FIRE RATED AND SMOKE EXHAUST SYSTEMS

ALUPROF
ALUMINIUM SYSTEMS

CONTENT

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 / RE30 for roofs.

The group of products responsible for the safety of buildings' users in the event of a fire includes internal & external partition walls & doors **MB-78EI** (EI15 to EI90) and **MB-60E EI** (EI15, EI30), automatic sliding doors **MB-78EI DPA** (EI15 to EI30), fire rated widnows MB-86EI (EI30), fire walls **MB-118EI** (EI120), fire façades **MB-SR50 EI** and **MB-SR50N EI** (EI30, EI60), fire façades **MB-SR50N EI EFEKT** (EI30, EI60), glazed fire roofs (RE20, RE30, REI20, REI30). Fire partition walls with door **MB-45EW** (EW30), smoke-tight door **MB-45D** (S_a, S_{200} [S_m]) and **windows & smoke 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 the **MB-SR50N EI** curtain wall, enabling the whole structure to achieve a common 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


Instytut Techniki Budowlanej

APROBATA TECHNICZNA ITB
AT-15-6006/2016

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

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

Warszawa, 29 grudnia 2016 r.


certifire

CERTIFICATE OF APPROVAL
No CF 5138

ALUPROF S.A.

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

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

TECHNICAL SCHEDULE: TS25 Fire Resistant Glass, Glazing Systems and Materials

Sir Ken Knight
Chairman - Management Council
Page 1 of 29

Issued: 4th April 2013
Valid to: 3rd April 2018

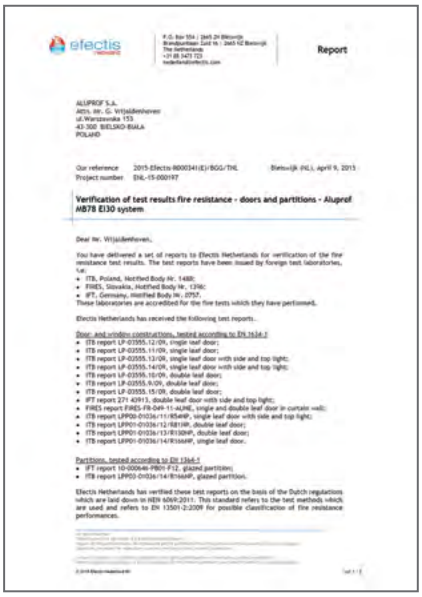

Nachweis

ift ROSENHEIM

ALUPROF S.A.
ul. Warszawska 153
43300 Bielsko-Biała
Polen

zweiflügeliger Feuerschutzabschluss
"MB-78"
2600 mm x 2555 mm
2468 mm x 2492 mm

Feuerschutzabschluss


efectis

Report

ALUPROF S.A.
43-300 BIELSKO-BIALA
POLAND

Verification of test results fire resistance - doors and partitions - Aluprof MB78 EI30 system


FIRES
The Experts On Fire Safety

FIRE RESISTANCE EXPERT JUDGEMENT REPORT
WITH CLASSIFICATION FIRES-JR-112-13-NURE

Single leaf and double leaf sliding automatic door, type MB 78 EI

www.fires.sk


GRYFITLAB

GRYFITLAB'S GROUP OF TESTING LABORATORIES

Fire Tests Laboratory

TEST REPORT No. LBO-446/13E

Sponsor: GLASS-TEAM Sp. z o.o.

Manufacturers: glass POLFLAM EI 90 / construction ALUPROF® MB 78 EI

Tested object: Partition wall (system ALUPROF® MB 78 EI) glazed with glass POLFLAM EI 90


certifire

CERTIFICATE OF APPROVAL
No CF 5139

ALUPROF S.A.

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

CERTIFIED PRODUCT: Aluminium Curtain Walling Systems Type: MB® SR50 EI, MB® SR50N EI, MB® SR50N EI EFEKT for Glazed Curtain Walls, Screens and Roof Glazing including internal and external single and double leaf MB 78EI fire rated doors and single and double leaf sliding automatic MB 78EI DPA fire rated doors

TECHNICAL SCHEDULE: TS25 Fire Resistant Glass, Glazing Systems and Materials

Sir Ken Knight
Chairman - Management Council
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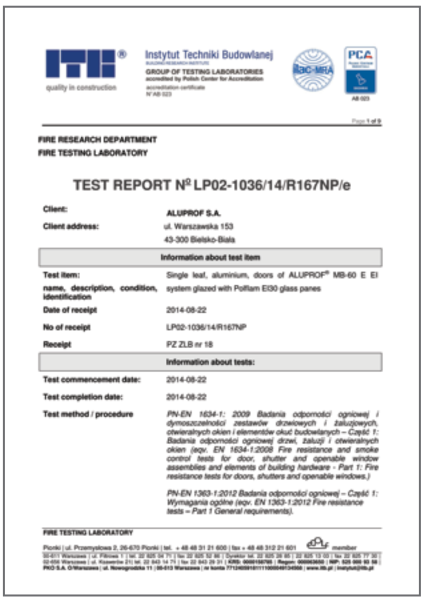
Issued: 15th January 2014
Valid to: 14th January 2019


ÉMI

Vizsgálati jegyzőkönyv


Instytut Techniki Budowlanej

FIRE RESEARCH DEPARTMENT
FIRE TESTING LABORATORY

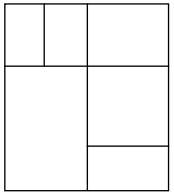
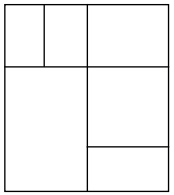
TEST REPORT Nº LP02-1036/14/R167NP/e

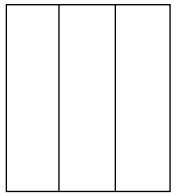
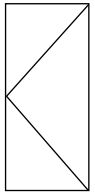
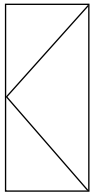
Client: ALUPROF S.A.
Client address: ul. Warszawska 153, 43-300 Bielsko-Biała

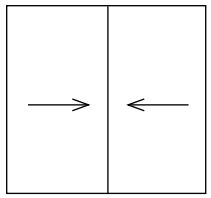
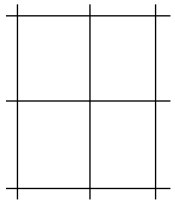
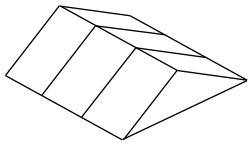
Test item: Single leaf, aluminium, doors of ALUPROF® MB-60 E EI system glazed with Polflam EI30 glass panes

Maximum dimensions of a fire-resisting construction fabricated using ALUPROF's systems, types and maximum glass dimensions

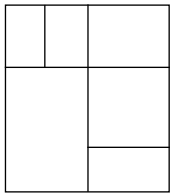
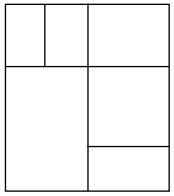
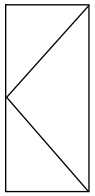
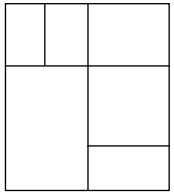
The following table lists the maximum dimensions of fire-resisting constructions with notations and maximum glass dimensions depending on the type of construction and its fire resistance rating. For notations/dimensions of glass that are not listed in the table, please contact our Technical Support Department.

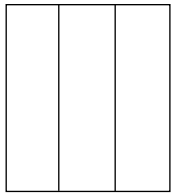
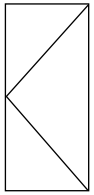
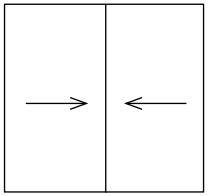
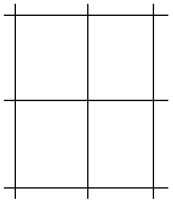
Construction	System	Class	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction /leaf -W x H	Max dims. of the glass-vertical rectangle [mm]	Max dims. of the glass-horizontal rectangle [mm]
 Fixed partitions	MB-60E EI	EI30	Polflam	Polflam EI30	20	no limit x 4000	1500x3000	
	MB-78EI	EI15	AGC	Pyrobel 8	9,3	no limit x 4000	1260x2360	1260x2360
			POLFLAM (Glass-Team)	Polflam EI15	20	no limit x 4000	1500x3000	2320x1465
			Vetrotech (Saint-Gobain)	Contraflam Lite 30	13	no limit x 4000	1500x3000	2500x1500
	MB-78EI	EW30	Vetrotech (Saint-Gobain)	Contraflam Lite 30	13		1500x3000	2500x1500
	MB-78EI	EI30	AGC	Pyrobel 16	17	no limit x 4000	1260x2360	1260x2360
			Polflam	Polflam EI30	20	no limit x 4300	2200x4200	3000x1500
				Polflam EI30	22	no limit x 4000	2200x4000	2200x4000
				Polflam EI30	22	no limit x 4800	2200x4200	2200x4200
			Pilkington	Pyrostop	16		1300x2400	1300x2400
			Promat Top	Promaglas	17	no limit x 4000	1075x2300	2470x1320
			Vetrotech (Saint-Gobain)	Contraflam 30	16	no limit x 4000	1500x3000	3000x1500
			Pyroguard	Pyroguard T-EI30	18	no limit x 4000	1470x2800	2385x1500
 Fixed partitions	MB-78EI	EI30	Q4glass	Q4Firestop	16,5	no limit x 4000	1400x2700	2350x1400
	MB-78EI	EI60	AGC	Pyrobel 25	26	no limit x 4000	1260x2360	1260x2360
				Pyrobel 25 EG	30,4			
			Polflam (Glass-Team)	Polflam EI60	25	no limit x 4000	1500x3000	3000x1500
				Polflam EI60	27	no limit x 4000	2420x4000	2420x4620
				Polflam EI60	27	no limit x 5160	2420x4620	2420x4000
			Pilkington	Pyrostop	23	no limit x 4000	1300x2400	1300x2400
			Pyroguard	Pyroguard T-EI60	28	no limit x 4000	1470x2800	1470x2800
			Vetrotech (Saint-Gobain)	Contraflam 60	25		1500x3000	2500x1500
			Q4glass	Q4Firestop	27	no limit x 4000	1400x2700	2350x1400
	MB-78EI	EI90	Polflam	Polflam EI90	32	no limit x 4000	1500x3000	
	MB-118EI	EI120	Polflam	Polflam EI120	35	no limit x 4000	1500x3000	1508x1467
			Pilkington	Pyrostop 120-10	58	no limit x 4000	1400x2500	1400x1068

