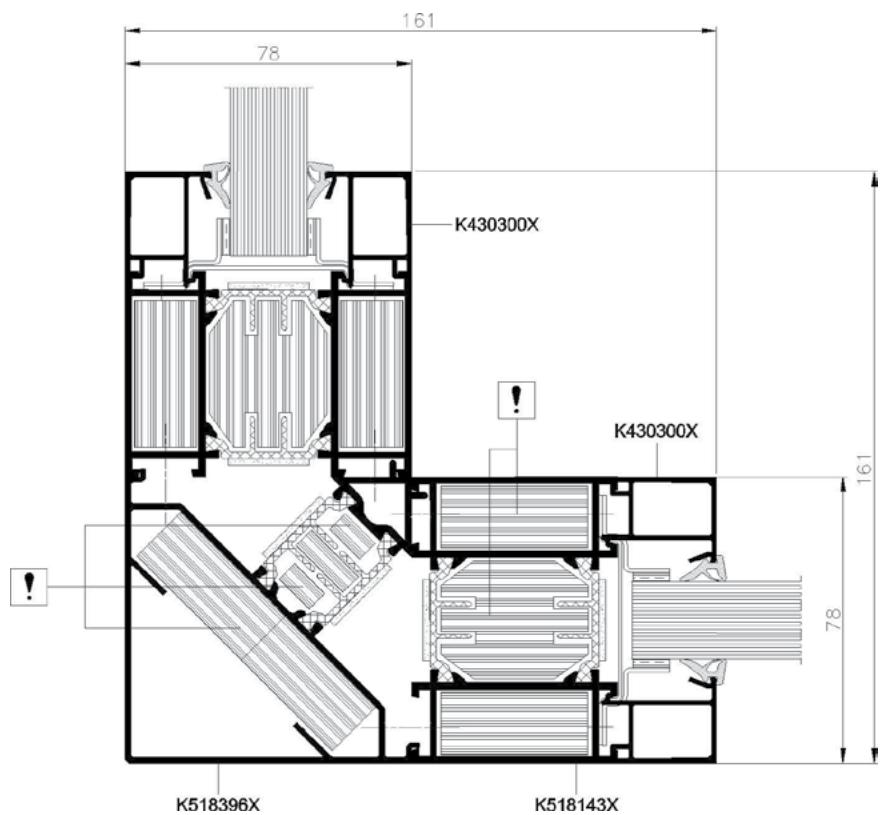
Bottom cross-section with threshold



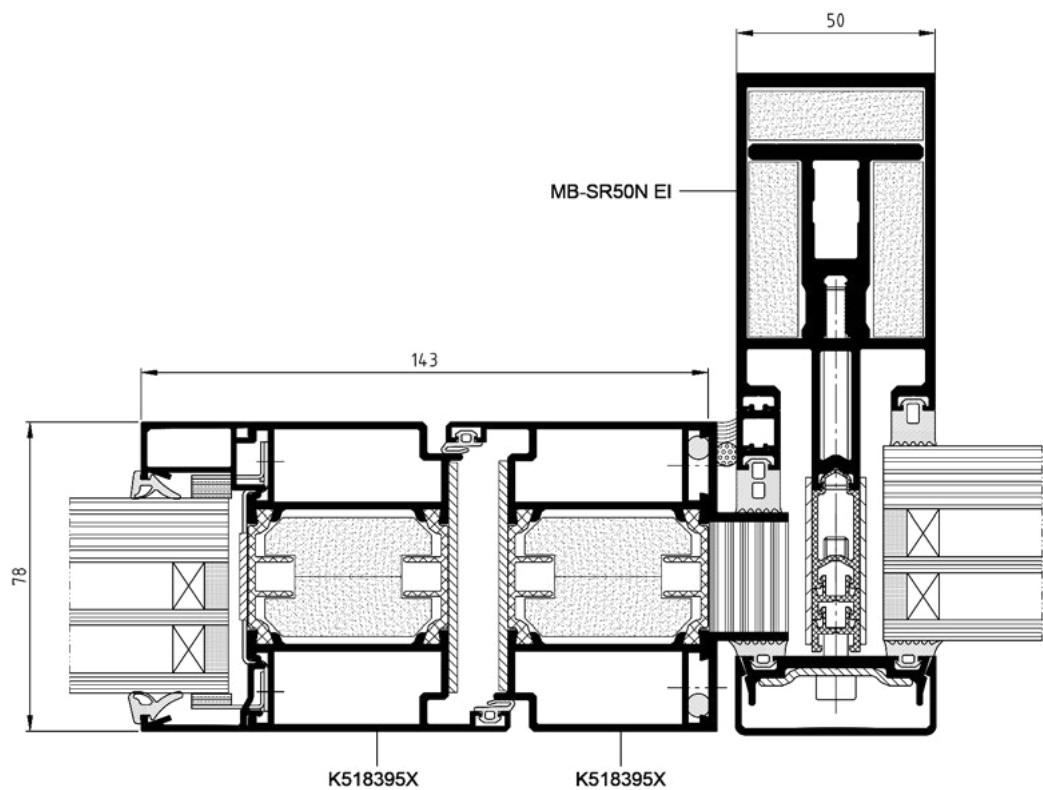
Angle joint of the fixed walls

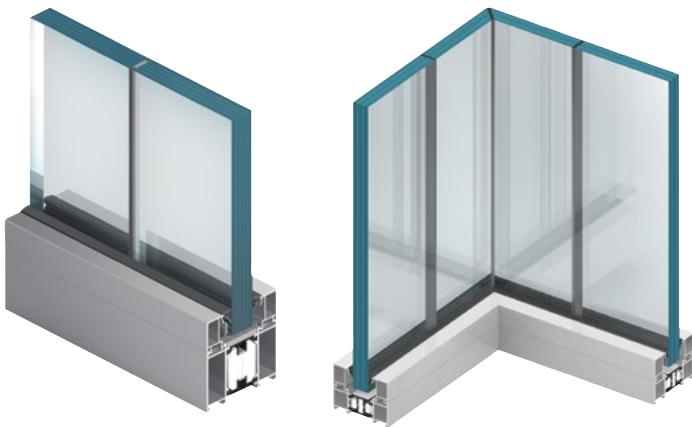


Angle joint of the fixed walls 90°



MB-78EI doors cross-section in the MB-SR50N EI façade





Silicone joined fire-rated glazed walls

MB-78EI

EI 30 EI 60



Aluprof offers **MB-78EI** system-based solution for transparent fire-resisting walls, the so-called "silicone joined glazed walls". It enables the fabrication of internal partitions without the visible vertical profiles that separate the individual modules of the wall, whilst preserving the full fire resistance. The gap between the glass panes is only 4 mm and is filled with firestop intumescence material and non-flammable silicone. The silicone is available in three colours (black, grey, or white). That way, fire-resisting partitions can be up to 3.6 m high, with modules' width of up to 1.8 m. Fire tests carried out at the Building Research Institute (ITB) included a "free edge" model, so there is no limit as to the maximum length of this type of wall.



Silicone joined fire-rated glazed walls

MB-78EI



EI 30

EI 60



MB-78EI-based silicone joined glazed walls enable to freely design and build very large internal partition walls. With their transparent modules, the constructions made of this system make every room optically bigger. What's more, the system provides security and helps to organize fire zones in the building, whilst ensuring the appropriate conditions for the evacuation of building occupants.



Silicone joined fire-rated glazed walls

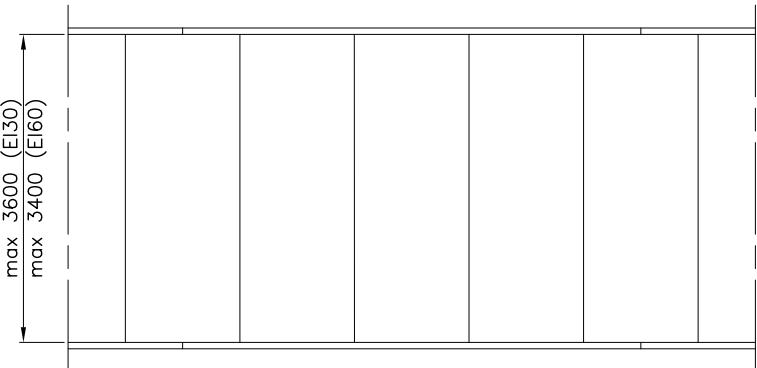
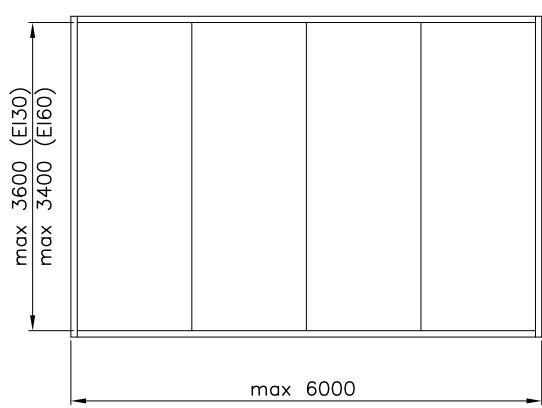
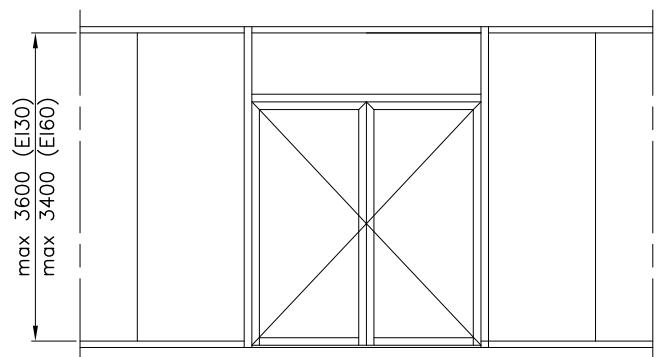
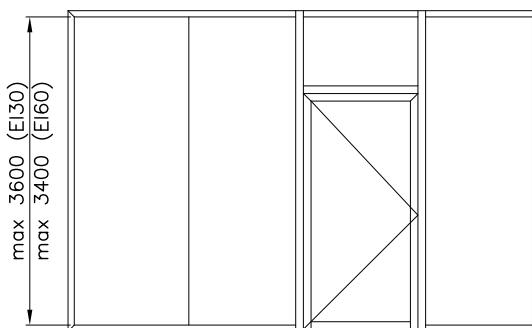
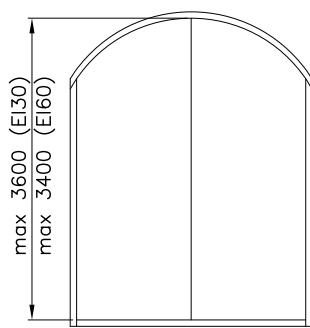
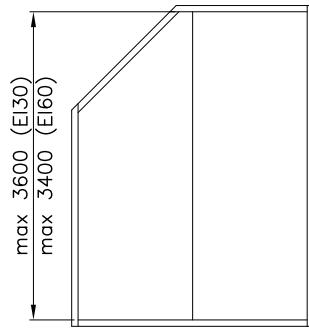
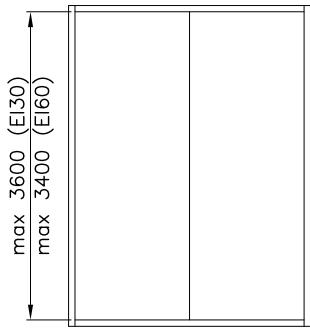
MB-78EI

EI 30 EI 60



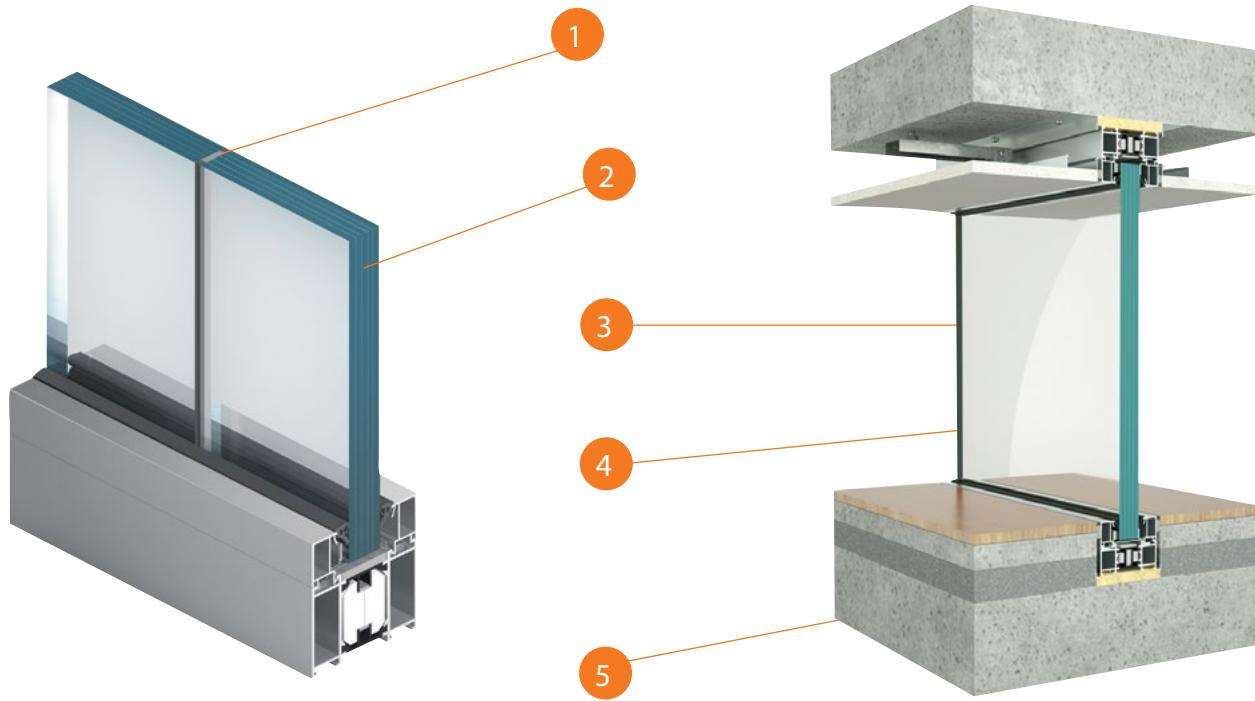
Aluprof offers also a version with profiles fitted in the floor, walls and ceiling. Hidden wall mount enhances this optical effect, while maintaining the full fire protection of the construction.