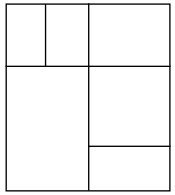
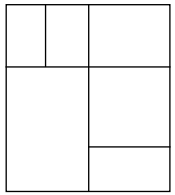
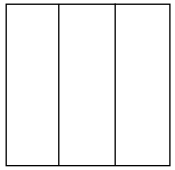
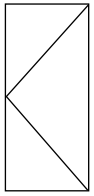
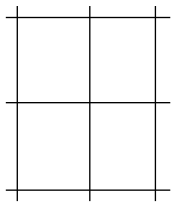
Construction	System	Class	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction /leaf -W x H	Max dims. of the glass-vertical rectangle [mm]	Max dims. of the glass-horizontal rectangle [mm]
 Silicone joined glazed walls	MB-78EI	EI30	Vetrotech (Saint-Gobain)	Contraflam Strukture	23	no limit x 3600	1500x3600	1800x3000
			AGC	Pyrobel VL 16	17	no limit x 2900	1000x2900	
		EI60	Vetrotech (Saint-Gobain)	Contraflam Strukture	31	no limit x 3400	1500x3400	1700x3000
			AGC	Pyrobel VL 25	26	no limit x 3480	1000x3480	1200x2900
 doors and windows	MB-60E EI	EI30	Polflam	Polflam EI30	20	1400x2475 / 2580x2475		
	MB-78EI	EI15	AGC	Pyrobel 8	9,3	1260x2360		
			POLFLAM (Glass-Team)	Polflam EI15	20	1400x2500 / 2500x2500		
			Vetrotech (Saint-Gobain)	Contraflam Lite 30	13	1160x2250		
	MB-78EI	EI30	AGC	Pyrobel 16	17,3	1400x2500		
				Pyrobel 16 EG	21,2			
			Polflam (Glass-Team)	Polflam EI30	20	1400x2500/2500x2500		
				Polflam EI30	20	1100x3006/2184x3006		
			Pilkington	Pyrostop	16	1400x2500/2500x2500		
			Promat Top	Promaglas	17	1075x2300		
			Pyroguard	Pyroguard T-EI30	18	1400x2500/2500x2500		
			Vetrotech (Saint-Gobain)	Contraflam 30	16	1400x2500/2500x2500		
			Q4glass	Q4Firestop	16,5	1260x2300		
	MB-86EI	EI30	Polflam	Polflam EI30	20	1500x2300/2400x1300	1385x2185	2236x1135
 doors and windows	MB-78EI	EI60	AGC	Pyrobel 25	26	1400x2500/2500x2500		
			Polflam (Glass-Team)	Polflam EI60	25	1400x2500/2500x2500		
				Polflam EI60	25	1100x3006/2184x3006		
			Pilkington	Pyrostop	23	1400x2500		
			Pyroguard	Pyroguard T-EI60	25	1400x2500/2500x2500		
			Vetrotech (Saint-Gobain)	Contraflam 60	25	1400x2500		
			Q4glass	Q4Firestop	27	1400x2500		
	MB-78EI	EI90	AGC	Pyrobel 90/35	36	1400x2500		
			Pilkington	Pyrostop 90-102	37	1265x2300		
			Vetrotech (Saint-Gobain)	Contraflam 90	40	1260x2360		

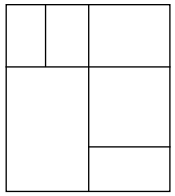
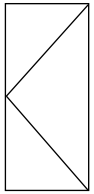
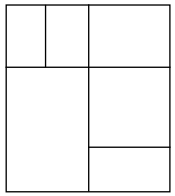
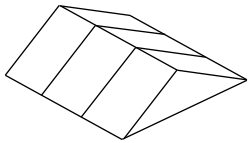
Construction	System	Class	Glass manufacturer	Type of single or inner pane in insulating glass unit	Thickness [mm]	Max dims. of the construction /leaf -W x H	Max dims. of the glass-vertical rectangle [mm]	Max dims. of the glass-horizontal rectangle [mm]
 Automatic sliding doors	MB-78 EI DPA	EI30	Polflam	Polflam EI30	20	1350x2550/1350x2710		
			Vetrotech (Saint-Gobain)	Contraflam 30	16, 18, 22	1350x2550		
 curtain wall	MB-SR50N EI	EI30	Polflam (Glass-Team)	Polflam EI30	20		1500x3000	2400x1500
			Pilkington	Pyrostop 30	16		1400x2400	1800x1200
			Vetrotech (Saint-Gobain)	Contraflam 30	16		1500x3000	1700x1200
				Contraflam 30 - 20	20		1500x3000	1700x1200
	MB-SR50N EI	EI60	Polflam	Polflam EI60	25		1500x3000	2400x1500
			Pilkington	Pyrostop 60	23		1400x2400	1800x1200
			Vetrotech (Saint-Gobain)	Contraflam 60	25		1400x2400	1800x1200
				Contraflam 60-3	27		1500x3000	1700x1200
			Q4Glass	Q4Fire Stop 60	30		1500x3000	2000x1500
	MB-SR50N EI EFEKT	EI30	Polflam	Polflam EI30	20		1500x3000	2000x1500
	MB-SR50N EI EFEKT	EI60	Polflam	Polflam EI60	25		1500x3000	2000x1500
			Vetrotech (Saint-Gobain)	Contraflam	25, 29		1500x3146	
			Q4glass	Q4Firestop	30		1500x3000	2000x1500
 skylight	MB-SR50N EI	REI30/RE30	Polflam	Polflam H EI30	22		1200x2200	
			Vetrotech (Saint-Gobain)	Contraflam Lite 30 Horizontal	20		1100x2100	

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	 Fixed partitions	MB-78EI	Vetrotech (Saint-Gobain)	Contraflam Lite 30	13	no limit x 4000	1500x3000	2500x1500	22
EI15	 Fixed partitions	MB-78EI	AGC	Pyrobel 8	9,3	no limit x 4000	1260x2360	1260x2360	22
			Polflam	Polflam EI15	20	no limit x 4000	1500x3000	3000x1500	
			Vetrotech (Saint-Gobain)	Contraflam Lite 30	13, 15, 19	no limit x 4000	1500x3000	2500x1500	
EI15	 doors and windows	MB-78EI	AGC	Pyrobel 8	9,3	1260x2360			22
			Polflam	Polflam EI15	20	1400x2500/2500x2500			
			Vetrotech (Saint-Gobain)	Contraflam Lite 30	13	1160x2250			
EI30	 Fixed partitions	MB-60E EI	Polflam	Polflam EI30	20	no limit x 4000	1500x3000		18
		MB-78EI	AGC	Pyrobel 16	17	no limit x 4000	1260x2360	1260x2360	22
			Polflam	Polflam EI30	20	no limit x 4300	2200x4200	3000x1500	
				Polflam EI30	22	no limit x 4000	2200x4000	2200x4000	
				Polflam EI30	22	no limit x 4800	2200x4200	2200x4200	
			Pilkington	Pyrostop	16	no limit x 4000	1300x2400	1300x2400	
			Promat Top	Promaglas	17	no limit x 4000	1075x2300	2470x1320	
			Pyroguard	Pyroguard T-EI30	18	no limit x 4000	1470x2800	2385x1500	
			Vetrotech (Saint-Gobain)	Contraflam 30	16	no limit x 4000	1500x3000	3000x1500	
			Q4glass	Q4Firestop	16,5	no limit x 4000	1400x2700	2350x1400	

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
EI30	 Silicone joined glazed walls	MB-78EI	Vetrotech (Saint-Gobain)	Contraflam Strukture	23	no limit x 3600	1500x3600	1800x3000	28
			AGC	Pyrobel VL 16	17	no limit x 2900	1000x2900		
EI30	 doors and windows	MB-60E EI	Polflam	Polflam EI30	20	1400x2475/2580x2475			18
		MB-78EI	AGC	Pyrobel 16	17,3	1400x2500			22
				Pyrobel 16 EG	21,2				
			Polflam	Polflam EI30	20	1400x2500/2500x2500			
				Polflam EI30	20	1100x3006/2184x3006			
			Pilkington	Pyrostop 30-10	15	1400x2400			
			Promat Top	Promaglas	17	1400x2500			
			Vetrotech (Saint-Gobain)	Contraflam 30	16	1400x2500 / 2500x2500			
			Q4glass	Q4Firestop	16,5	1260x2300			
		MB-86EI	Polflam	Polflam EI30	20	1500x2300/2400x1300	1385x2185	2236x1135	36
EI30	 Automatic sliding doors	MB-78 EI DPA	Polflam	Polflam EI30	20	1350x2550/1350x2710			34
			Vetrotech (Saint-Gobain)	Contraflam 30	16, 18, 22	1350x2550			
EI30	 curtain wall	MB-SR50N EI	Polflam	Polflam EI30	20		1500x3000	2400x1500	44
			Pilkington	Pyrostop 30	16		1400x2400	1800x1200	
			Vetrotech (Saint-Gobain)	Contraflam 30	16		1500x3000	1700x1200	
				Contraflam 30-20	20		1500x3000	1700x1200	
		MB-SR50N EI EFEKT	Polflam	Polflam EI30	20		1500x3000	2000x1500	48

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
EI60	 Fixed partitions	MB-78EI	AGC	Pyrobel 25	26,6	no limit x 4000	1260x2360	2700x1400	22
			Polflam	Polflam EI60	25	no limit x 4000	1500x3000	3000x1500	
				Polflam EI60	27	no limit x 4000	2420x4000	2420x4000	
				Polflam EI60	27	no limit x 5160	2420x4620	2420x4620	
			Pilkington	Pyrostop	23	no limit x 4000	1300x2400	1300x2400	
			Pyroguard	Pyroguard T-EI60	28	no limit x 4000	1470x2800	1470x2800	
EI60	 Fixed partitions	MB-78EI	Vetrotech (Saint-Gobain)	Contraflam 60	25		1500x3000	2500x1500	22
			Q4glass	Q4Firestop	27	no limit x 4000	1400x2700	2350x1400	
EI60	 Silicone joined glazed walls	MB-78EI	Vetrotech (Saint-Gobain)	Contraflam Strukture	31	no limit x 3400	1500x3400	1700x3000	28
			AGC	Pyrobel VL 25	26	no limit x 3480	1000x3480	1200x2900	
EI60	 doors and windows	MB-78EI	AGC	Pyrobel 25	26,6	1400x2500 / 2500x2500			22
			Polflam	Polflam EI60	25	1400x2500/2500x2500			
				Polflam EI30	20	1100x3006/2184x3006			
			Pilkington	Pyrostop	23	1400x2500			
			Vetrotech (Saint-Gobain)	Contraflam 60	25	1400x2500			
			Q4glass	Q4Firestop	27	1260x2300			
EI60	 curtain wall	MB-SR50N EI	Polflam	Polflam EI60	25		1500x3000	2400x1500	44
			Pilkington	Pyrostop	23		1400x2400	1800x1200	
			Vetrotech (Saint-Gobain)	Contraflam 60	25		1500x3000	1700x1200	
				Contraflam 60-3	27		1500x3000	1700x1200	
			Q4glass	Q4Firestop	60		1500x3000	2000x1500	
		MB-SR50N EI EFEKT	Polflam	Polflam SG EI-60	27		1500x3000	2000x1500	48
			Vetrotech (Saint-Gobain)	Contraflam 60	25, 29		1576x3146		
			Q4glass	Q4Firestop	30		1500x3000	2000x1500	

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	 Fixed partitions	MB-78EI	Polflam	Polflam EI90	32	no limit x 4000	1500x3000		22
EI90	 doors and windows	MB-78EI	AGC	Pyrobel 90/35	36	360x460			22
			Pilkington	Pyrostop 90-102	37	1265x2300			
			Vetrotech (Saint-Gobain)	Contraflam 90	40	1260x2360			
EI120	 Fixed partitions	MB-118EI	Polflam	Polflam EI120	35	no limit x 4000	1500x3000	1508x1467	40
			Pilkington	Pyrostop 120-10	58	no limit x 4000	1400x2500	1400x1068	
REI30/RE30	 Dach	MB-SR50N EI	Polflam	Polflam H EI30	22		1200x2200		50
			Vetrotech (Saint-Gobain)	Contraflam Lite 30 Horizontal	20		1100x2100		

GLAZED PARTITION SYSTEMS:

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

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Fire partition walls with door

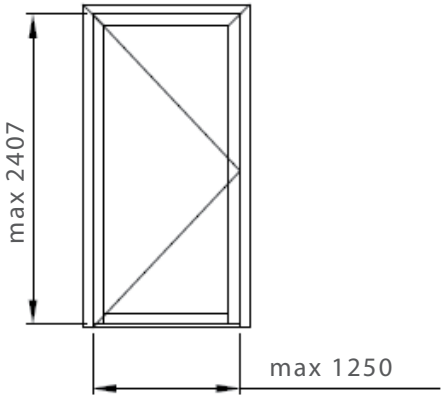
MB-45EW

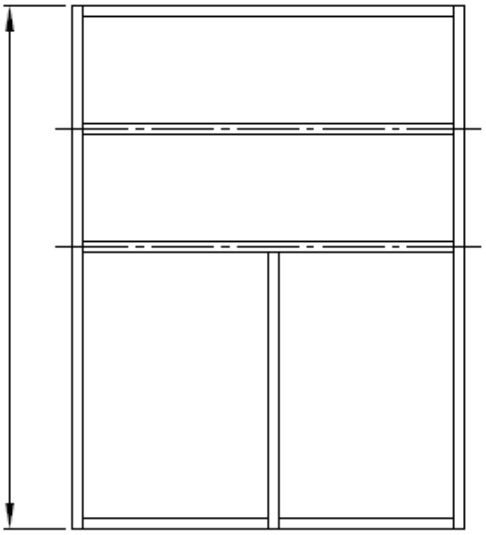
EW 30

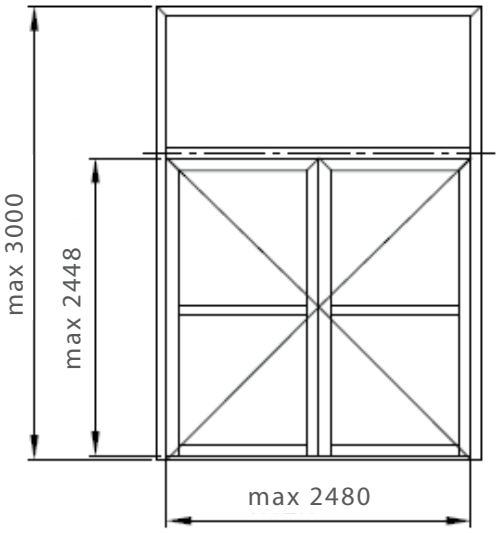
The **MB-45EW** system enables the fabrication of fire-rated single and double doors and fixed partition walls with doors. The constructions based on the **MB-45EW** system are classified fire-resistant EW30 to EN 13501-2+A1:2010. The construction is based on aluminium profiles of the "non-thermal" system **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.

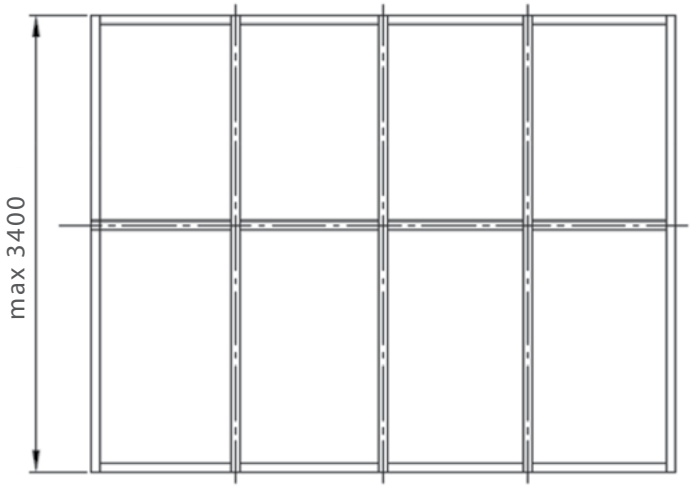
The system can use fire-resistant glazing EW 30 (thickness 11mm – 15,5mm). The infill is made using standard glazing beads, and the entire construction has steel accessories that protect the glass in case of fire. The **MB-45EW** system enables the fabrication of doors with maximum leaf size of up to 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.

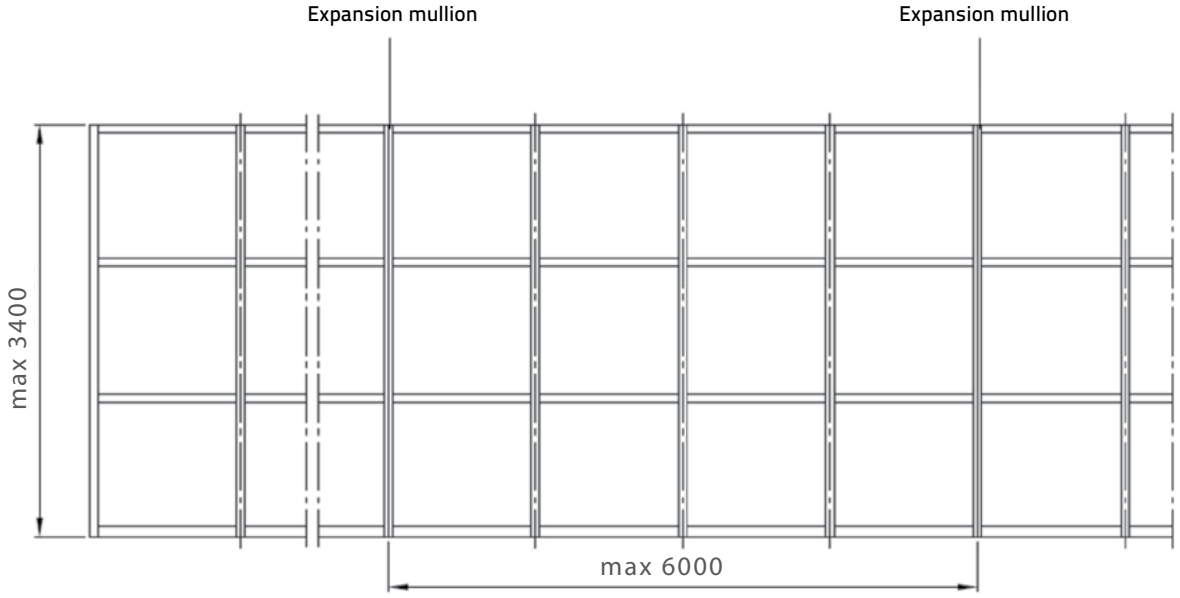
Maximum size of the construction







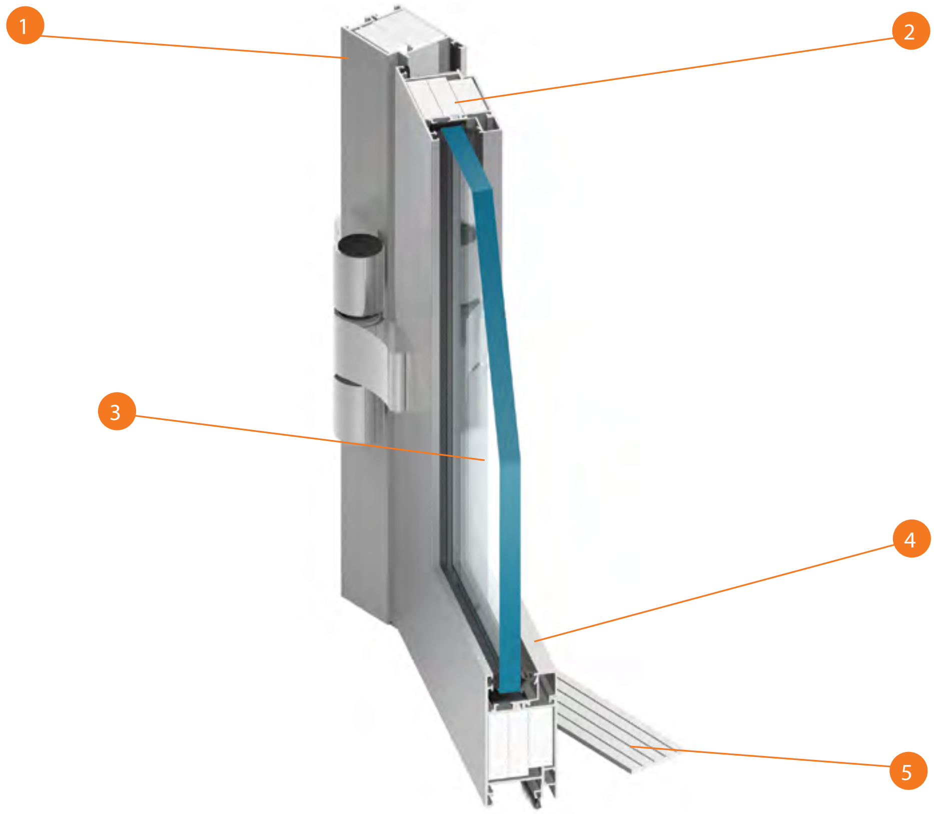




Technical parameters			
Frame depth (wall & door)	45 mm	Range of glazing	11 - 15,5 mm
Door leaf depth	45 mm	Maximum weight of the door leaf	120 kg

Fire partition walls with door

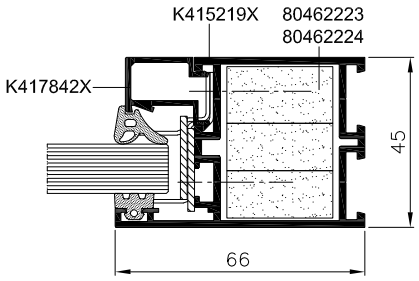
MB-45EW



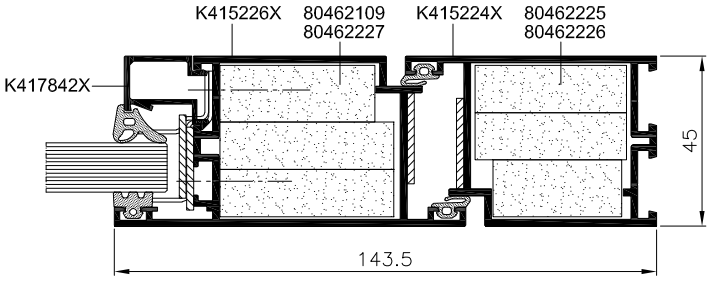
1. A solution based on MB-45 window & door profiles. Prefabrication made simple and fast with the use of elements that are common to both systems.
2. Special infills in the profiles and accessories for even better fire rating.
3. Possibility to use all standard types of fire resistant glass Pyroguard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