Silicone joined glazed wall MB-78EI - examples



Silicone joined fire-rated glazed walls

MB-78EI



- ① The gap between the modules is only 2 or 4 mm wide
- ② Fire glass thickness: 17 mm or 23 mm (EI30), 26 mm or 31 mm (EI60)
- ③ The maximum height of the partitions: 3.6 m; no limits as to the maximum length
- ④ The maximum width of glass modules: 1.5 m (max height: 3.6 m) and 1.8 m (max height 3.0 m)
- ⑤ Solution available with profiles fitted in the floor, walls and ceiling

ITB Instytut Techniki Budowlanej
Aluprof S.A.
ul. Warszawska 153,
43-300 Bielsko-Biala

Warszawa, dn. 2016.09.28

Praca nr 1036/16/R267N2P

Klasifikacja w zakresie odporności ogniowej ścian profilowych i ścian bezprzewodowych oraz drzwi i zasłon przesuwowych jedno- i dwuskrzydłowych systemu Aluprof® MB-78EI oraz klasifikacja w zakresie dymoszczelności drzwi rozwieranych systemu Aluprof® MB-78EI firmy Aluprof® S.A.

1. Podstawy formalne

1.1. Zlecenie firmy Aluprof® S.A.
1.2. Aneks do umowy ramowej nr 1036/16/R267N2P

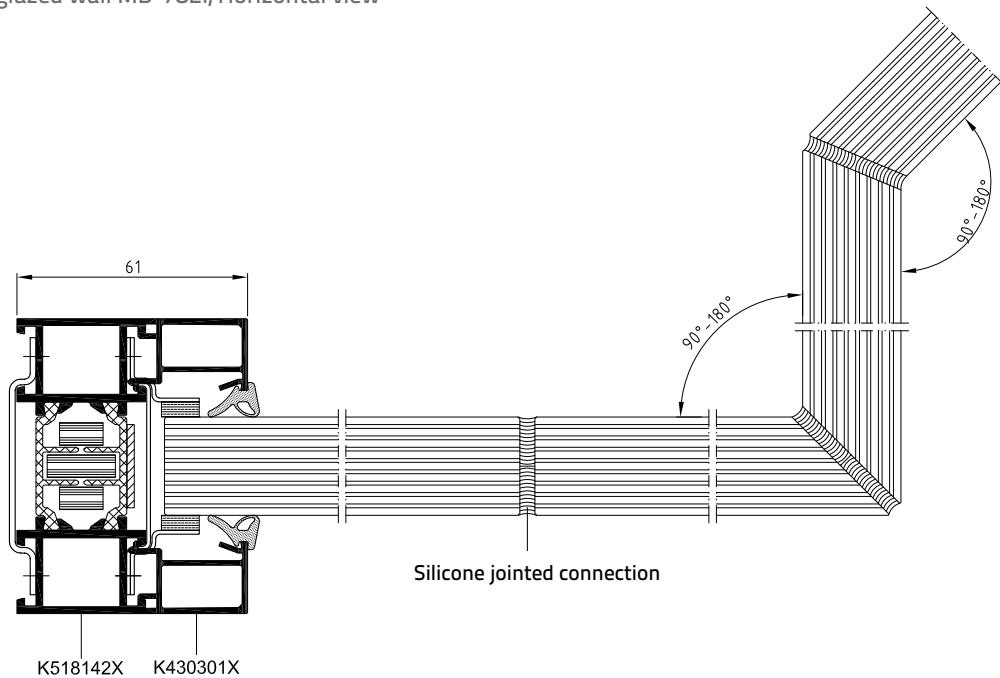
2. PODSTAWY MERYTORYCZNE

2.1. NORMY

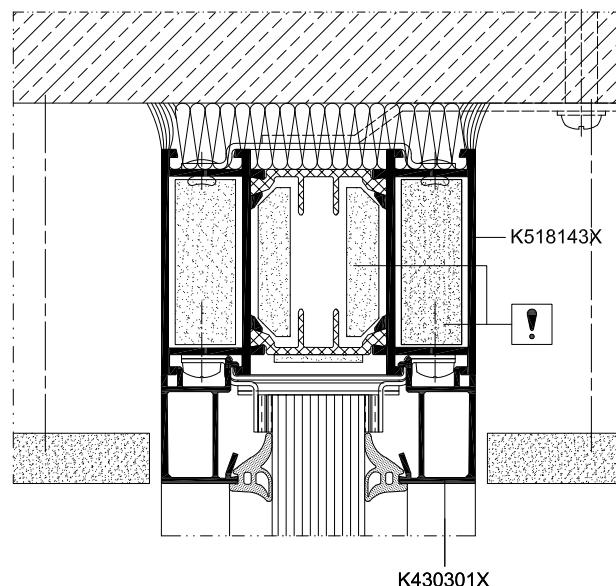
2.1.1. Norma PN-EN 14600:2009 Drzwi, bramy i otwieralne okna o właściwościach odporności ogniowej i/lub dymoszczelności - Wymagania i klasifikacja.
2.1.2. Norma PN-EN 13501-2:2016-09 Drzwi i zasłony przesuwowe o właściwościach odporności ogniowej i dymoszczelności - Klasifikacja na podstawie badań odporności ogniowej, z wyłączeniem instalacji wentylacyjnej.
2.1.3. Norma PN-EN 1363-1:2001 Badanie odporności ogniowej – Część 1: Wymagania ogólne.
2.1.4. Norma PN-EN 1363-1:2012 Badanie odporności ogniowej – Część 1: Wymagania ogólne.
2.1.5. Norma PN-EN 1634-1:2002 Badanie odporności ogniowej zestawów drzwiowych i zasuwających – Część 1: Drzwi i zasłony przesuwopodnoszące.
2.1.6. Norma PN-EN 1634-1:2009 Badanie odporności ogniowej i dymoszczelności zestawów drzwiowych i zasuwających, otwieranych okien i elementów okuć budowlanych – Część 1: Badanie odporności ogniowej drzwi, zasłon i otwieranych okien.
2.1.7. Norma PN-EN 1634-1:2014 Badanie odporności ogniowej i dymoszczelności zestawów drzwiowych i zasuwających i otwieranych okien oraz elementów okuć budowlanych – Część 1: Badanie odporności ogniowej zestawów drzwiowych, zasuwających i otwieranych okien.
2.1.8. Norma PN-EN 1634-2:2009 Badanie odporności ogniowej i dymoszczelności zestawów drzwiowych i zasuwających, otwieranych okien i elementów okuć budowlanych – Część 2: Badanie odporności ogniowej charakteryzujące elementy okuć budowlanych.

Silicone joined glazed wall **MB-78EI** are covered by the classification ITB 1036/16/R267N2P

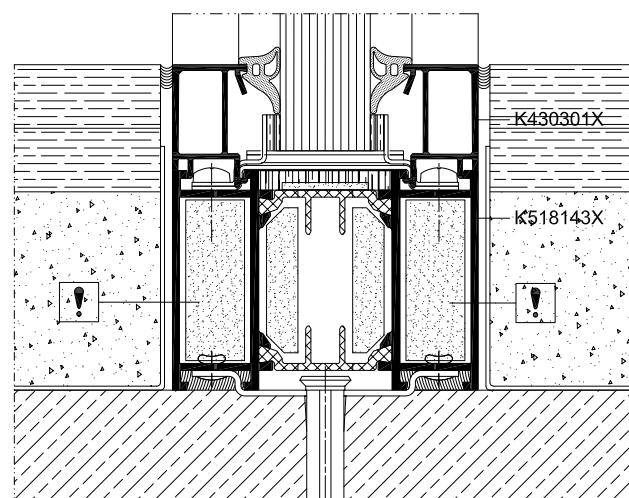
Silicone joined glazed wall MB-78EI, Horizontal view



Partition with a ceiling-integrated profile, section view

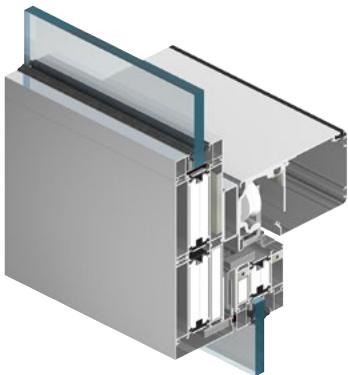


Partition with a floor-integrated profile, section view



Automatic fire rated sliding doors

MB-78EI DPA



EI 15

EI 30



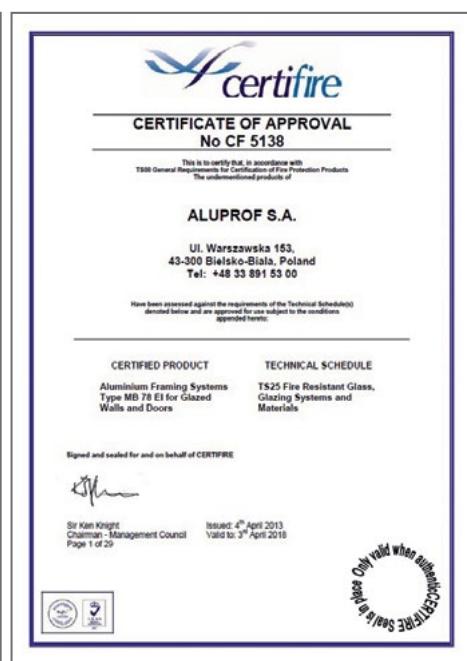
The **MB-78EI DPA** system is intended to make fire rated partitions with automatic, single and double leaf sliding doors. Their fire resistance class of EI 15 and EI 30 is kept when they are exposed to fire both from the outside and the inside. The structure is based on the system of fire walls with the **MB-78EI** doors, from which comes most of the production technology and components, including main profiles, glazing beads, cooling inserts, expanding tapes, gaskets, and most of the accessories. A wide range of glazing of these structures is the same as in the basic system and allows the installation of all common fire-resistant glazing of EI 15 and EI 30 class, including any fusion into an insulation package.

The **MB-78EI DPA** sliding door's drive can be installed on walls/system walls. Mechanisms that are intended to be used in this system allow a smooth and trouble-free operation of the door with a 200 kg leaf.

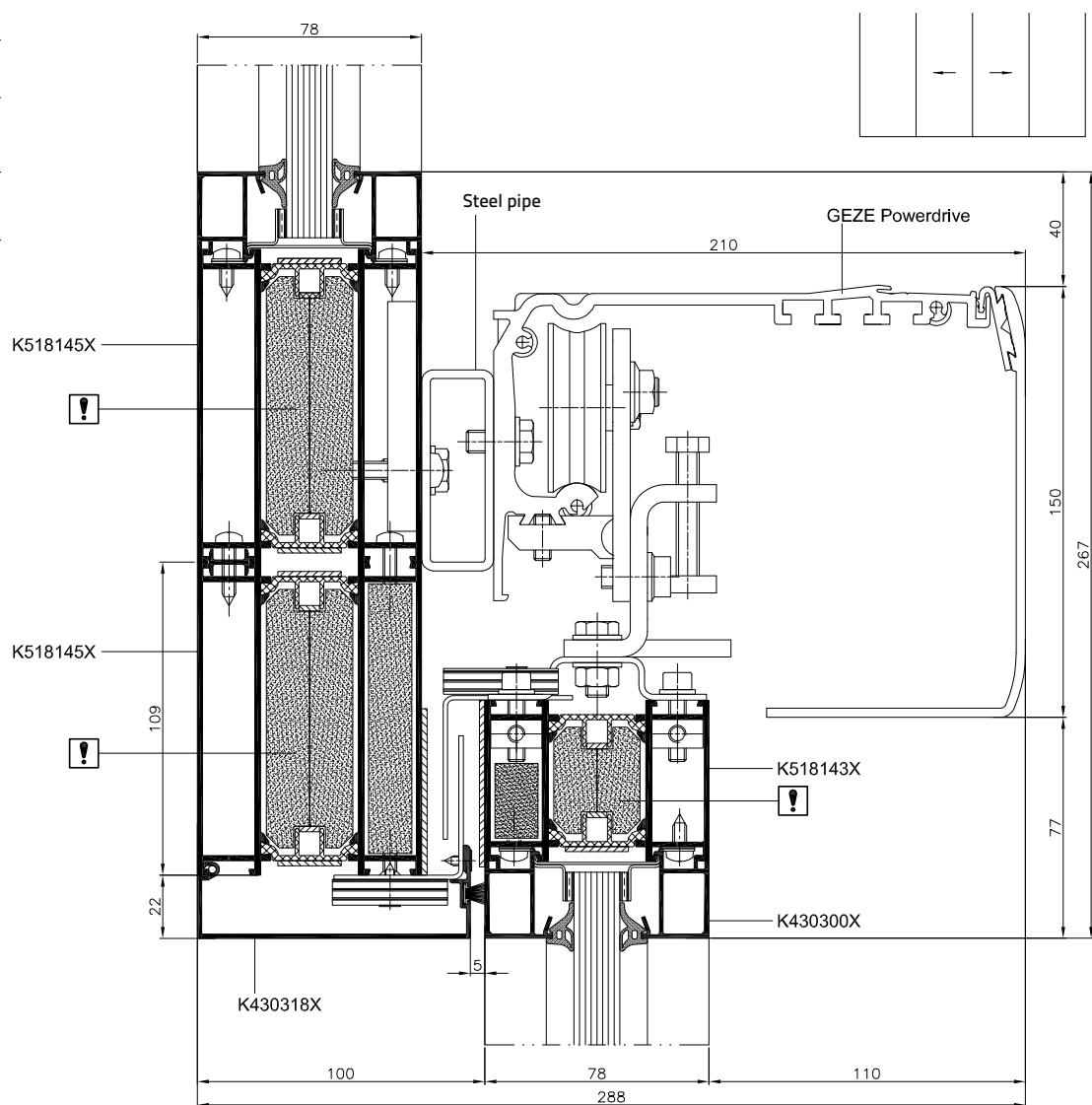
Max. dimensions of the structure in clear opening:

- height of a single and double leaf door : up to 2550 mm.
- width of a single door: up to 1350 mm.
- width of a double door: up to 2710 mm.

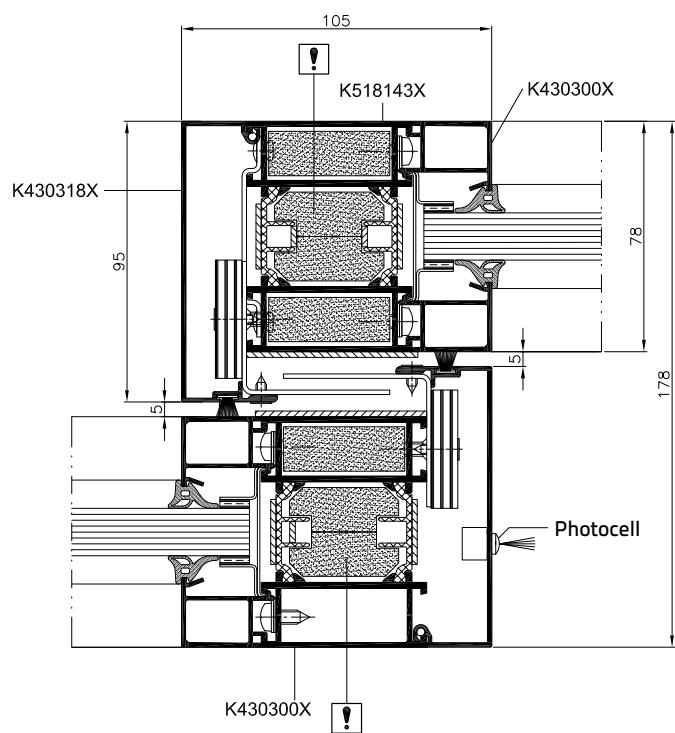
The **MB-78EI DPA** system holds an ITB's Technical Approval No. AT-15-6006/2016 and a certificate CERTIFIRE delivered by Warrington Certification Ltd No. CF 5138



Upper sliding doors – cross-section



Lateral sliding doors – cross-section



Fire-rated windows

MB-86EI



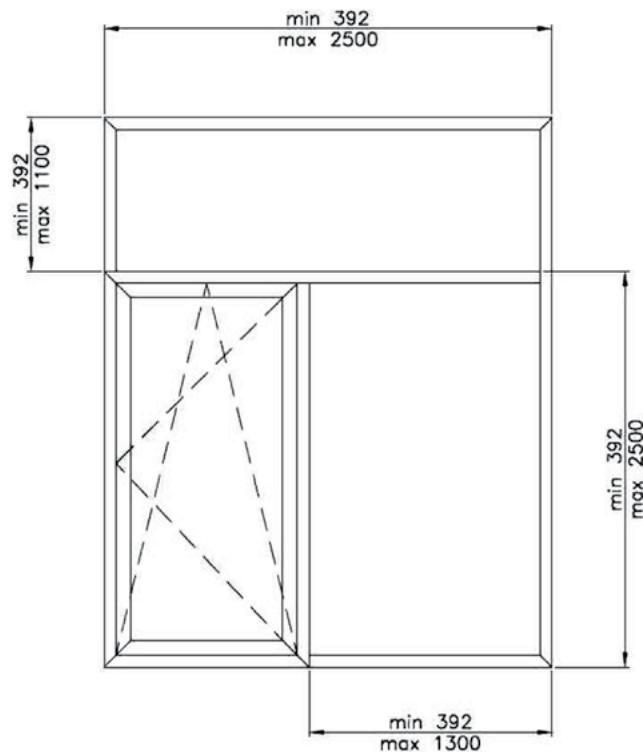
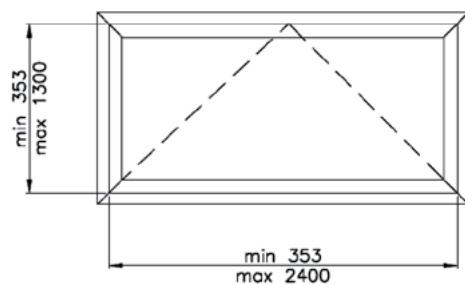
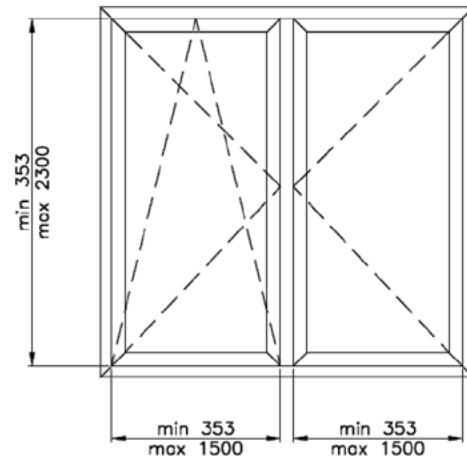
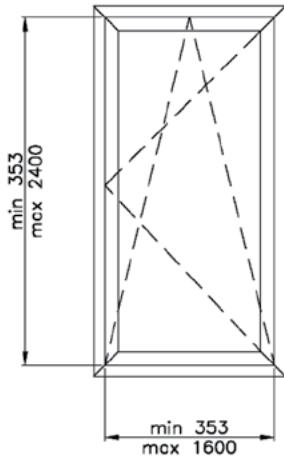
EI 30



MB-86EI is used for fabrication of EI30 fire-rated openable windows to EN 13501-2+A1. MB-86EI is based on **MB-86** system, and has excellent thermal, sound reduction, water resistance and air leakage performances. The **MB-86EI** combines the advantages of a classic window system with the properties of a fire partition walling – the construction meets all the requirements of the applicable regulations and standards, especially regarding energy saving and environmental protection, while ensuring proper fire safety. The system is classified as non-fire spreading (NRO).



Max. dimensions of the windows:



TECHNICAL SPECIFICATION

MB-86EI

Frame depth 77 mm

Casement depth 86 mm

Glazing thickness frame: 13 to 61 mm, casement: 22 up to 70 mm

Max casement weight 130 kg

TECHNICAL PARAMETERS

MB-86EI

Air leakage class 4, EN 12207

Water resistance class E 1500, EN 12208

Wind resistance class C5, EN 12210

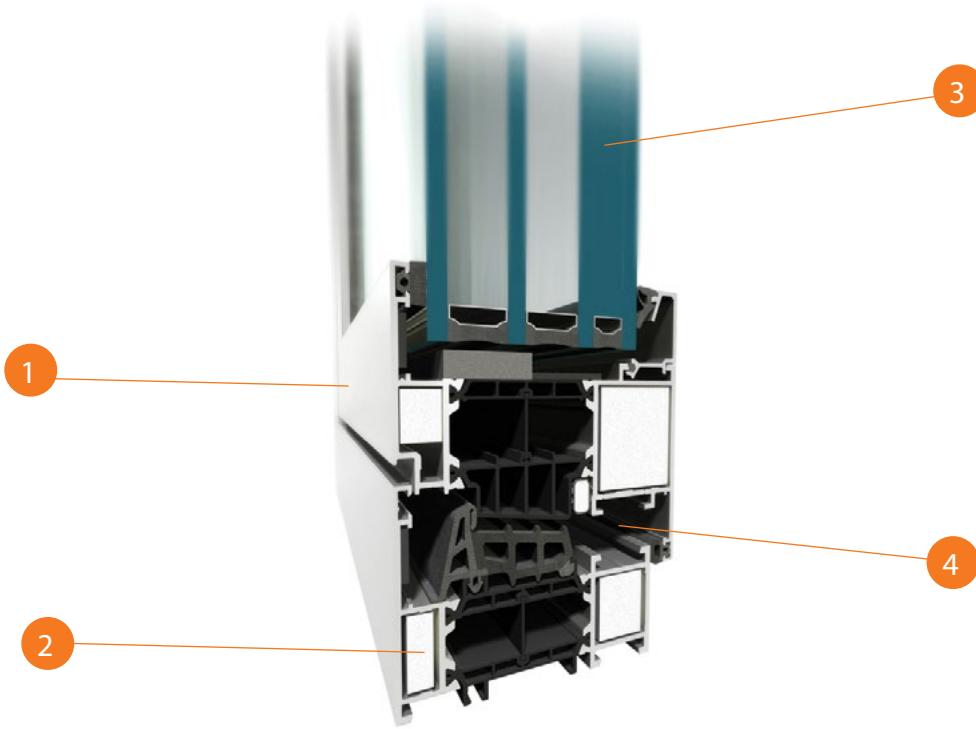
Thermal insulation U_f od 1,07 W/(m²K), U_w from 0,86 W/(m²K)*

Fire resistance rating class EI30

* - for a 2000 x 1100 mm window with triple glazing unit $U_g = 0.5$ W/(m²K), warm spacer and EI30-rated fire-resisting glazing pane

Fire-rated windows

MB-86EI



- ① three-chambered profiles, with a 43 or 42 mm-wide insulation chamber between thermal breaks as a central part
- ② fire resistance is ensured by the appropriately rated glass panes, fire insulation elements in the internal chambers of aluminium profiles and special accessories and materials used in the space between aluminium profiles and the glazing
- ③ wide range of glazing thickness allows for use of different types of insulated glass, including triple glazing units
- ④ hardware used in MB-86EI is typically RC2 burglar-resistant-rated

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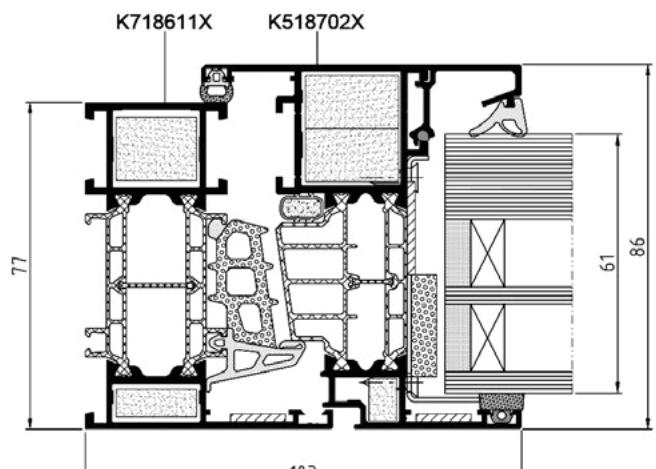
**CLASSIFICATION OF FIRE RESISTANCE
IN ACCORDANCE WITH EN 13501-2:2016**

Order No:	103619R419N2P
Owner of this report:	ALUPROFI S.A. ul. Warszawska 153 43-300 Bielsko-Biala Poland
Prepared by:	Fire Research Department Building Research Institute 21, Kosowcowa St. PL 02-690 Warsaw
Name of product:	Aluminum framed partition of ALUPROFI MB-86EI system
Classification Report No.:	103619R419N2P ENG
Issue number:	1
Copy number:	2
Date of issue:	2019.06.28

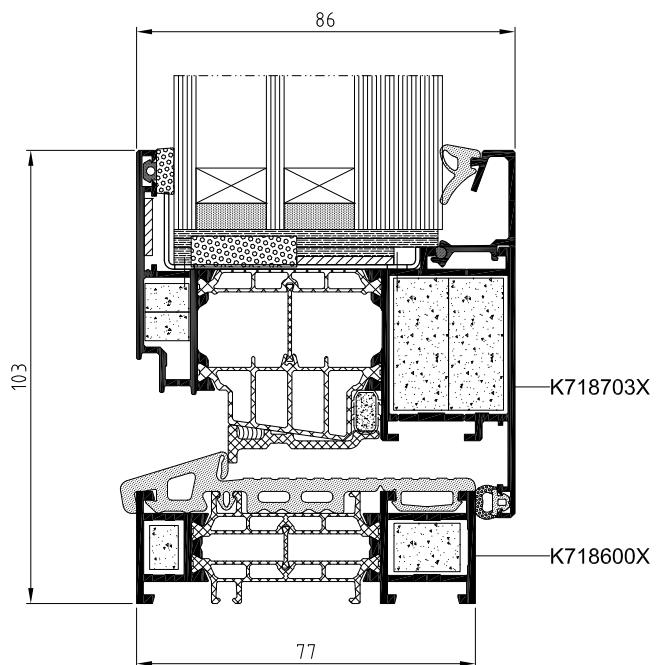
This classification report consists of 9 pages and may only be used or reproduced in its entirety.