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

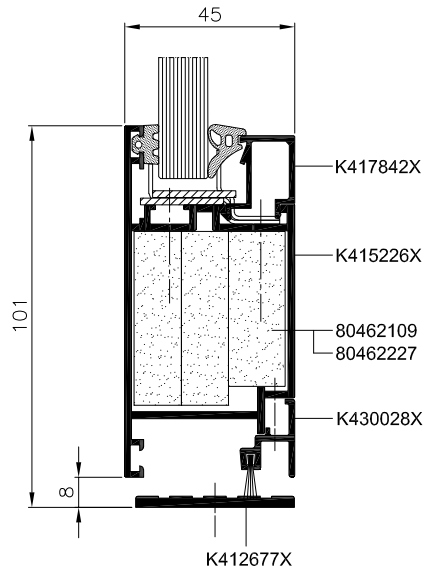
Fixed partition wall, section view



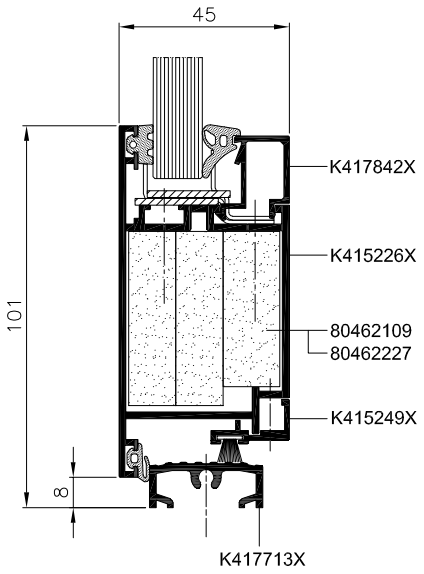
Door, section view



Door with low-level threshold, bottom view



Door with tubular threshold, bottom view



Fire rated partitions with doors

MB-60E EI

EI 15 **EI 30**

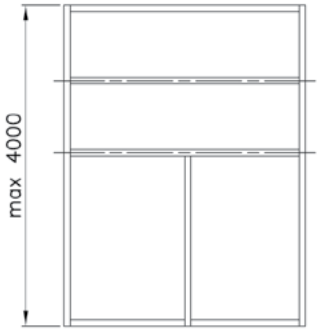
MB-60E EI enables the fabrication of fire-resisting internal or exterior single or double leaf doors. It also enables the fabrication of "technical windows" and fire-resisting partitions. **MB-60E EI**-based constructions are classified EI15 or EI30 to EN 13501-2+A1:2010, doors can additionally meet smoke-tightness requirements in class S_m, S_a to EN 13501-2 + A1: 2010. The system is classified as non-fire spreading (NRO).

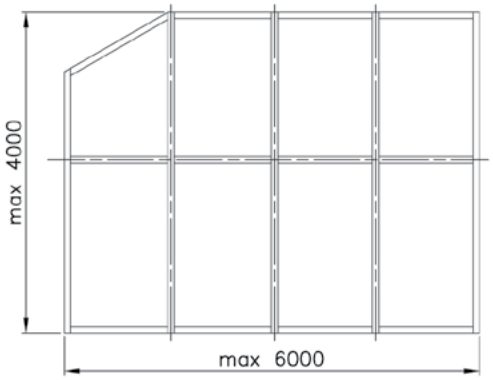
This solutions is based on aluminium profiles with thermal break (system MB-60E) with the structural depth of profiles of 60 mm. The fire resistance of the construction is ensured by its fire insulation components that are mounted in internal chambers of its profiles. In addition, constructions are equipped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

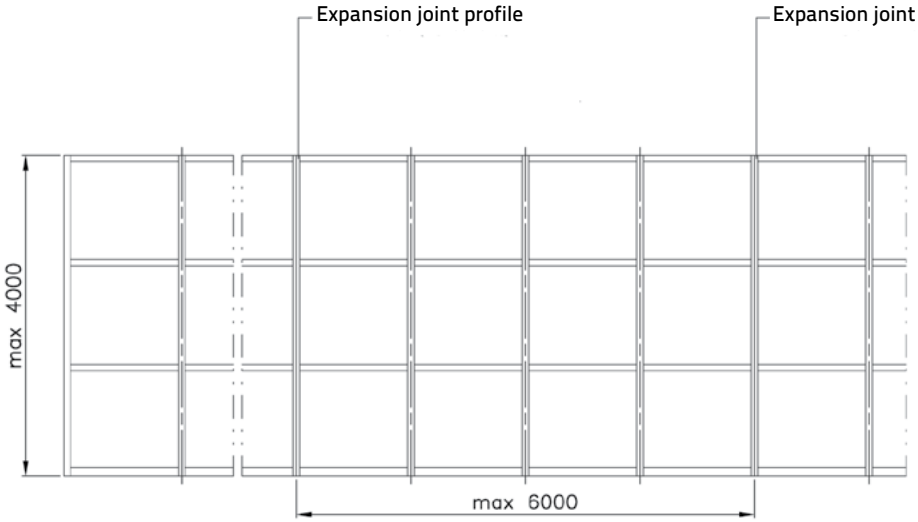
The system enables the application of all common fire-resisting glass classified EI15 and EI30 (thickness from 5 to 41 mm). Unlike other fire-resisting systems, **MB-60 E EI** glass is fastened on the inner face using glazing strips. Special steel elements are an important element in securing the glass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

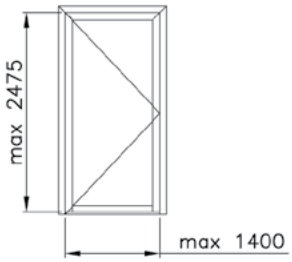


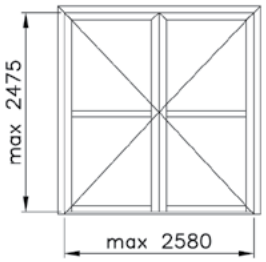


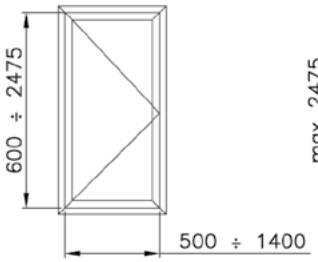


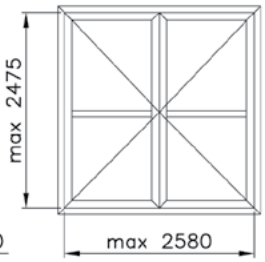
Doors

Technical window





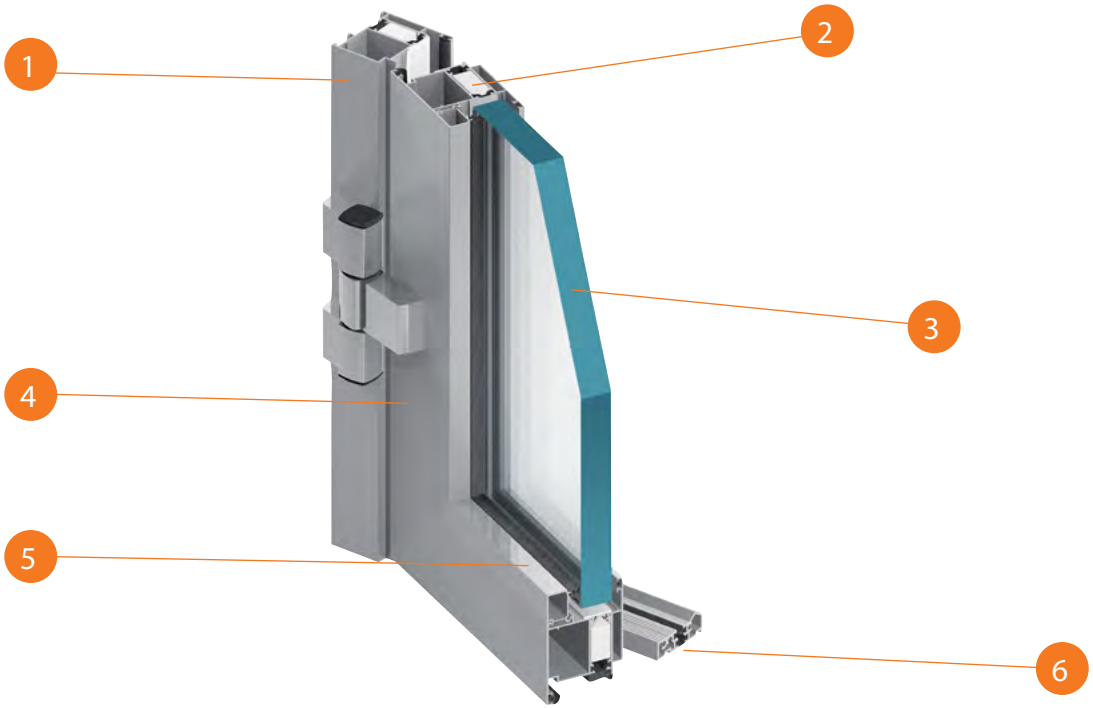




TECHNICAL INFORMATION		TECHNICAL PARAMETERS	
Depth of the partition frame & door	60 mm	Air tightness	class 2, PN-EN 12207:2001
Depth of the door leaf	60 mm	Water tightness	class 3A, PN-EN 12208:2001
Range of glazing	5 – 41 mm	Fire resistance rating	EI15, EI30, EN 13501-2 +A1

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

Instytut Techniki Budowlanej

Seria: APROBATY TECHNICZNE

APROBATA TECHNICZNA ITB
AT-15-6006/2016

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

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

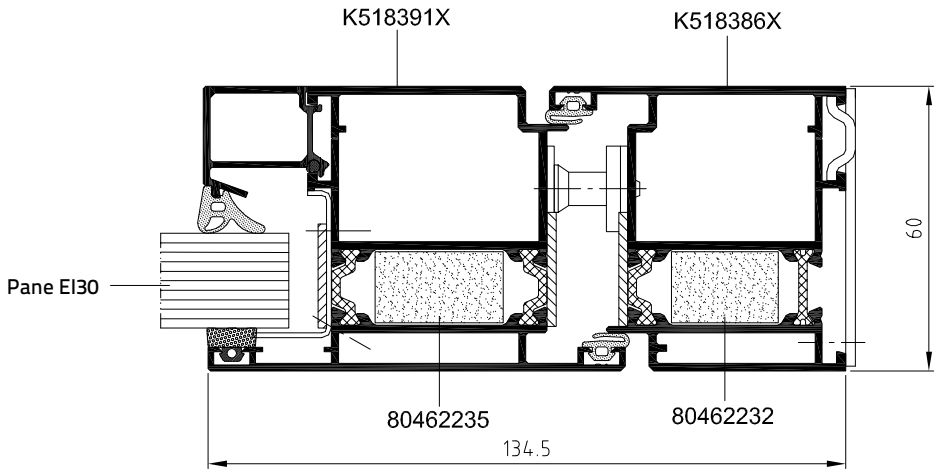
Termin ważności:
29 grudnia 2021 r.