MB-86 EI-based constructions hold an ITB's Classification No. 1036_19_R419N2P

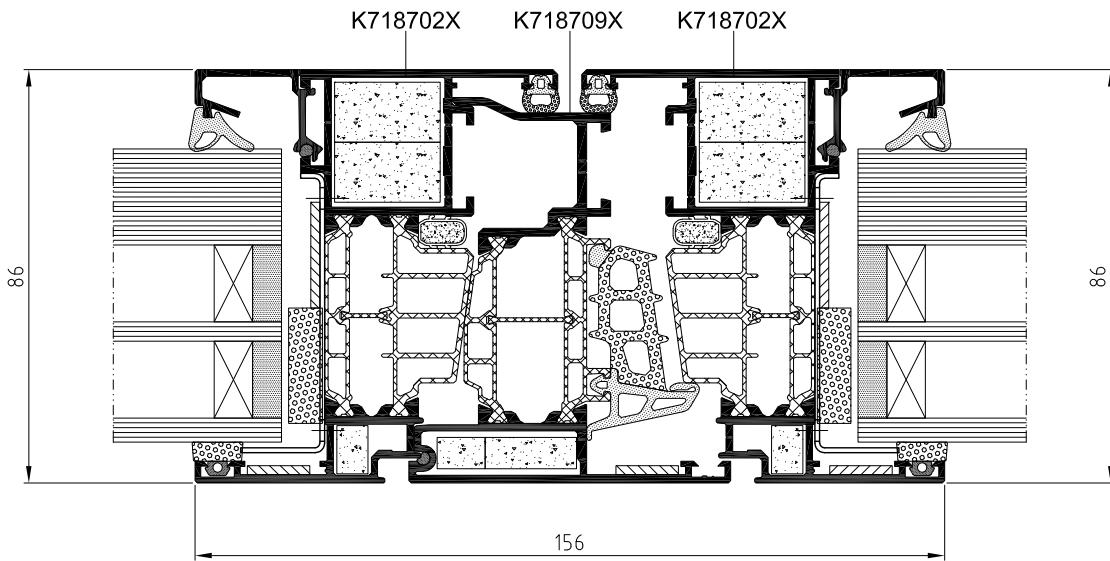
Window view



Balcony door with low-level threshold, view

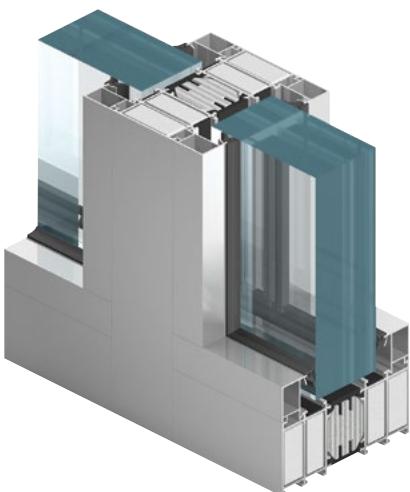


Double window with floating mullion, view



Fire rated wall partitions

MB-118EI



EI 120



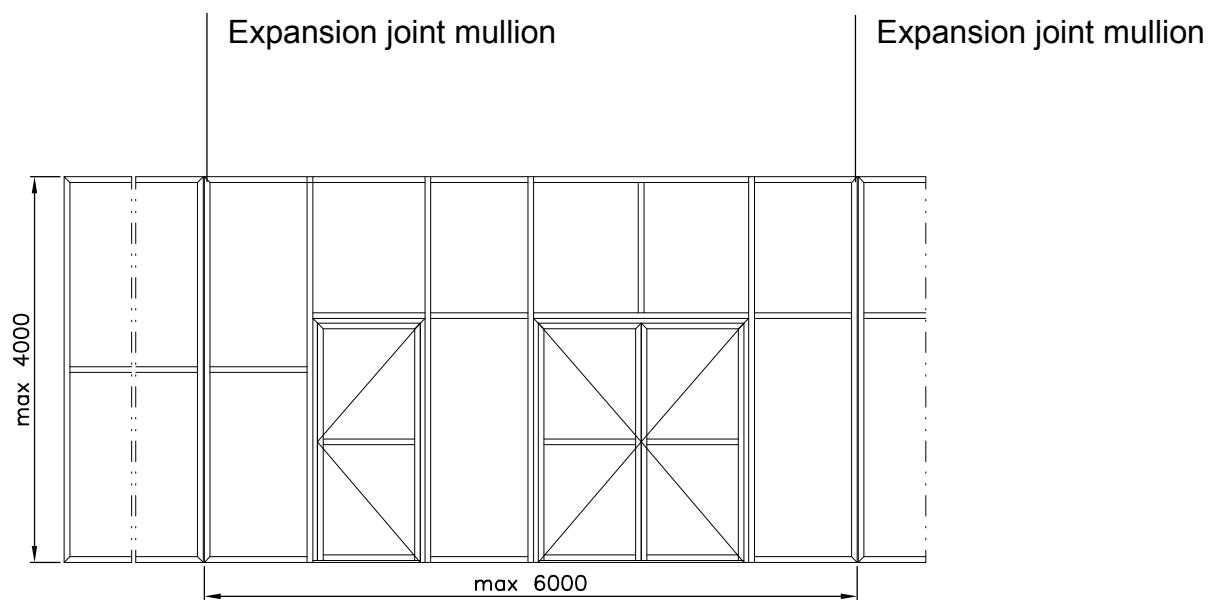
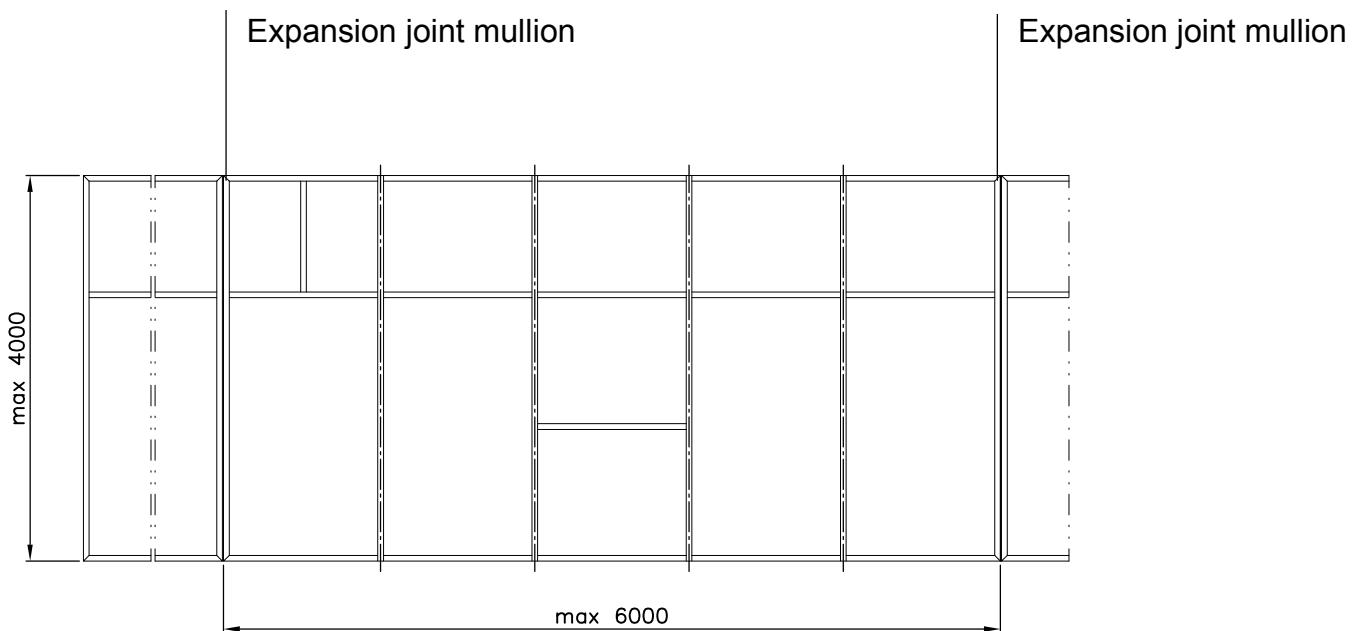
The **MB-118 EI** fire rated walls are used to make fire partitions with fire resistance class of EI 120. The system is classified as non-fire spreading (NRO). Its design & construction is such that, it provides a technical connection with the **MB-78EI** door, which means a number of common components (such as glazing beads, cooling inserts, expanding tapes, seals and most accessories) and also similar to the basic system, production and installation technology.

The **MB-118EI** system has been developed on the basis of a five chamber insulated aluminium profile, with a front to back depth of 118 mm. The inner chamber profiles, as well as insulating space between them, are filled with fire insulation elements. On the outer surfaces there are expanding tapes which are additionally mounted, and the whole structure is completed by steel accessories components, joining both sides of the profiles. The **MB-118EI** system can accommodate infills of a thickness 31-84 mm. This system can also be the basis for constructions in EI 30 or EI 60 classes, in which, due to high thermal or acoustic requirements, triple glazing units must be used.

Thanks to its symmetrical composition, the structures that are made of it remain fire resistant in EI 120 class, both exposed to fire from the outside and the inside. An important feature affecting the functionality of these fire partitions is the possibility to install the **MB-78EI** doors.



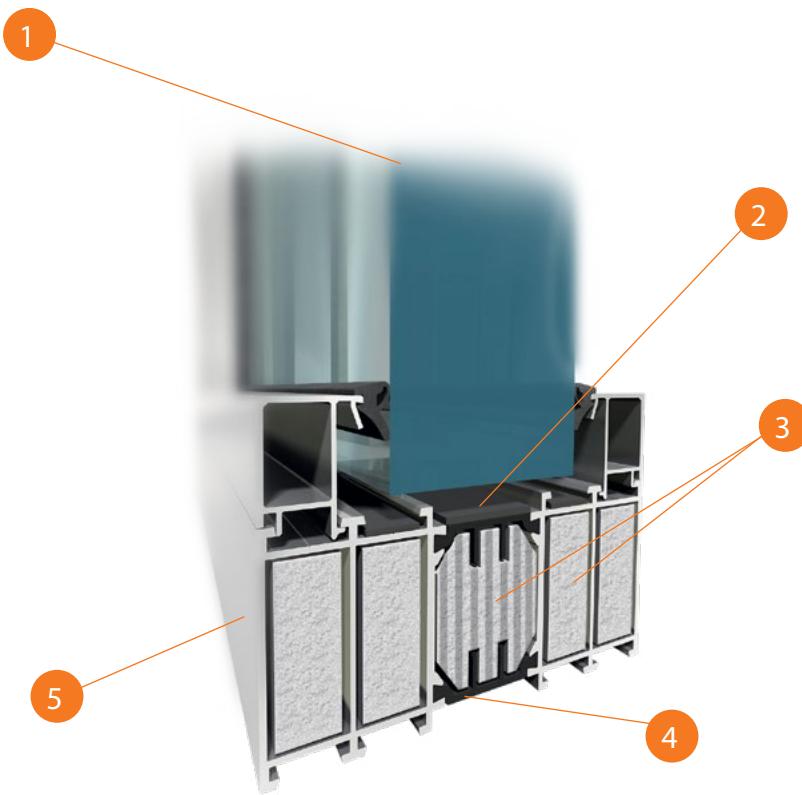
Max. dimensions of the walls



TECHNICAL SPECIFICATION		TECHNICAL PARAMETERS	
Depth of wall frame	118 mm	Air Permeability	Class A4, PN-EN 12152:2004
Glazing range	31 - 84 mm	Watertightness	Class RE 750, PN-EN 12154:2004
		Fire resistance	Class EI 120, EN 13501-2

Fire rated wall partitions

MB-118EI



- ① Single or double (sealed unit) fire resistant glasses, of a thickness to 84 mm.
- ② Steel accessories and expanding tapes that protect the structure from high temperatures
- ③ GKF or CI type fire protection infills inside the profiles allowing to obtain EI120 class
- ④ Profiled thermal break that provides adequate protection against heat loss
- ⑤ 5-chamber, symmetrical design, where fire resistance is maintained regardless the side of the fire

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**CLASSIFICATION OF FIRE RESISTANCE
IN ACCORDANCE WITH EN 13501-2:2016**

Order No.: 1036/19/R419NZP

Owner of this report: ALUPROF® S.A.
ul. Warszawska 153
43-300 Bielsko-Biala
Poland

Prepared by: Fire Research Department
Building Research Institute
21, Kaszubow St.
PL 02-656 Warsaw

Name of product: Aluminium framed partition of ALUPROF® MB-118EI system

Classification Report No.: 1036/19/R409NZP/ENG

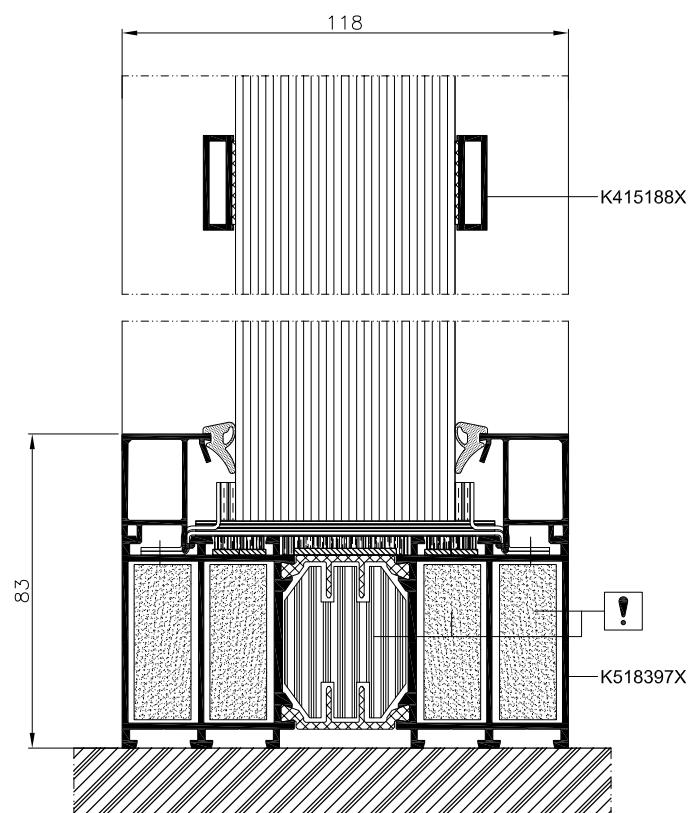
Issue number: 1

Date of issue: 2019.11.25

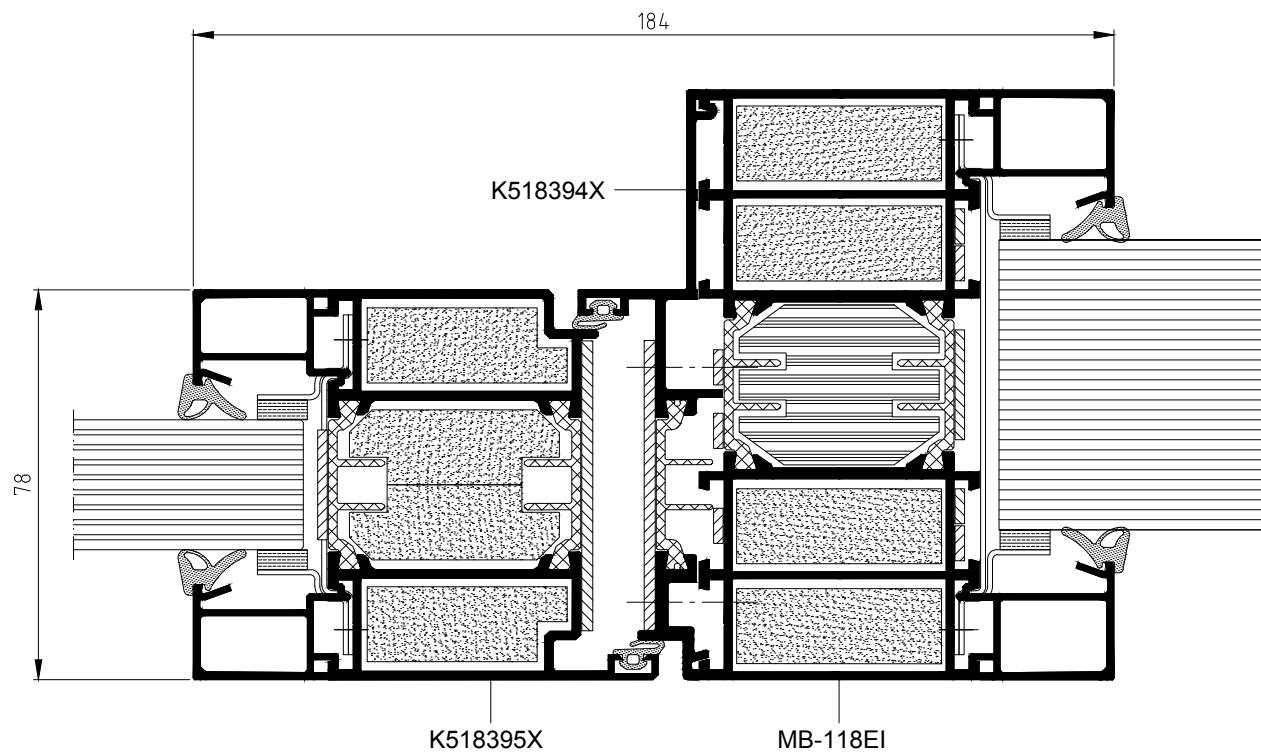
This classification report consists of 7 pages and may only be used or reproduced in its entirety.

The **MB-118EI** system holds an ITB's
Classification No. 1036/19/R409NZP

Max. dimensions of the walls

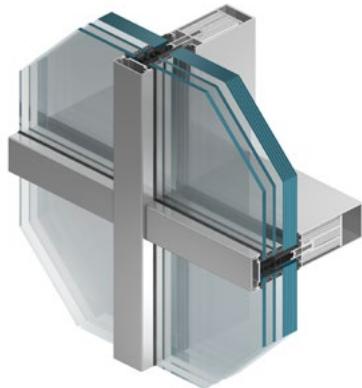


Joining of the MB-118EI wall and MB-78EI doors – cross-section



Curtain wall fire rated systems

MB-SR50N EI



EI 30 EI 60



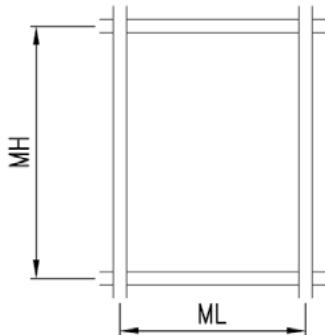
The **MB-SR50N EI** curtain wall fire rated systems have been developed to provide a light-weight curtain & fire resistant wall, of classes EI30, EI60 classes according to PN-EN 1364-3 and PN-EN 1364-1 and of fire-resistant glass-covered roofs. The system is classified as non-fire spreading (NRO).