Załącznik:
Postanowienia ogólne i techniczne

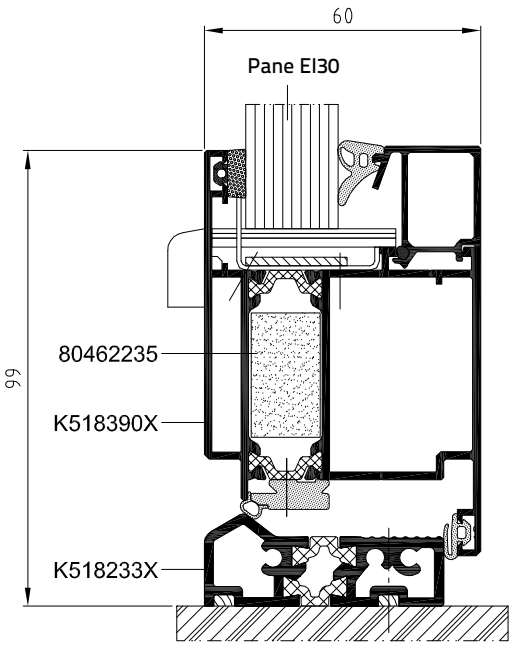
Warszawa, 29 grudnia 2016 r.

MB-60E EI-based constructions are covered by the Technical Approval of the No. AT-15-6006/2016

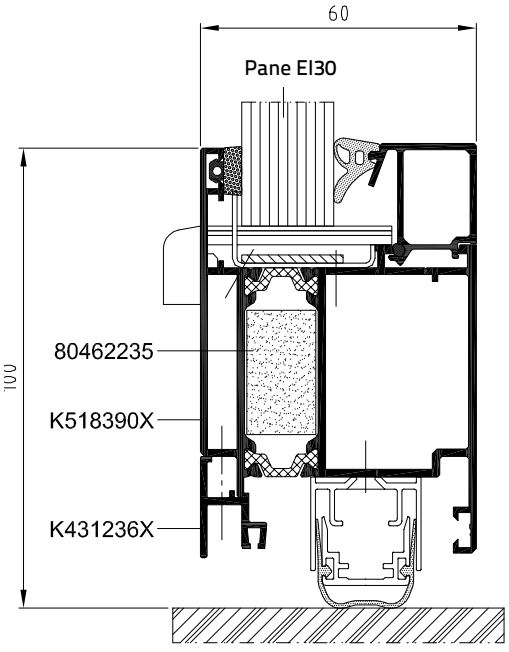
Door frame and door leaf – cross-section



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**

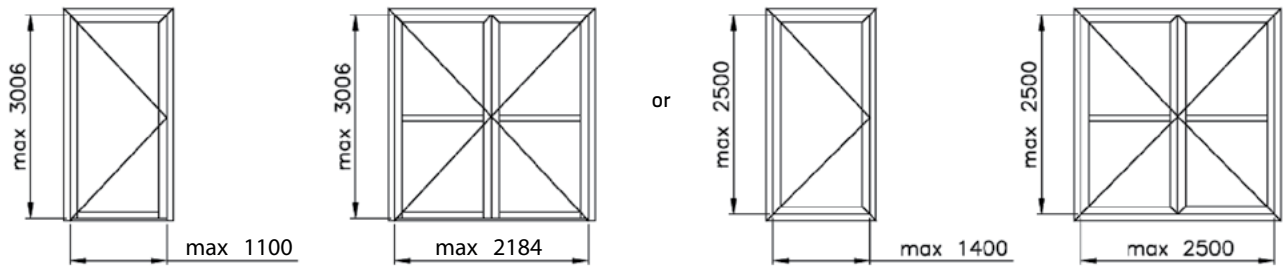
The **MB-78EI** system has been developed for the producing of internal or external fire rated partition walls, with single- or double-leaf doors featured by a fire resistance class of EI 15, EI 30, EI45 EI 60 or EI 90, according to the PN-EN 13501-2:2010 standard. Numerous tests and calculations have 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.

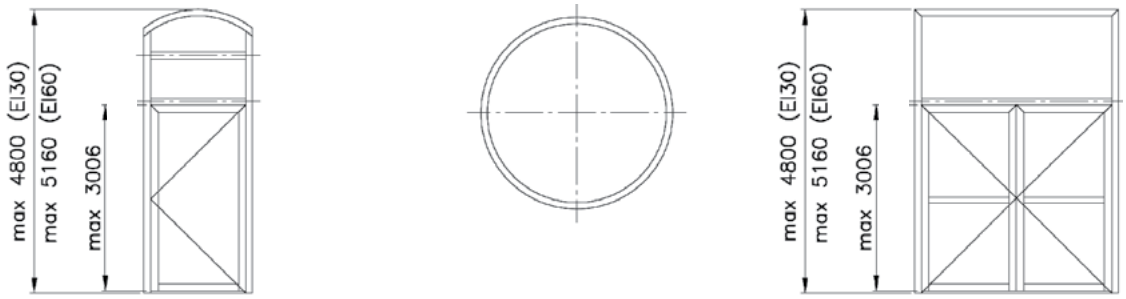
The structure of the **MB-78 EI** system is based on the thermally-insulated, 78 mm deep aluminium profiles. They are characterized by a low overall heat transfer coefficient "U," thanks in the main, to specialist design thermal break, 34mm in width. The resistance to high temperature is assured by special 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.

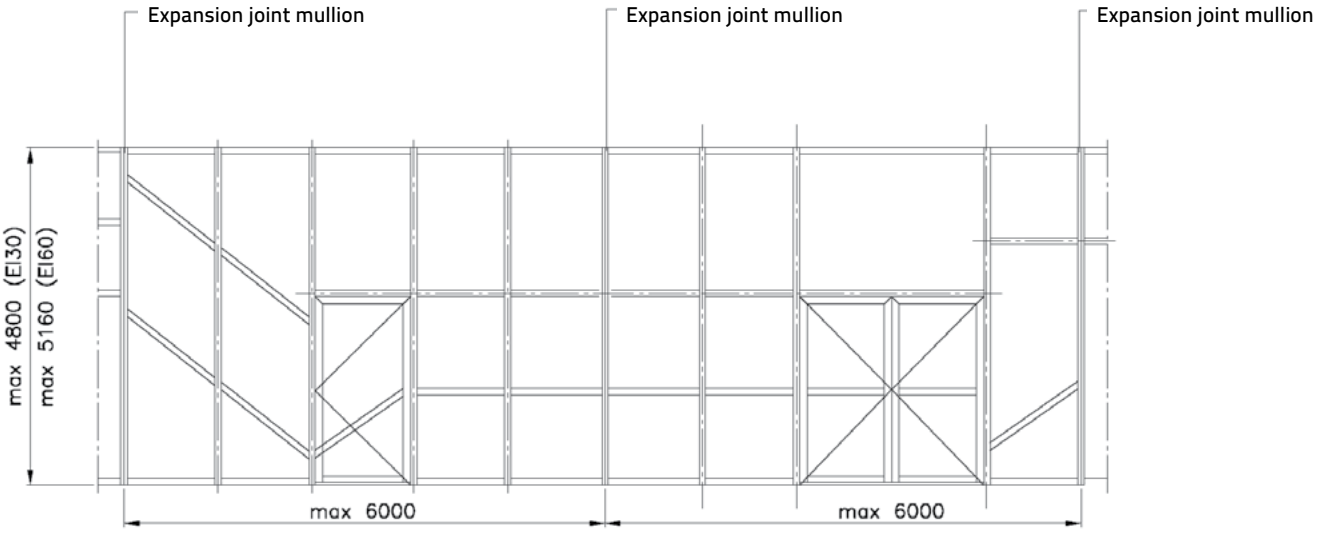
Angular wall connections are achievable with the system, as is the possibility of bending & curving profiles, in order to satisfy the glazing of typical, if not traditional, "arch head" openings. Further architectural frame features that would have an effect on the aesthetics of a building, are available in the form of decorative muntins & glass applied "Georgian effect" bars.

The maximum limitations of the system would permit a fixed wall up to 5,16 m in height, and hinged doors of a maximum leaf size 1.4 m x 3.0 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 curtain wall facades, our **MB-SR50N EI** and **MB-SR50 EI** systems. 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



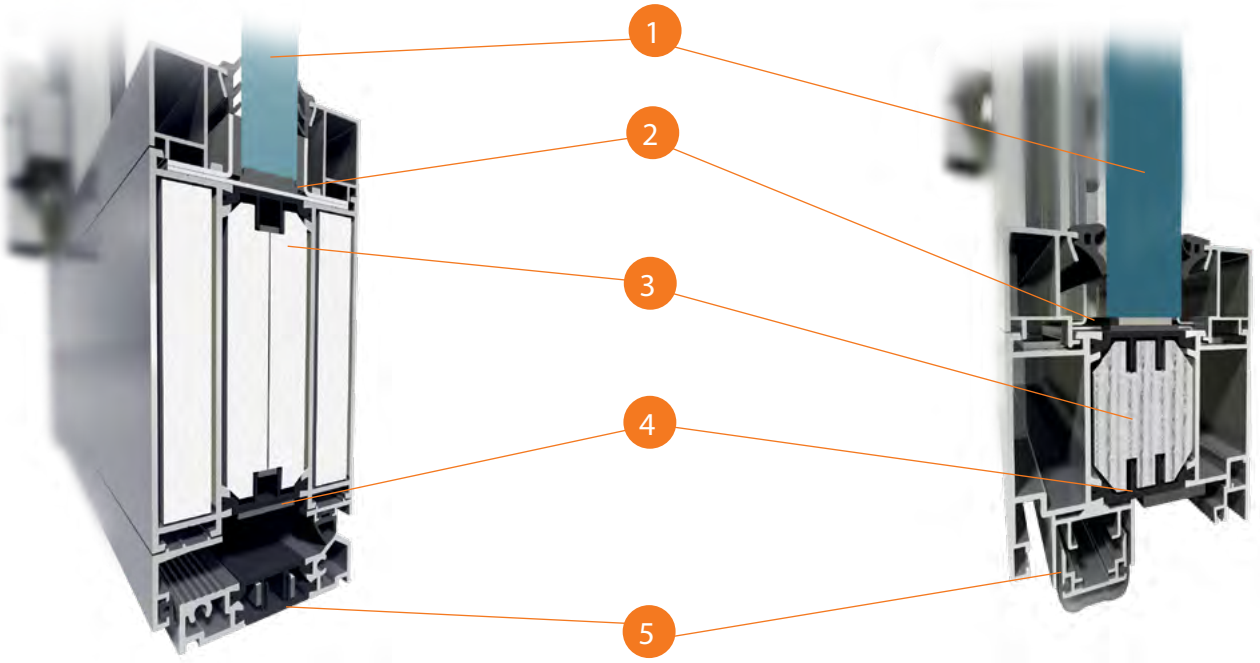




TECHNICAL SPECIFICATION		TECHNICAL PARAMETERS	
Depth of wall & door frame	78 mm	Air Permeability	Class 2, PN-EN 12207:2001
Depth of leaf	78 mm	Watertightness	Class 5A, PN-EN 12208:2001
Width of wall & door frame	51 mm / 72 mm	Fire resistance	Classes EI 15, EI 30, EI45, EI 60, EI 90 in accordance with 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.)	from 1,6 W/(m^{2}K)
Glazing range	8 – 49 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 49 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 m^2K)
5. Different door bottom rail seal solutions: with & without threshold profile option, obtaining a smoke-proof class S_m 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.