These solutions use profiles of the basic, **MB-SR50N** façade system: mullions of a depth of between 85 and 225 mm and transoms of a depth of 65 and 189,5 mm. The **MB-SR50N** system allows for selecting mullion & transom profiles which provide a flush internal finish of the facade, creating a desirable, unified grid appearance.

The design of the fire rated curtain wall system allows the use of angled connections to $\pm 7.5^\circ$ per side, angled connections 90° or 135° (internal or external) and building façades tilted from the vertical at an angle of $\pm 15^\circ$. It is also possible to install the **MB-78EI** fire doors while maintaining the fire resistance of the whole structure in classes EI 30 or EI 60.

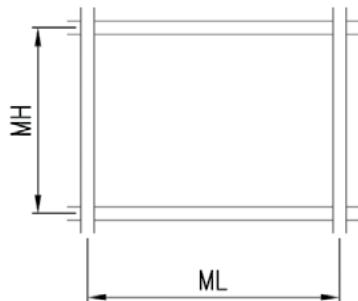


Max. dimensions of the panels in curtain walls



MHmax=3000 mm
MLmax=1500 mm

- 300 kg



MHmax=1500 mm
MLmax=2400 mm

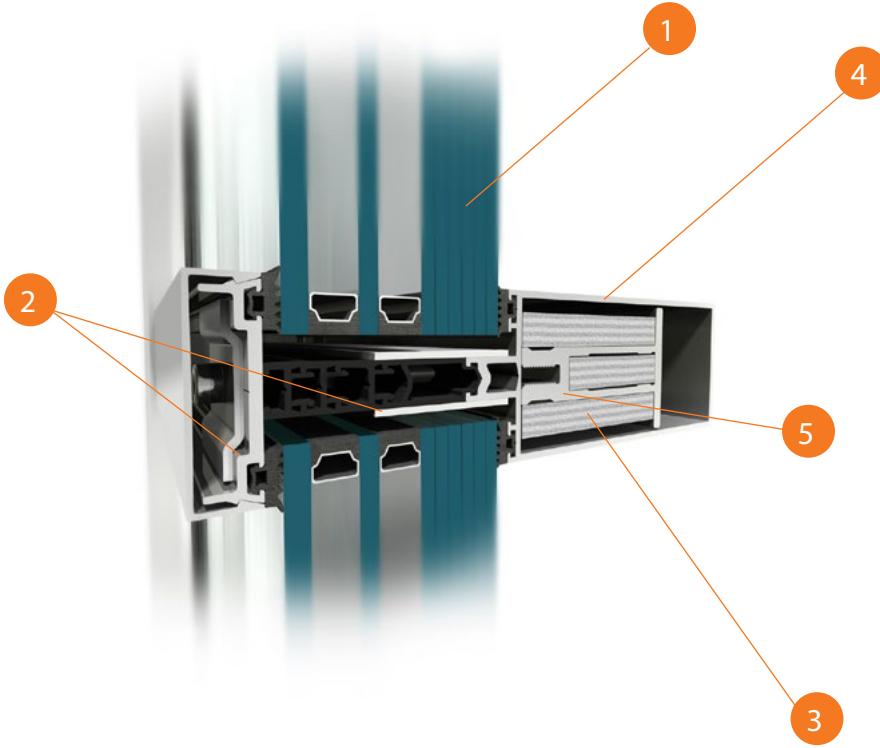
- 300 kg

} - max. infill weight

TECHNICAL SPECIFICATION	MB-SR50N EI
Mullions depth	85 – 225 mm
Transoms depth	69,5 – 189,5 mm
Inertia mullions (coeff. range I_x)	83,80 – 1222,14 cm ⁴
Inertia transoms (coeff. range I_z)	48,07 – 591,55 cm ⁴
Width of profiles	50 mm
Glazing range	16 – 64 mm
TECHNICAL PARAMETERS	
Air Permeability	Class AE 1050, PN-EN 12152
Watertightness	Class RE 1200, PN-EN 12154
Fire resistance	Classes EI 30, EI 60, EN 13501-2
Thermal insulation (coeff. U_f)	from 1.8 W/(m ² K)

Curtain wall fire rated systems

MB-SR50N EI



- ① Single or double (sealed unit) fire resistant glasses, mechanical fix, glazed infill system, accommodating glass of a thickness up to 64 mm
- ② Steel accessories, special bolts and expanding tapes that protect the structure from high temperatures
- ③ GKf or CI type fire protection inserted inside the profile, enabling performance classes of EI 30 – EI 60
- ④ Mullion and transom supporting structure gives the possibility to build vertical facades, inclined from the vertical position by an angle of $\pm 10^\circ$ and glazed roofs
- ⑤ The inner core aluminium profile insert, provides the necessary integrity of the construction in the event of a fire

The view of the fire resistant façade does not differ from the basic system. In order to gain fire resistance, mullions and transoms are fitted with special fireproof inserts. These inserts consist of an aluminium profile serving as a reinforcement element, clad round with fire-proof board.

The glazing or other fire-proof fillings are “loaded” into their respective “zones,” against the internal glazing rebate of both the transoms & mullions, & held fast in place via an external pressure plate or clamping strip.

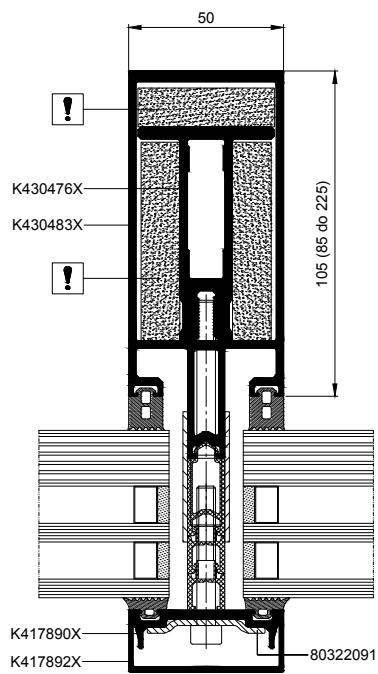
In order to achieve optimal heat and sound insulation in construction we use continuous thermal break profile of HPVC and EPDM seals. In addition, the side surfaces of the insulator are equipped with fire-proof tape that under high temperature expands and fills the space between the areas of the façade.

The pressure plate is fixed to the grid profiles by a machine screw and stainless steel plate. Such a method of fix provides the necessary technical parameter, in order to achieve performance, & protect against the glass or other similar fire resistant infill from unwanted displacement.

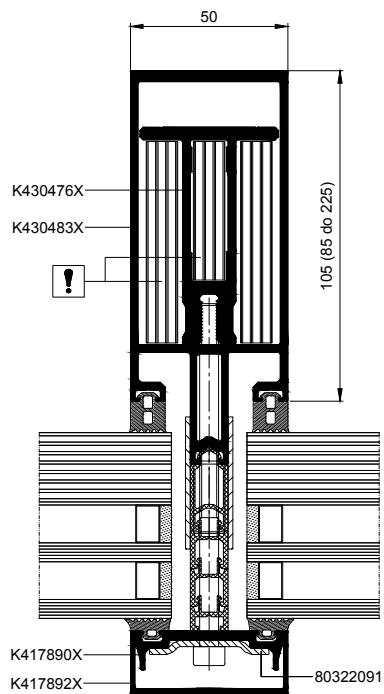
The **MB-SR50N EI** system holds an ITB's Classification No. 1036.12/16/R289NZP and a certificate CERTIFIRE delivered by Warrington Certification Ltd No. CF 5139



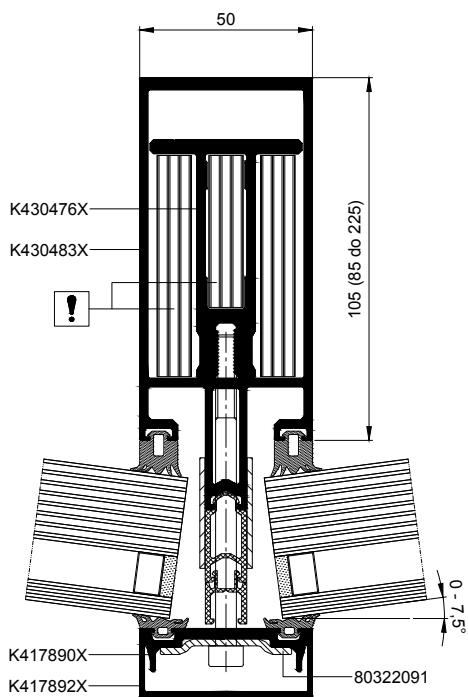
Mullion cross-section EI 30



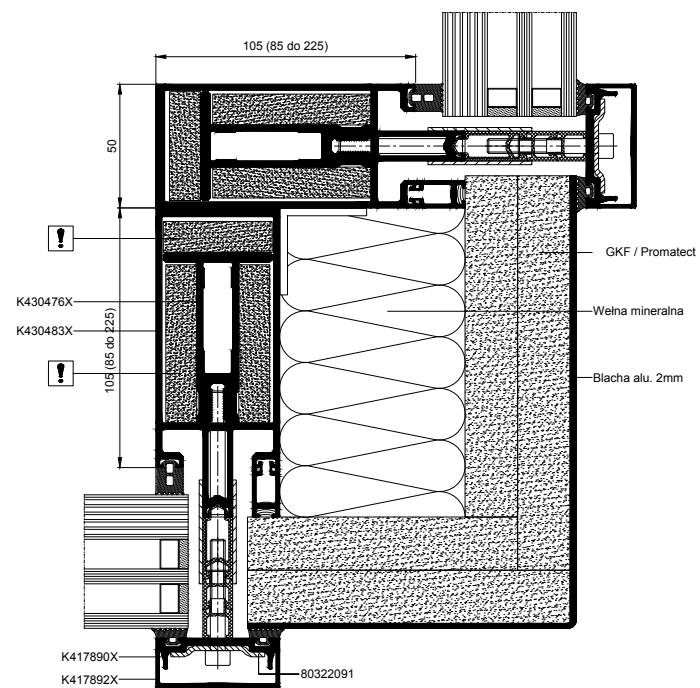
Mullion cross-section EI 60



Mullion cross-section +7,5° EI 60

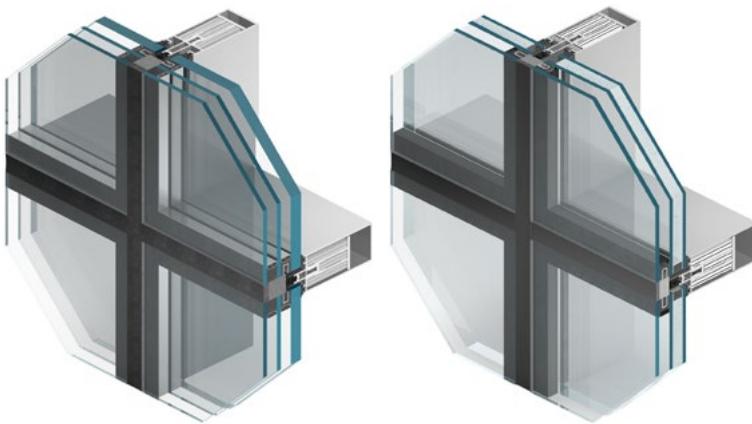


Mullion cross-section 90° EI 30



Façade system

MB-SR50N EI EFEKT



EI 30 EI 60



MB-SR50N EI EFEKT system is designed for fabrication of fire-rated, EI30, EI60 infill curtain profiles, the mullion and transom support structure has a special core protected by fire-retardant inserts. It may be inclined from the vertical by an angle of $\pm 10^\circ$.

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Institute of Building Technology
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Warszawa, dnia: 2013.11.26

ALUPROF S.A.
ul. Warszawska 153,
43-300 Bielsko-Biala, Poland

01036/10/R50NP/e

Classification of fire resistance of external, between floors, walls of Aluprof® MB-SR50N EI EFEKT and Aluprof® MB-SR50 EI EFEKT systems of Aluprof® S.A.

1. Formal bases

- 1.1. Order of ALUPROF S.A. company dated 2013.11.15
- 1.2. Agreement No. 01036/13/R136NP dated 2013.11.26

2. Technical bases

- 2.1. Test Report No. LPP00-01036/11/R50NP, fire resistance test of external between floors wall of Aluprof® MB – SR50N EI EFEKT system with glazing: glass unit construction of: Securit Panlux 6 mm; spacer 12 mm; glass pane Contraliam 60 25 mm thick; Internal exposure
- 2.2. Test Report No. LPP00-01036/11/R50NP, fire resistance test of external between floors wall of Aluprof® MB – SR50N EI EFEKT system with glazing: glass unit construction of: Securit Panlux 6 mm; spacer 12 mm; glass pane Contraliam 60 25 mm thick; External exposure
- 2.3. Test Report No.: LPP00-01036/11/R50NP, fire resistance test of external, between floors, walls of transom – mullion structure, systems of: Aluprof® MB-SR50N EI60 EFEKT and Aluprof® MB-SR50 EI60 EFEKT – technical description

External, between floors walls of transom – mullion structure, systems of: Aluprof® MB-SR50N EI60 EFEKT and Aluprof® MB-SR50 EI60 EFEKT are intended for

ITB (Instytut Techniki Budowlanej) | ul. Warszawska 153 | tel. +48 33 891 53 01 | fax +48 33 891 53 00 | e-mail: itb@itb.polsl.pl | www.itb.polsl.pl

certifire

CERTIFICATE OF APPROVAL
No CF 5139

This is to certify that, in accordance with
TS10 General Requirements for Certification of Fire Protection Products
The unmentioned products of

ALUPROF S.A.

Ul. Warszawska 153, 43-300 Bielsko-Biala, Poland
Tel: +48 33 891 53 00

Have been assessed against the requirements of the Technical Specification
denoted below and are approved for use subject to the conditions
appended hereto.

CERTIFIED PRODUCT	TECHNICAL SCHEDULE
Aluminum Curtain Walling Systems Type: MB-SR50 MB-SR50N EI MB-SR50N EI EFEKT for Glazed Curtain Walls, Screens and external single and double leaf MB 78EI fire rated doors and single and double leaf sliding automatic MB 78EI DPA fire rated doors	TS25 Fire Resistant Glass, Glazing Systems and Materials

Signed and sealed for and on behalf of CERTIFIRE

Sir Ken Knight
Chairman - Management Council
Page 1 of 29

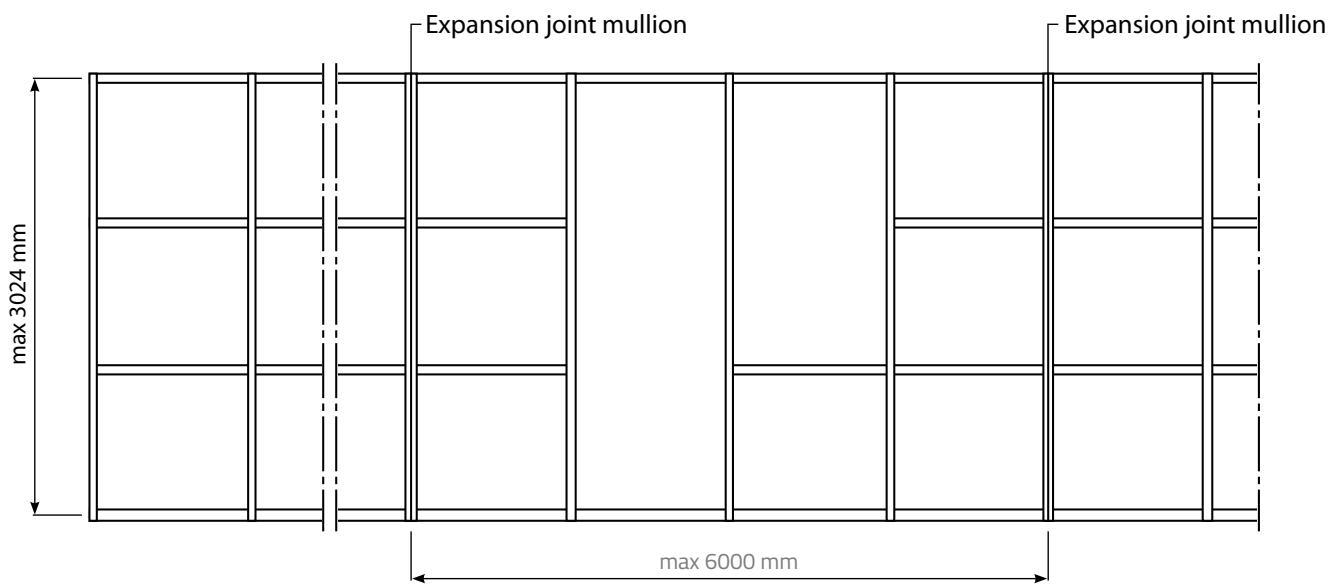
Issued: 15th January 2014
Valid to: 14th January 2019

warrington certifire certification

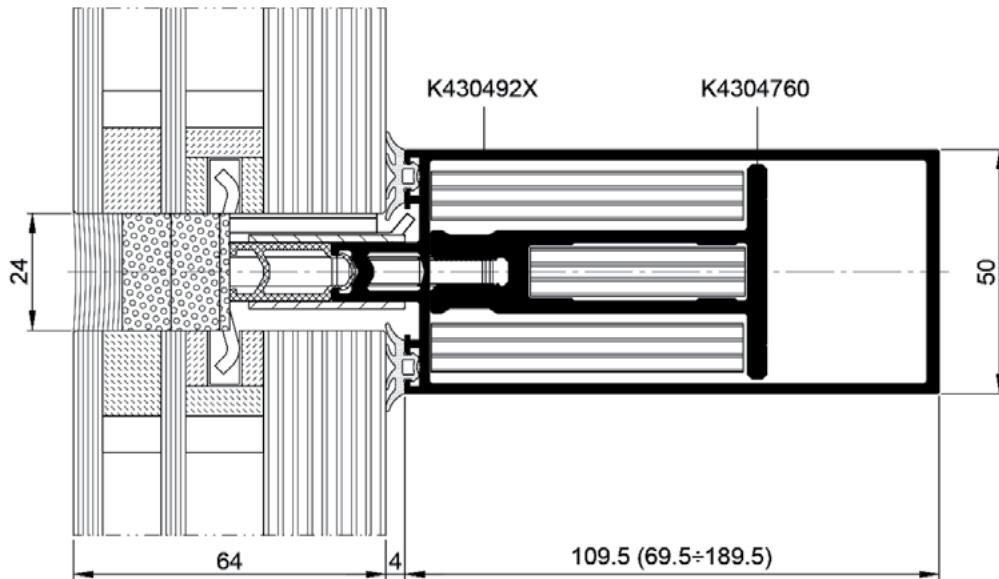
This certificate is the property of Warrington Certification Limited, part of Group UK Ltd.
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MB-SR50N EI EFEKT systems is covered by the ITB classification no 01036/15/R218NP and certified CERTIFIRE by the Warrington Certification Ltd (certificate no CF 5139).

Max. dimensions of the walls

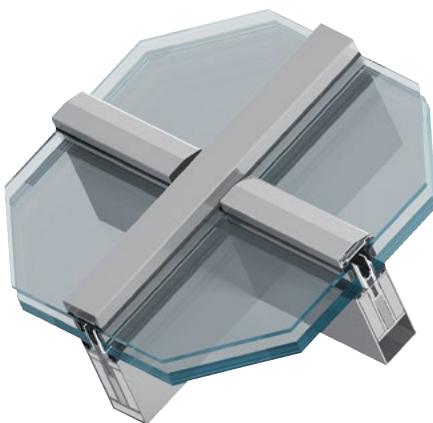


Transom cross-section



TECHNICAL SPECIFICATION	MB-SR50N EI EFEKT
Frame/mullion depth	85 – 225 mm
Leaf/transom depth	69,5 – 189,5 mm
Mullion stiffness (coeff. range Ix)	81,34 – 1222,14 cm ⁴
Transom stiffness (coeff. range Iz)	49,54 – 629,54 cm ⁴
Profiles width	50 mm
Glazing range	36 – 64 mm
TECHNICAL PARAMETERS	
Air permeability	class AE1200 Pa; PN-EN 12153:2004
Water-tightness	class RE1200; PN-EN 12155:2004
Wind resistance	2400 Pa / 3600 Pa; PN-EN 12179:2004
Impact resistance	class I5/E5; PN-EN 13049:2004, PN-EN 14019:2006

Fire resistant glazed roofs



REI 20 **REI 30**
RE 20 **RE 30** **RE 45**



Based on the **MB-SR50N EI** façade systems, it is possible to perform **roof glazing** with fire resistance class RE20, RE30, RE45, REI20, REI30 according to PN-EN 13501-2 + A1: 2010. "RE" means that the construction will maintain its structural capacity and integrity, and "REI" means that the construction will provide high temperature insulation.

Regular curtain wall mullions & transoms are used as roof glazing rafters & purlins, suitably joined to each other to form an aluminium grid structure, which is in turn mounted to the building structure by means of appropriate supports. Similar to the vertical curtain wall offer, these rafter & purlin profiles are fitted with fire resistant inserts, consisting of an aluminium insert profile acting as reinforcement, and surface clad with fire-proof board. The standard solution does not require any additional support such as steel.

Fire tests performed on two versions: flat and inclined, have assured classification of roofs with an inclination of 0° to 80° from the horizontal level. Rafters with a depth of 85 + 225 mm and purlins with a depth of 65 + 189.5 mm may be used in this structure. Window inserts are installed into the glazing rebate of the rafter & purlin formed grid, & fixed securely by the pressure plate clamping strip, screw fixed back to the carrier profiles. Within this system, it is possible to apply glazing thicknesses ranging from 32 to 64 mm. The maximum dimensions of the glass are 1250 mm x 3250 mm. Fire resistant glass can be used in a composite set with any glass placed in the system on the outside. **Glazed fire resistant roofs** can be combined with the EI **MB-SR50N** vertical façades.

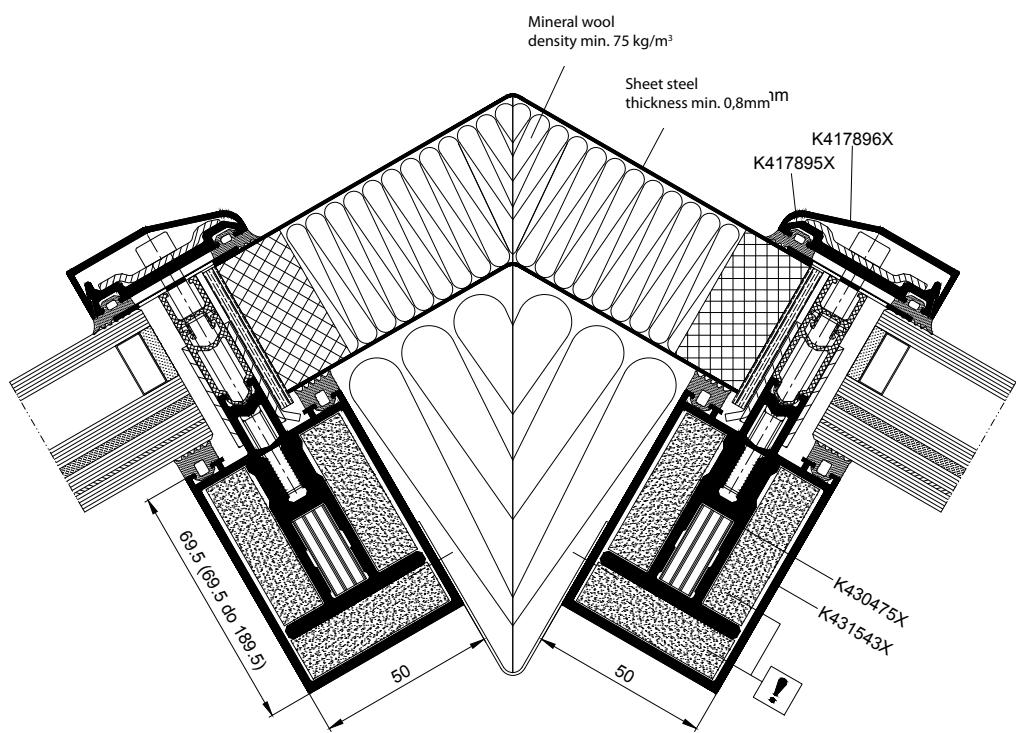
The **MB-SR50N EI** fire roofs hold an ITB's Fire Classifications Nos. 01036-18-R376Nzp & 01036.2-18-R376Nzp

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Działalność Główcom: 02-656 Warszawa | 21. tel. 22 683 84 87 fax 22 847 33 11 | itb.pl | www.itb.pl

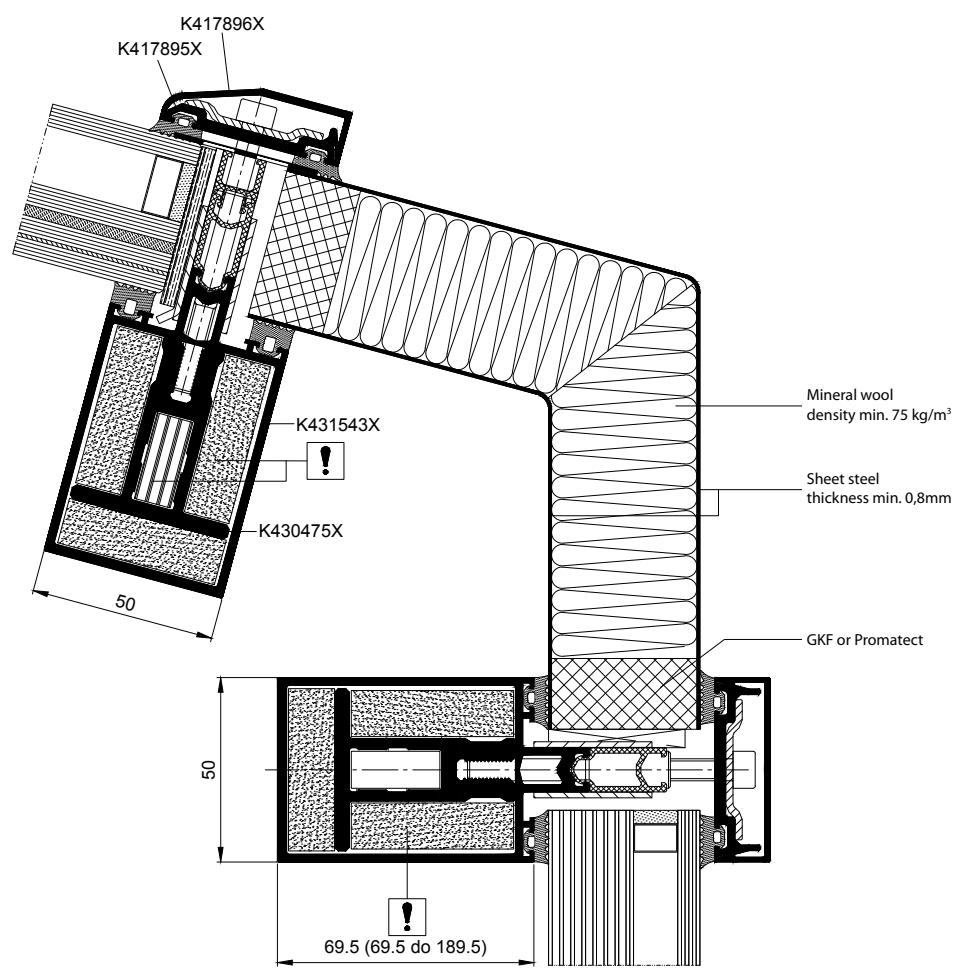
KLASYFIKACJA ITB W ZAKRESIE ODPORNOŚCI OGNIOWEJ nr 01036.2/18/R376Nzp

Klient:	ALUPROF S.A. ul. Warszawska 153 43-300 Pińczów-Bielsko
Adres klienta:	Dział prezentacyjny systemów MB-SR50N EI, MB-SR50 EI ul. Kraszewskiego 21, 02-656 Warszawa
Przedmiot klasyfikacji:	Bardzo przenikliwe systemy MB-SR50N EI, MB-SR50 EI firmy ALUPROF S.A.
Opracowane przez:	Zakład Badan Ogólnych Instytutu Techniki Budowlanej ul. Kraszewskiego 21, 02-656 Warszawa
Data ważności:	2021-07-31 Niniejszy dokument jest ważny w trzech egzemplarzach, przy czym dwa oryginalne, kierowane do jednego Klienta, a jeden pozostał w ITB. Dokument zawiera jedna załącznika - 39 stron.
1. Podstawy formalne	<ul style="list-style-type: none">• Zlecenie firmy Aluprof S.A.• Umowa nr 01036/18/R376Nzp.
2. Podstawy merytoryczne	<ul style="list-style-type: none">[1] PN-EN 13501-2:2016-07, Klasyfikacja i opisanie wyrobów budowlanych z elementami budowlonymi. Część 2. Klasyfikacja na podstawie badań odporności ogoniowej, z wyłączeniem instalacji wentylacyjnych[2] Norma PN-EN 1365-2:2016-12-12. Badanie odporności ogoniowej elementów notnych, dachów i pokryć dachowych. (Przepis techniczny dla dachów pokrytych dachówką EN 1365-2:2014).[3] Raport nr L2P90-1036/18/R376Nzp z badania odporności ogoniowej dachu przeszklonego systemu MB-SR50N EI 30 - badanie przy kącie nachylenia dachu 0°. ITB 2018 r.[4] Klasyczny katalog klasyfikacyjny nr 01036.1/18/R376Nzp - dachy przeszklone systemu MB-SR50N EI 30 ITB 2018 r.[5] Dokumentacja techniczna dostarczona przez Zleceniodawcę.