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
- Q4Firestopof a thickness of 16,5 mm – 27 mm

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

Instytut Techniki Budowlanej

Seria: APROBATY TECHNICZNE

APROBATA TECHNICZNA ITB
AT-15-6006/2016

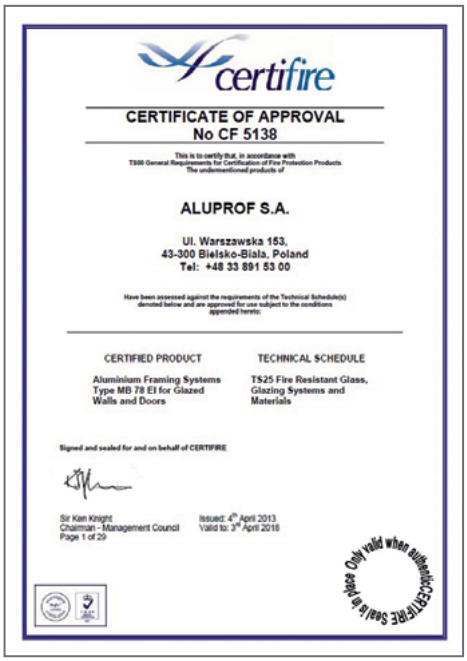
ALUPROF S.A.
43-300 Bielsko-Biała, ul. Warszawska 153

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

Termin ważności: 29 grudnia 2021 r.

Załącznik: Postanowienia ogólne i techniczne

Warszawa, 29 grudnia 2016 r.



certifire

CERTIFICATE OF APPROVAL
No CF 5138

ALUPROF S.A.

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

CERTIFIED PRODUCT

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

TECHNICAL SCHEDULE

TS25 Fire Resistant Glass, Glazing Systems and Materials

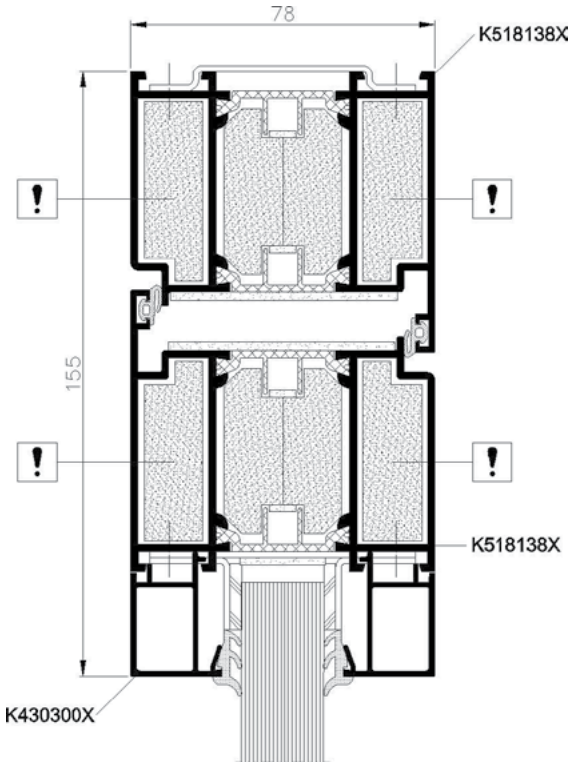
Signed and sealed for and on behalf of CERTIFIRE

Sir Ken Knight
Chairman - Management Council
Page 1 of 29

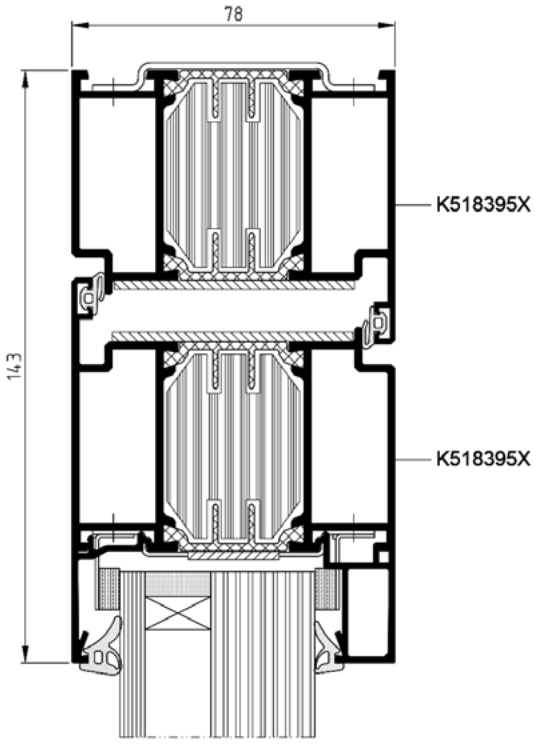
Issued: 4th April 2013
Valid to: 3rd April 2018

Only valid when authenticated CERTIFIRE Seal is in place

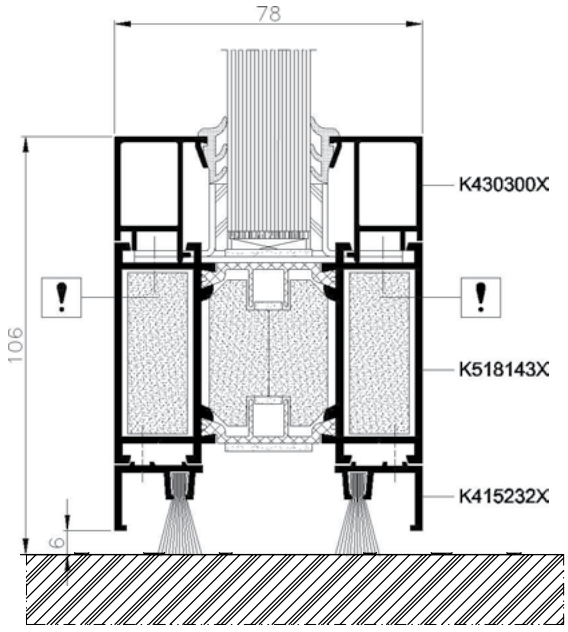
Door frame and door leaf – cross-section



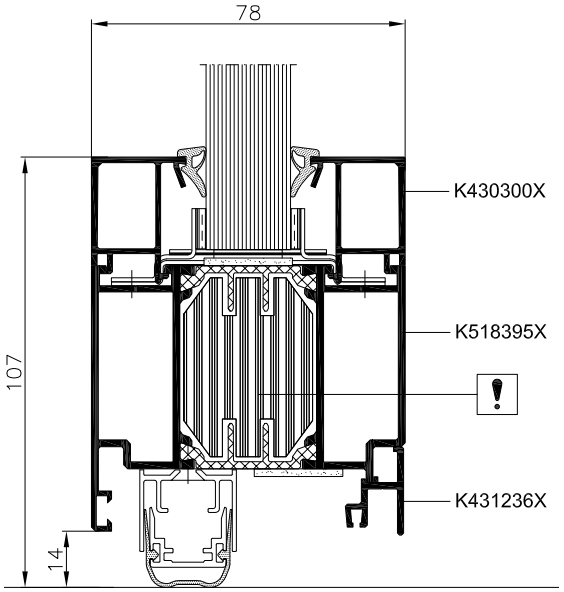
Door frame and door leaf with CI infills – cross-section



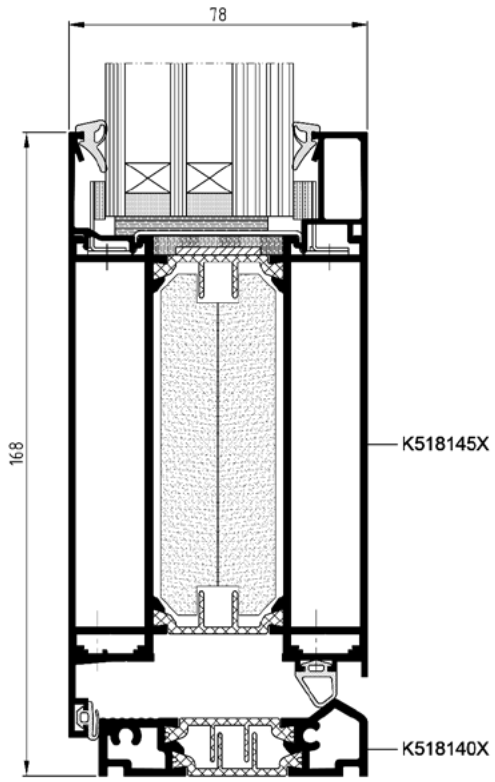
Door without a threshold – bottom cross-section



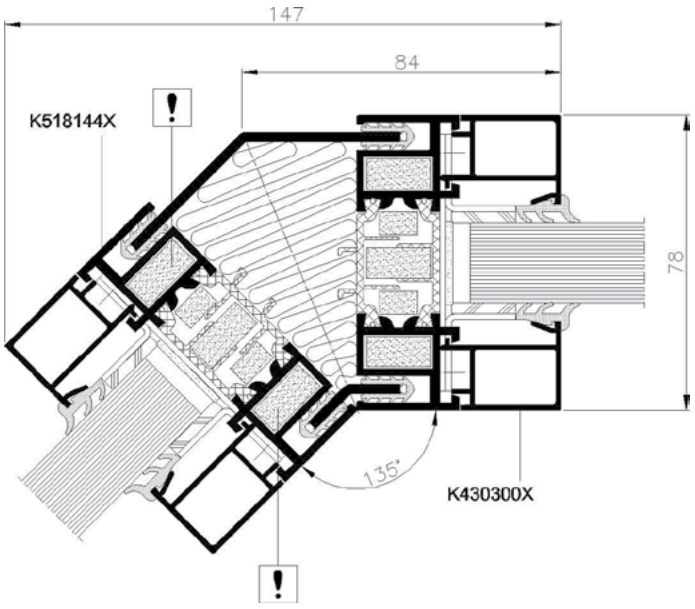
Door leaf with drop seal – cross-section