Cross section of the fire roof ridge



Cross section of the roof combined with a fire façade



Fire partition walls with door **MB-45EW**



EW 30

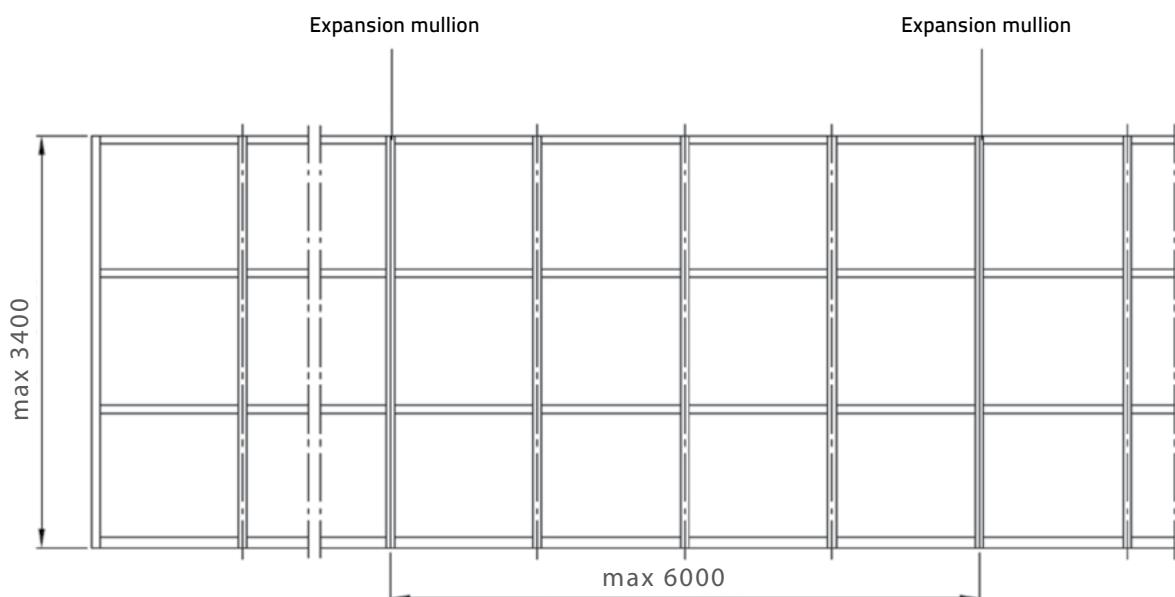
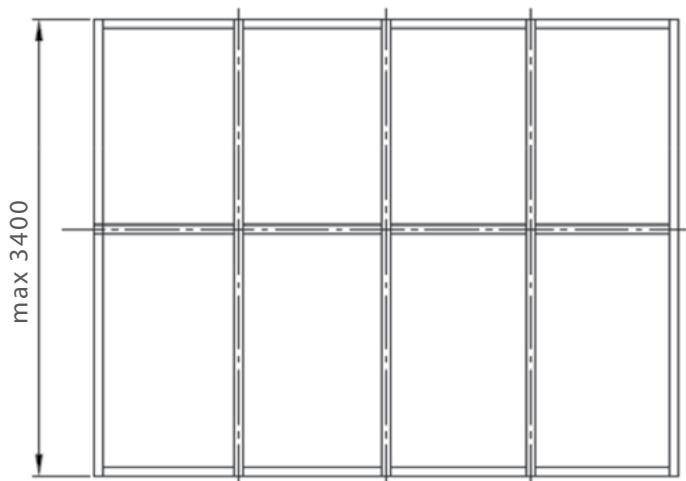
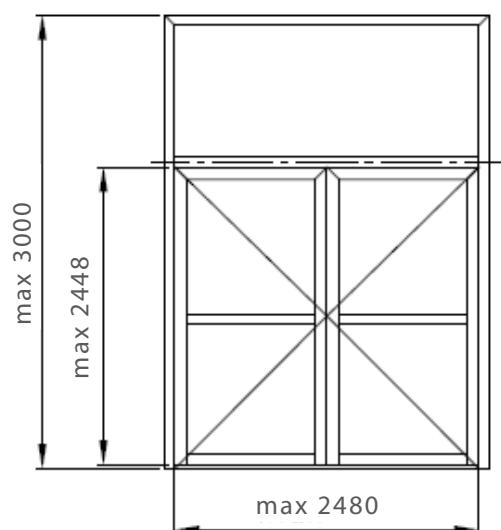
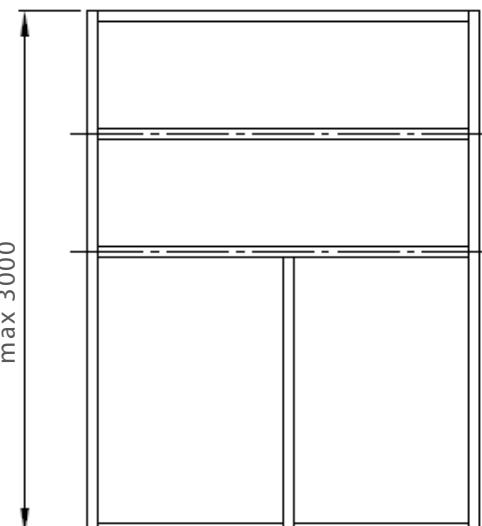
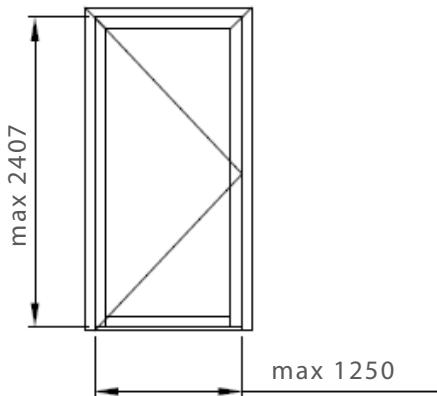


The **MB-45EW** system enables the fabrication of fire-rated single and double doors and fixed partition walls with doors. The constructions based on the **MB-45EW** system are classified fire-resistant EW30 to EN 13501-2+A1:2010. The construction is based on aluminium profiles of the "non-thermal" system **MB-45** which has a structural depth of 45mm. The fire resistance of the construction is ensured by materials inserted into the internal chambers of the profiles. The outer surfaces have strips that swell under the effect of temperature.

The system can use fire-resistant glazing EW 30 (thickness 11mm – 15,5mm). The infill is made using standard glazing beads, and the entire construction has steel accessories that protect the glass in case of fire. The **MB-45EW** system enables the fabrication of doors with maximum leaf size of up to 2.40m high and 1.25m wide. Structural capabilities and compatibility with other MB-series systems make this solution very attractive in this product category, while providing an excellent fire protection.



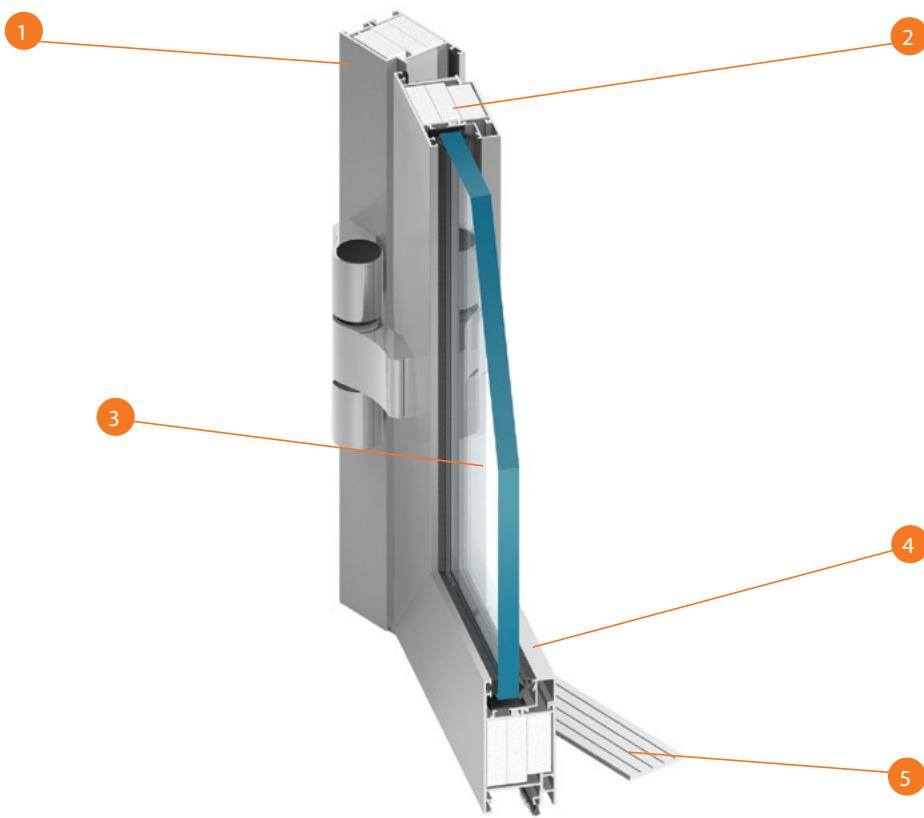
Maximum size of the construction



Technical parameters

Frame depth (wall & door)	45 mm	Range of glazing	11 - 15,5 mm
Door leaf depth	45 mm	Maximum weight of the door leaf	120 kg

Fire partition walls with door MB-45EW

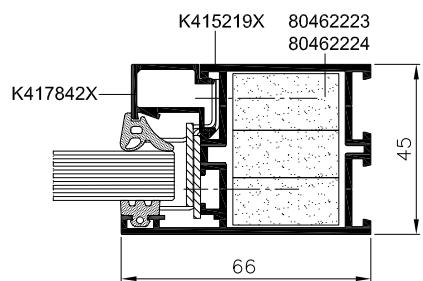


- ① A solution based on MB-45 window & door profiles. Prefabrication made simple and fast with the use of elements that are common to both systems.
- ② Special infills in the profiles and accessories for even better fire rating.
- ③ Possibility to use all standard types of fire resistant glass Pyroguard (EW30).
- ④ "From-the-inside" glazing – with glazing beads.
- ⑤ Low-level threshold solution

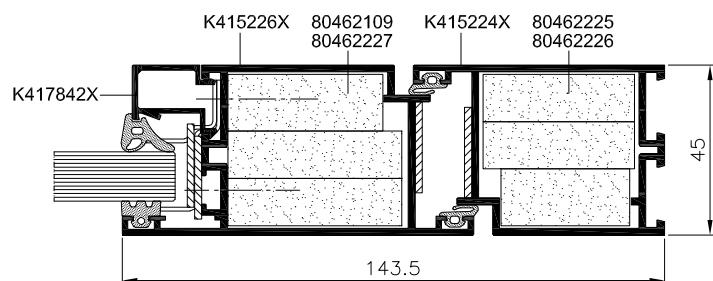


The door & partition wall system MB-45EW has documents issued by Efectis France

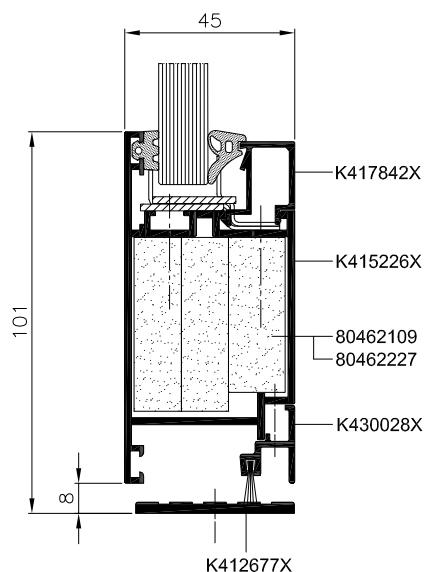
Fixed partition wall, section view



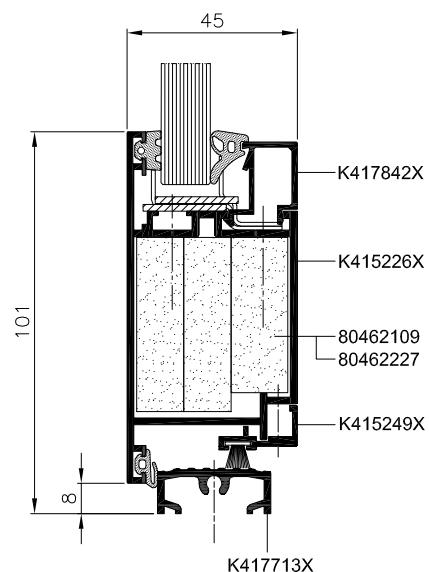
Door, section view



Door with low-level threshold, bottom view



Door with tubular threshold, bottom view



Smoke-proof doors

MB-45D



S_a | **S₂₀₀**



MB-45D partition system is intended for producing partition walls with smoke exhaust single- or double-leaf doors with a class of S_a and S₂₀₀ according to the EN 13501-2:2016 standard. Its construction is based on the elements of internal partitions of the **MB-45** system. Proper performance of the smoke-tightness function is conditioned by the correct application of the leaf peripheral sealings, rear glazing and other fillings as well as the application of threshold seals.

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Centralne Biuro Aprobacji Technicznej w Budownictwie | Ustawa
Czeskiej Europejskiej Organizacji dla Gospodarki Technicznej | EOTA

Serial: APROBATY TECHNICZNE

APROBATA TECHNICZNA ITB AT-15-5163/2016

Nr podstawowe: Aprobata Ministerstwa Infrastruktury z dnia 5 listopada 2004 r. w sprawie aprobat technicznych oraz jednostek organizacyjnych upoważnionych do ich wydawania (test jednostki: Dr. U. z 2014 r., poz. 1040), w wyniku pozytywowania aprobatychnego dokonanego w Instytucie Techniki Budowlanej w Warszawie, na wniosek firmy:

ALUPROF S.A.
43-300 Bielsko-Biala, ul. Warszawska 153

stwierdza się przydatność do stosowania w budownictwie wyrobów pod nazwą:

Drzwi dymoszczelne systemu ALUPROF® MB-45D

w zakresie i na zasadach określonych w Załączniku, który jest integralną częścią niniejszej Aprobaty Technicznej ITB.

Termin wygaśnięcia:
29 grudnia 2021r.