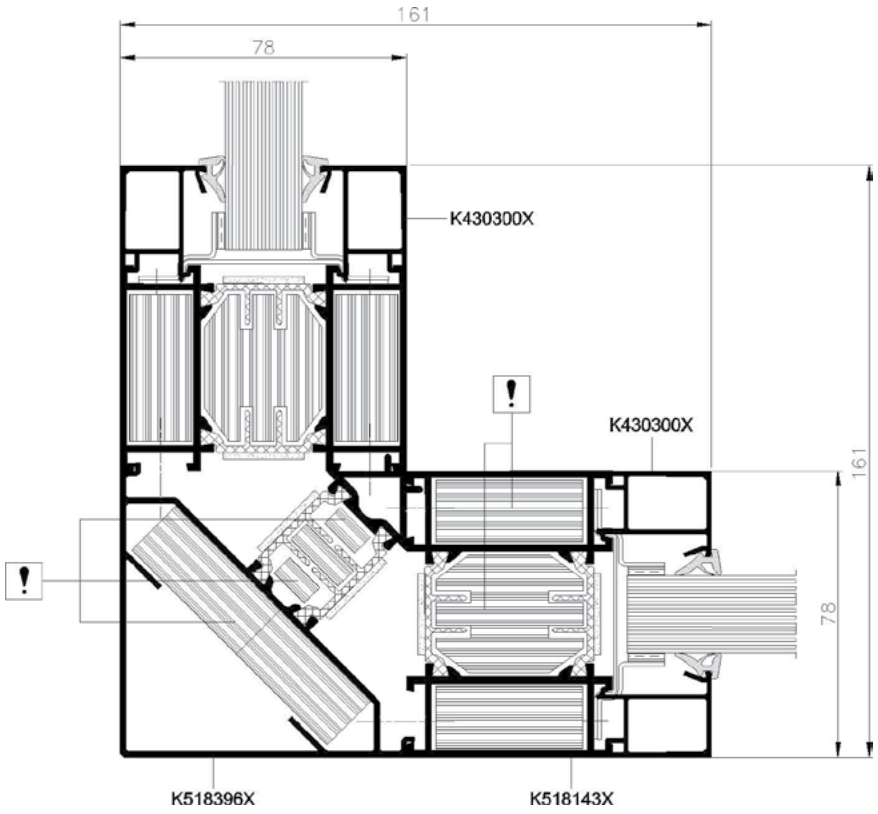
Bottom cross-section with threshold



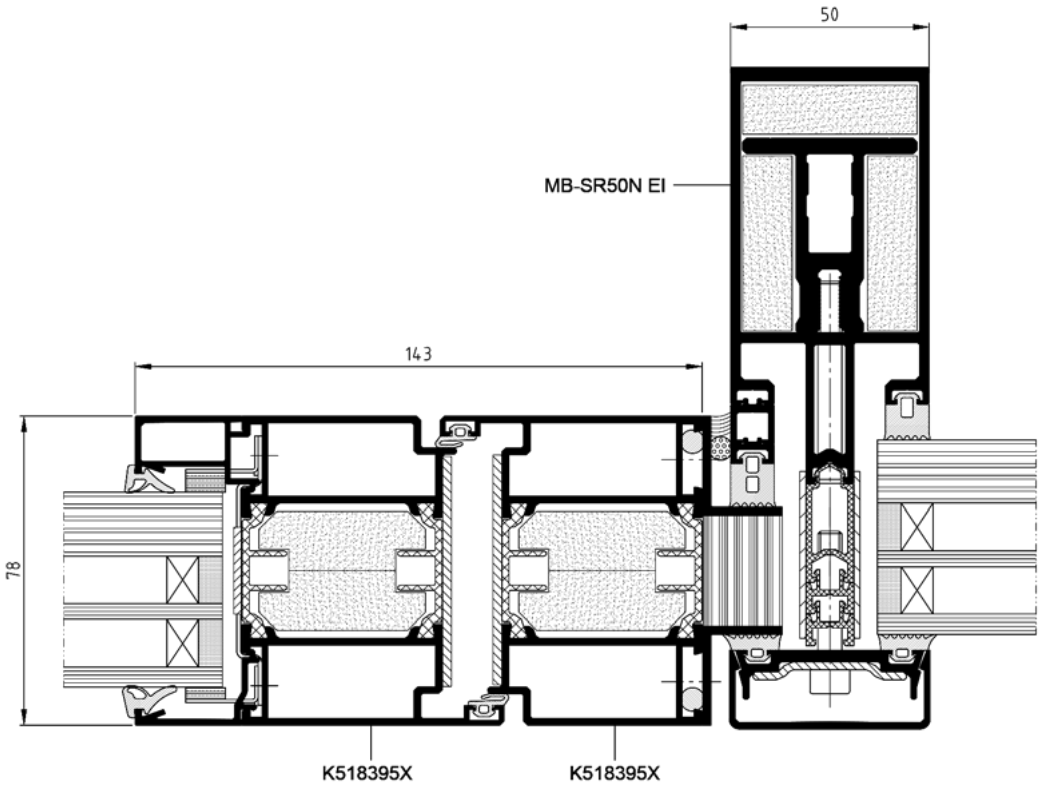
Angle joint of the fixed walls 135°

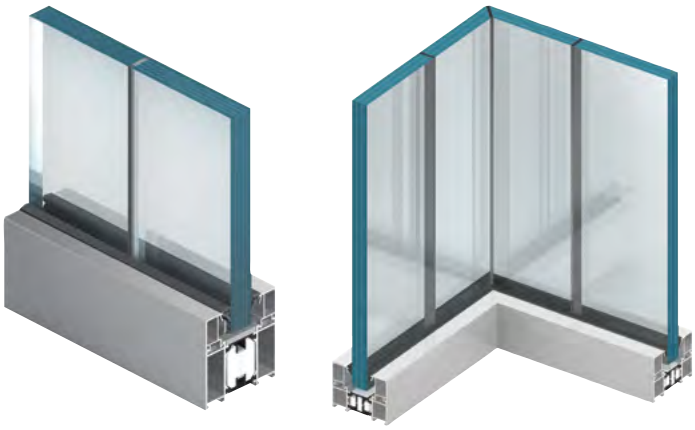


Angle joint of the fixed walls 90°



MB-78EI doors cross-section in the MB-SR50 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 intumescent 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.

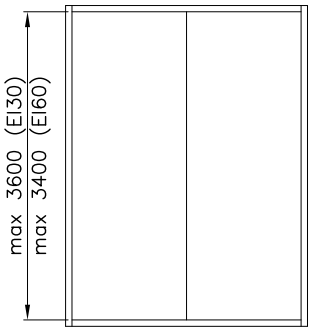
Silicone joined fire-rated glazed walls

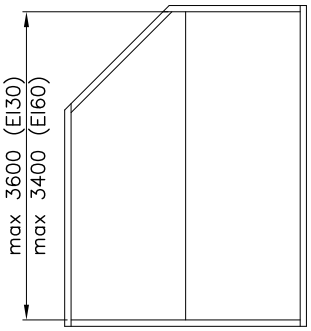
MB-78EI

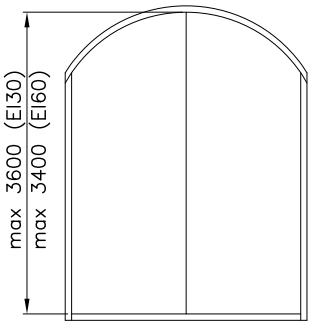
EI 30 **EI 60**

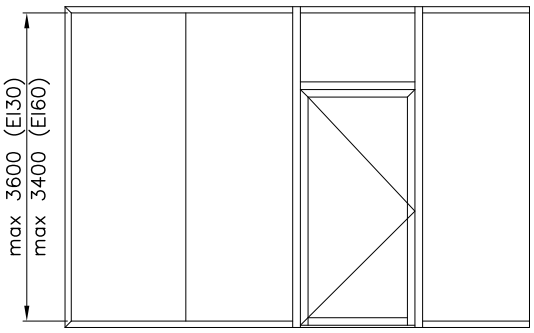
Aluprof offers also a version with profiles fitted in the floor, walls and ceiling. Hidden wall mount enhances this optical effect, while maintaining the full fire protection of the construction.

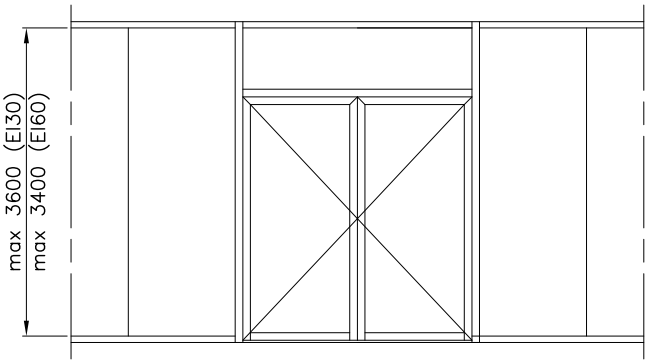
Silicone joined glazed wall MB-78EI - examples