Załącznik:
Postanowienia ogólne i techniczne

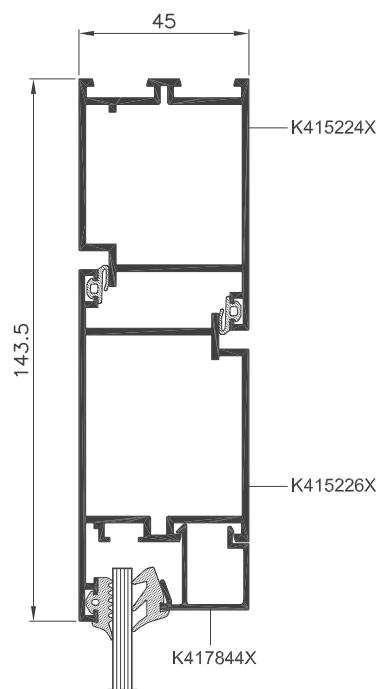
Dyrektor
Instytutu Techniki Budowlanej
dr inż. Maciej M. Kruk

Warszawa, 29 grudnia 2016 r.

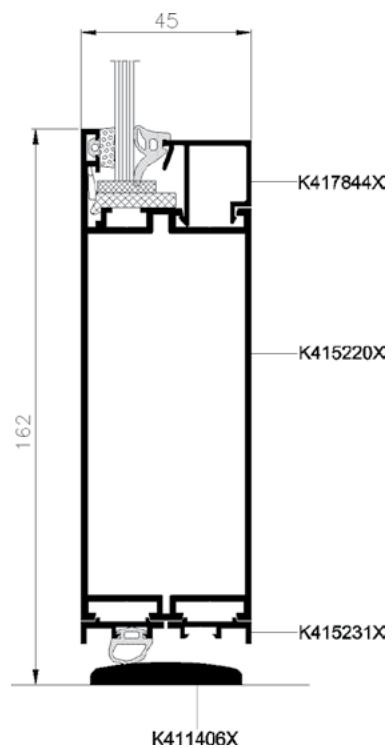
Aprobata Techniczna ITB AT-15-5163/2016 pod nowszzą Aprobaty Technicznej ITB AT-15-5163/2008. Dokument Aprobaty Technicznej ITB AT-15-5163/2016 zawiera 35 stron. Tekst tego dokumentu można kopiować tylko w całości. Publikowanie lub opowielianie w każdej innej formie fragmentów tekstu Aprobaty Technicznej wymaga pisemnego uzgodnienia z instytucją Aprobaty Technicznej.

The **MB-45D** doors hold an ITB's Technical Approval No. AT-15-5163/2016 valid until 29 December 2021.

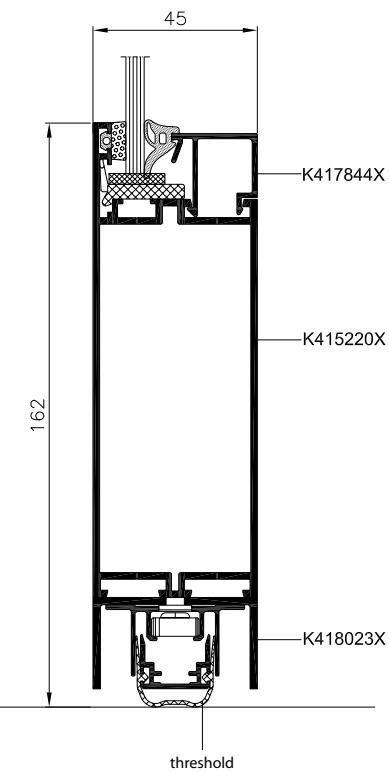
Door frame and door leaf – cross-section



Door with threshold – bottom cross-section



Door without threshold – bottom cross-section



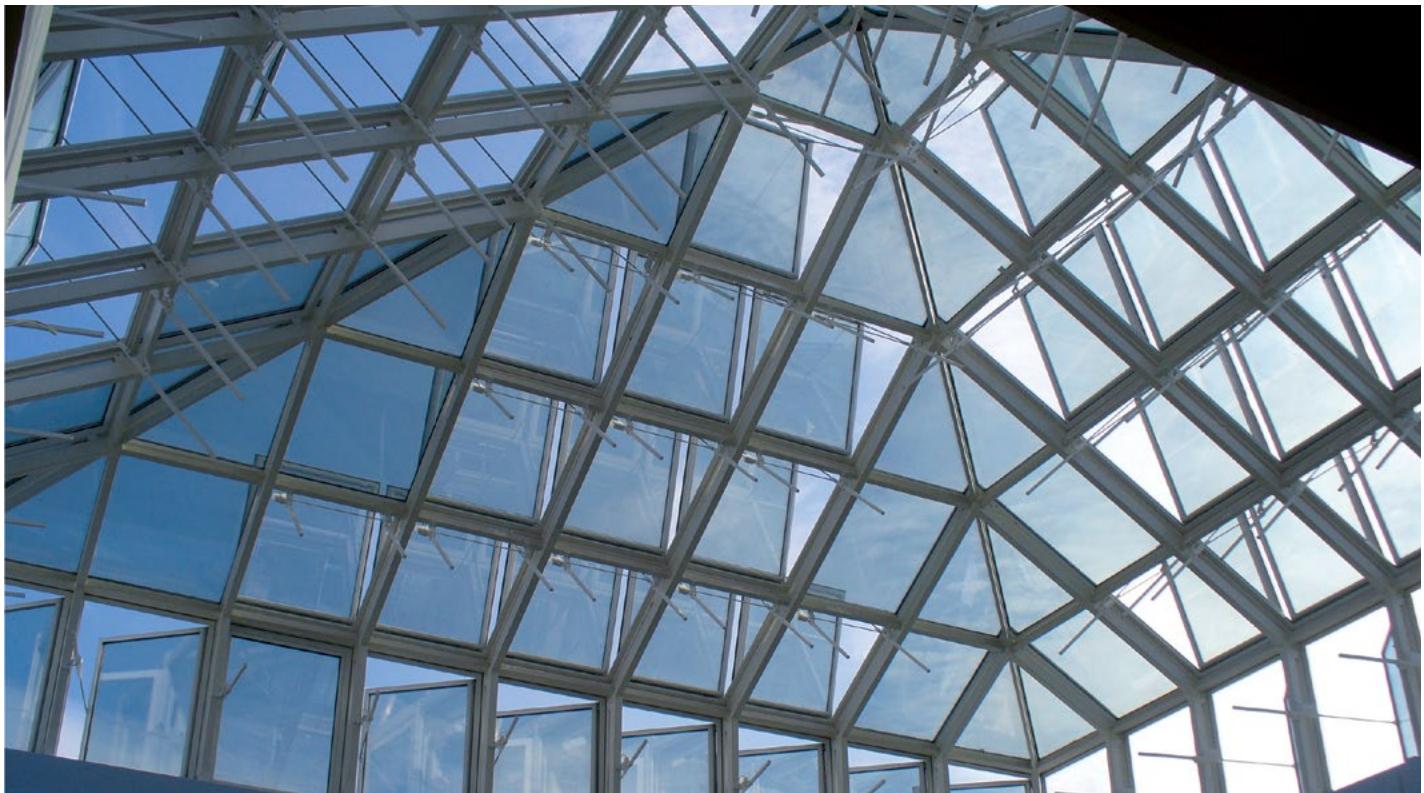
TECHNICAL SPECIFICATION

Door frame depth	45 mm	Glazing range	2 - 25 mm
Door leaf depth	45 mm	Max. leaf door dimension	H up to 2400 mm (2200 mm), L up to 1250 mm (1400 mm)
		Max. leaf door weight	120 kg

Smoke exhaust windows



Maximum window size up to 4 m²



Smoke exhaust windows play a particular role in ensuring safety and comfort for the people staying in the building. When properly selected, they are the elements of gravity ventilation, and when necessary they can help to quickly get rid of smoke & toxic vapours which can be hazardous to health or worse.

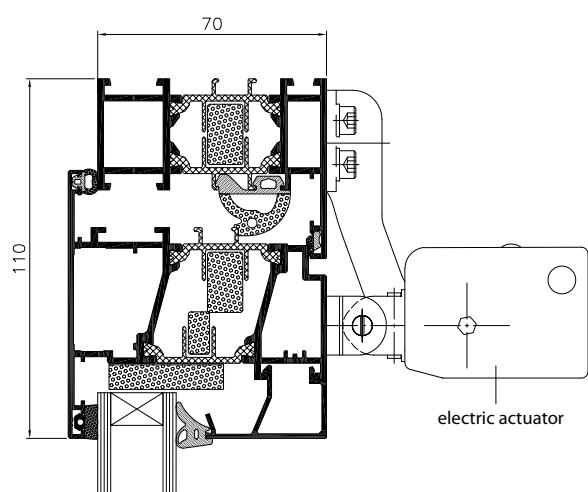
The offer for these products is characterised by the diversity of solutions so they can be used in an individual development, as well as elements integrated with aluminium façades or roof glazed panels.

Smoke exhaust structures can be based on window systems such as **MB-59S**, **MB59S-Casement**, **MB-60**, **MB-60US**, **MB-70**, **MB-70US**, **MB-86**, **MB-86US**, and on the dedicated solutions for façades, such as tilt windows (**MB-SR50N OW**) and skylights (**MB-RW**). There are various options of windows opening – side hinged or tilted inward or outward (top/bottom) as well as the dormers used with tilted façades or with skylights. Smoke exhaust and ventilation system is completed by the aerating windows or doors.

Cross-sections through the MB-RW smoke exhaust window in MB-TT50 system



Cross-section of the the MB-70 system's smoke exhaust window



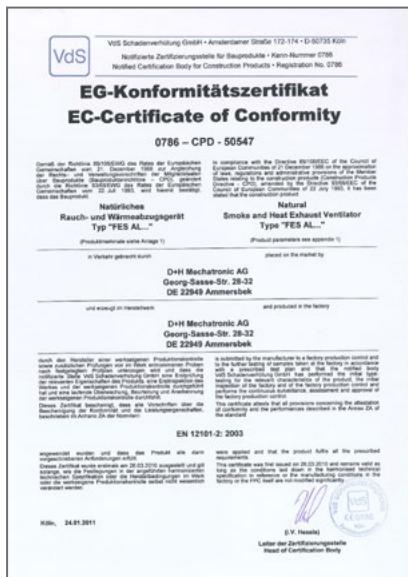
TECHNICAL SPECIFICATION

Max. dimensions of window leaf (horizontal)	L up to 2500 mm, H up to 1600 mm
Max. dimensions of window leaf (vertical)	L up to 1600 mm, H up to 2500 mm
Max. dimensions of roof window leaf	L up to 1500 mm, H up to 2200 mm or L up to 2200 mm, H up to 1500 mm
Max. surface of vertical/roof smoke exhaust window	up to 4.0 m ² / up to 3.3 m ²
Max. opening angle of the smoke exhaust window	up to 90°

The smoke exhaust windows and flaps

The smoke exhaust windows and flaps can be equipped with reliable and silent mechanisms by D+H, GEZE, and for roof windows – also with drives by ESCO. Different types of actuators, including drives with a large opening force (up to 3,000 N) are available. They can be installed in a single window or in synchronised "Tandem" systems. In spite of their responsible function in building, these structures can be characterised by high aesthetics, which is ensured by the possibility of using small-sized drives installed parallel to the window surface.

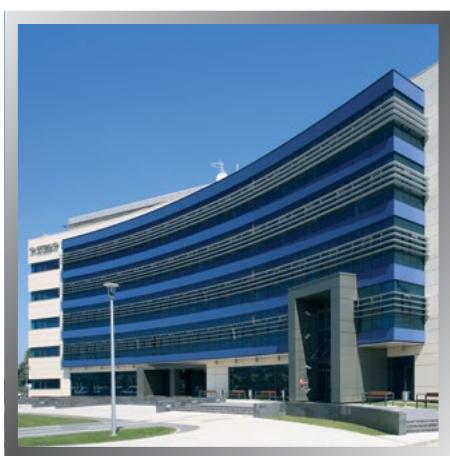
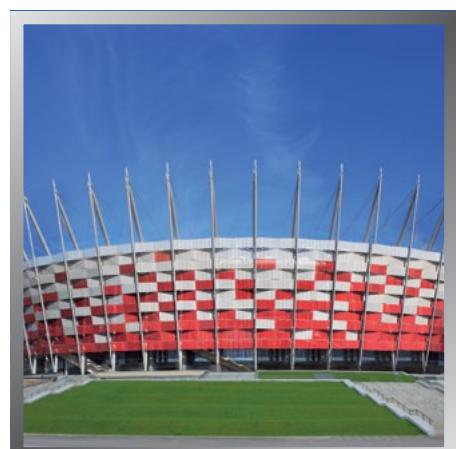
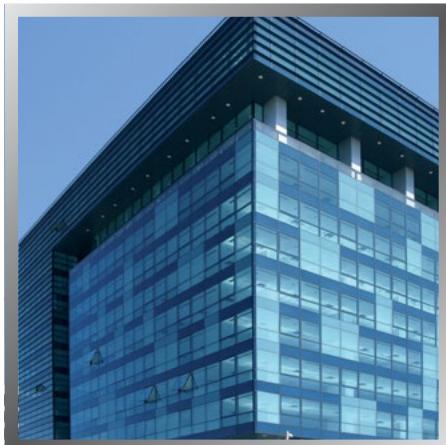
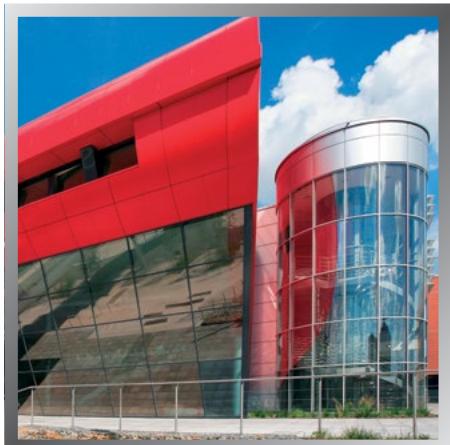
Producers of drives for smoke exhaust windows



EN 12101-2 standard which is the legal basis for the operation of smoke exhaust windows, requires that the equipment used for smoke and heat evacuation would work reliably and correctly every time it is started, during the period of use. Smoke exhaust structures based on Aluprof systems have been tested in accordance with the above standard in the Institutes of IFT and VdS both in terms of effective ventilation area, operational reliability and proper behavior under various operating conditions: the wind load, snow load and also under the influence of low and high temperatures. Through the smoke exhaust window made using Aluprof's systems have appropriate documents confirming the required technical parameters.

REFERENCE PROJECTS

completed using fire protection and smoke
exhaust systems by ALUPROF



www.aluprof.eu/en/realizacje

FIRE RATED AND SMOKE EXHAUST SYSTEMS
Edition 01-2020

Publisher ALUPROF S.A.
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