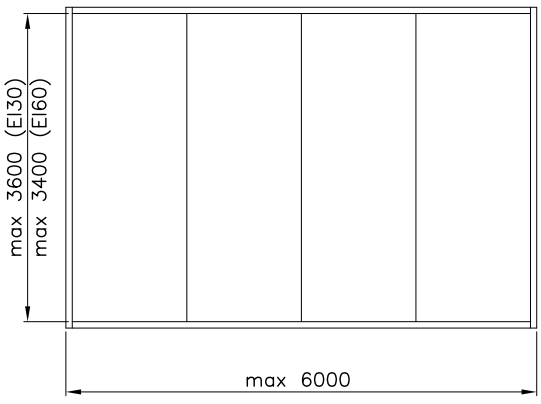


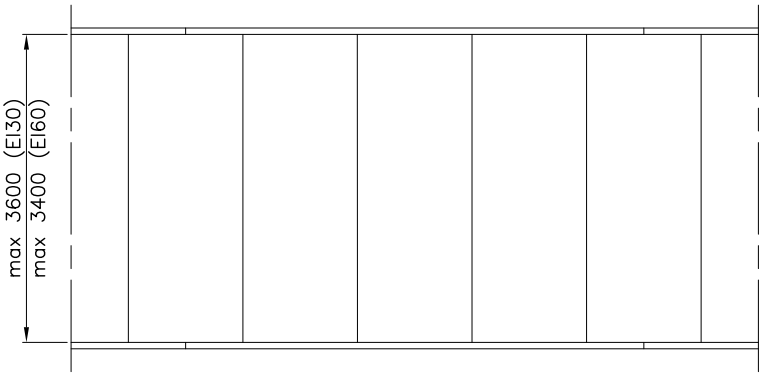






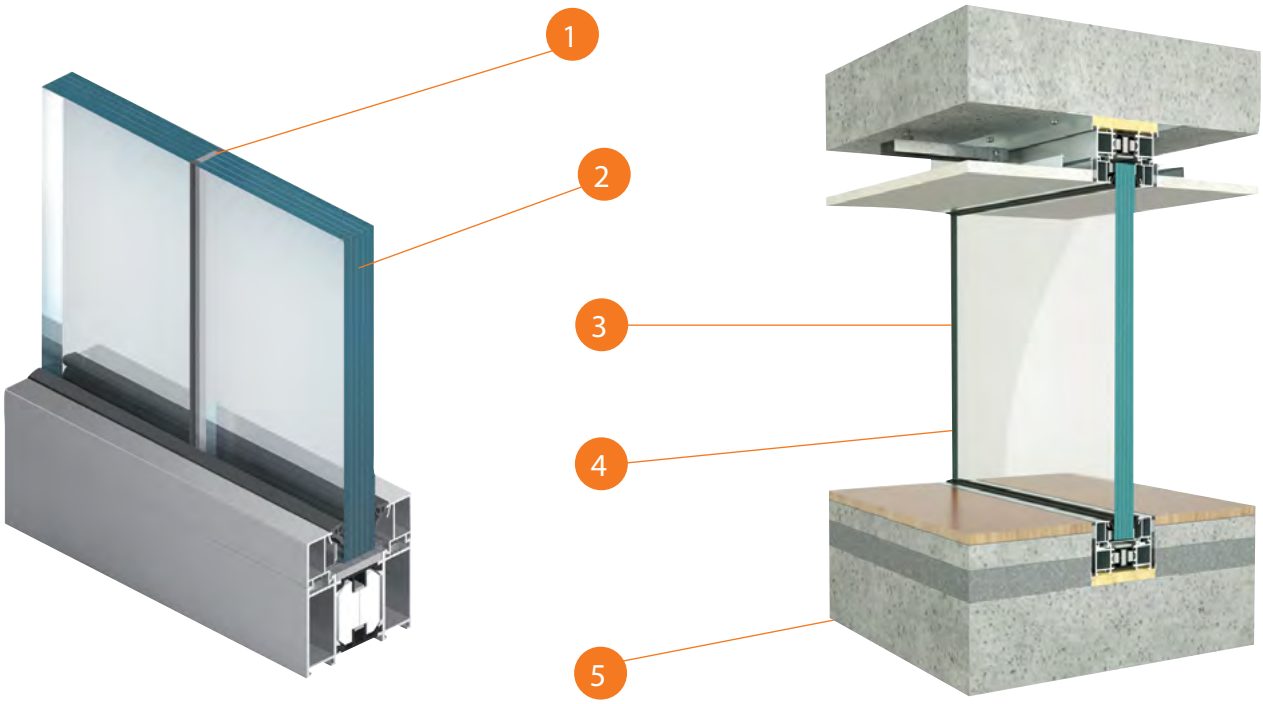




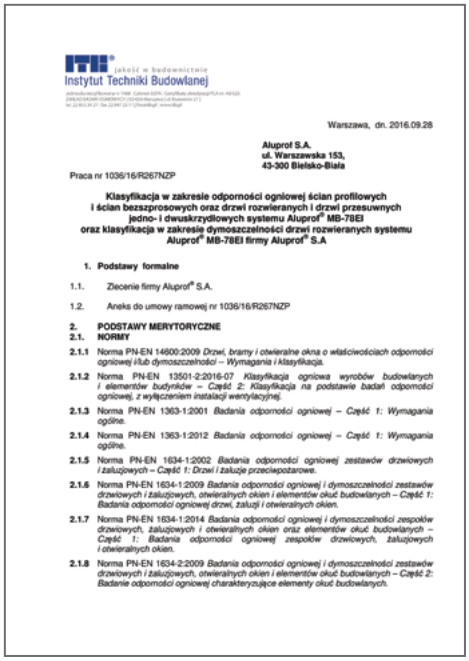


Silicone joined fire-rated glazed walls

MB-78EI



1. The gap between the modules is only 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 mm)
5. Solution available with profiles fitted in the floor, walls and ceiling



Instytut Techniki Budowlanej

Warszawa, dn. 2016.09.28

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

Praca nr 1036/16/R267NZP

Klasyfikacja w zakresie odporności ogniowej ścian profilowych i ścian bezszprosowych oraz drzwi rozwieranych i drzwi przesuwnych jedno- i dwuskrzydłowych systemu Aluprof® MB-78EI oraz klasyfikacja 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/R267NZP

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 klasyfikacja.*

2.1.2 Norma PN-EN 13501-2:2016-07 *Klasyfikacja ogniowa wyrobów budowlanych i elementów budynków – Część 2: Klasyfikacja na podstawie badań odporności ogniowej, z wyłączeniem instalacji wentylacyjnej.*

2.1.3 Norma PN-EN 1363-1:2001 *Badania odporności ogniowej – Część 1: Wymagania ogólne.*

2.1.4 Norma PN-EN 1363-1:2012 *Badania odporności ogniowej – Część 1: Wymagania ogólne.*

2.1.5 Norma PN-EN 1634-1:2002 *Badania odporności ogniowej zestawów drzwiowych i żaluzjowych – Część 1: Drzwi i żaluzje przeciwpożarowe.*

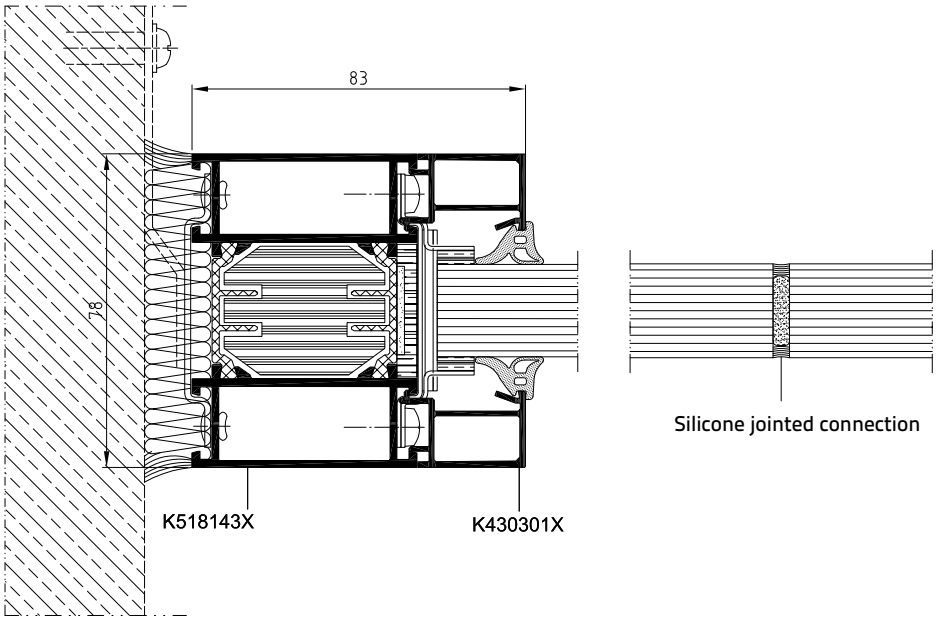
2.1.6 Norma PN-EN 1634-1:2009 *Badania odporności ogniowej i dymoszczelności zestawów drzwiowych i żaluzjowych, otwieralnych okien i elementów okuć budowlanych – Część 1: Badania odporności ogniowej drzwi, żaluzji i otwieralnych okien.*

2.1.7 Norma PN-EN 1634-1:2014 *Badania odporności ogniowej i dymoszczelności zespołów drzwiowych, żaluzjowych i otwieralnych okien oraz elementów okuć budowlanych – Część 1: Badania odporności ogniowej zespołów drzwiowych, żaluzjowych i otwieralnych okien.*

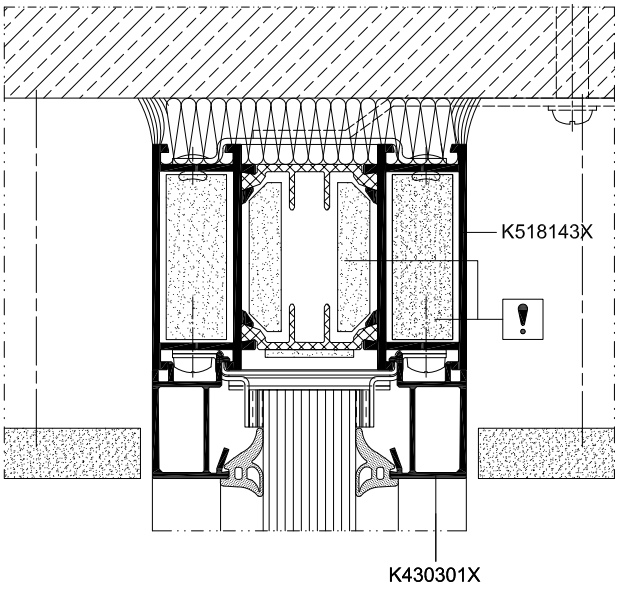
2.1.8 Norma PN-EN 1634-2:2009 *Badania odporności ogniowej i dymoszczelności zestawów drzwiowych i żaluzjowych, otwieralnych okien i elementów okuć budowlanych – Część 2: Badanie odporności ogniowej charakteryzujące elementy okuć budowlanych.*

Silicone joined glazed wall **MB-78EI** are covered by the classification ITB 1036/16/R267NZP

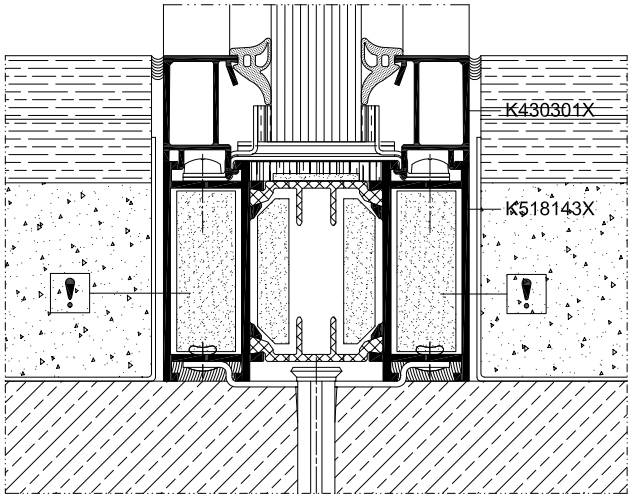
Silicone joined glazed wall MB-78EI, Horizontal view



Partition with a ceiling-integrated profile, section view

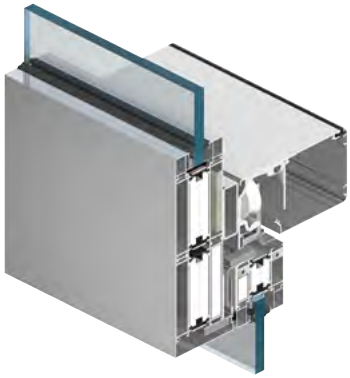


Partition with a floor-integrated profile, section view



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 2450 mm.
- width of a single door: up to 1100 mm.
- width of a double door: up to 2125 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

Instytut Techniki Budowlanej

Seria: APROBATY TECHNICZNE

APROBATA TECHNICZNA ITB
AT-15-6006/2016

Na podstawie rozporządzenia Ministra Infrastruktury z dnia 8 listopada 2004 r. w sprawie aprobat technicznych oraz jednostek organizacyjnych upoważnionych do ich wydawania (tekst jednolity: Dz. U. z 2014 r., poz. 1040), w wyniku postępowania aprobacyjnego 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

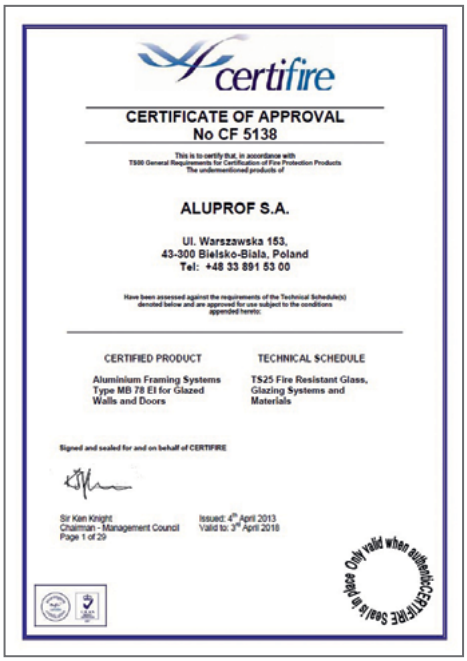
w zakresie i na zasadach określonych w Załączniku, który jest integralną częścią niniejszej Aprobaty Technicznej ITB.

Termin ważności:
29 grudnia 2021 r.

DYREKTOR
Instytut Techniki Budowlanej

Załącznik:
Postanowienia ogólne i techniczne

Warszawa, 29 grudnia 2016 r.



certifire

CERTIFICATE OF APPROVAL
No CF 5138

This is to certify that, in accordance with TS00 General Requirements for Certification of Fire Protection Products The undermentioned products of

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) denoted below and are approved for use subject to the conditions appended hereto:

CERTIFIED PRODUCT	TECHNICAL SCHEDULE
Aluminium Framing Systems Type MB 78 EI for Glazed Walls and Doors	TS25 Fire Resistant Glass, Glazing Systems and Materials

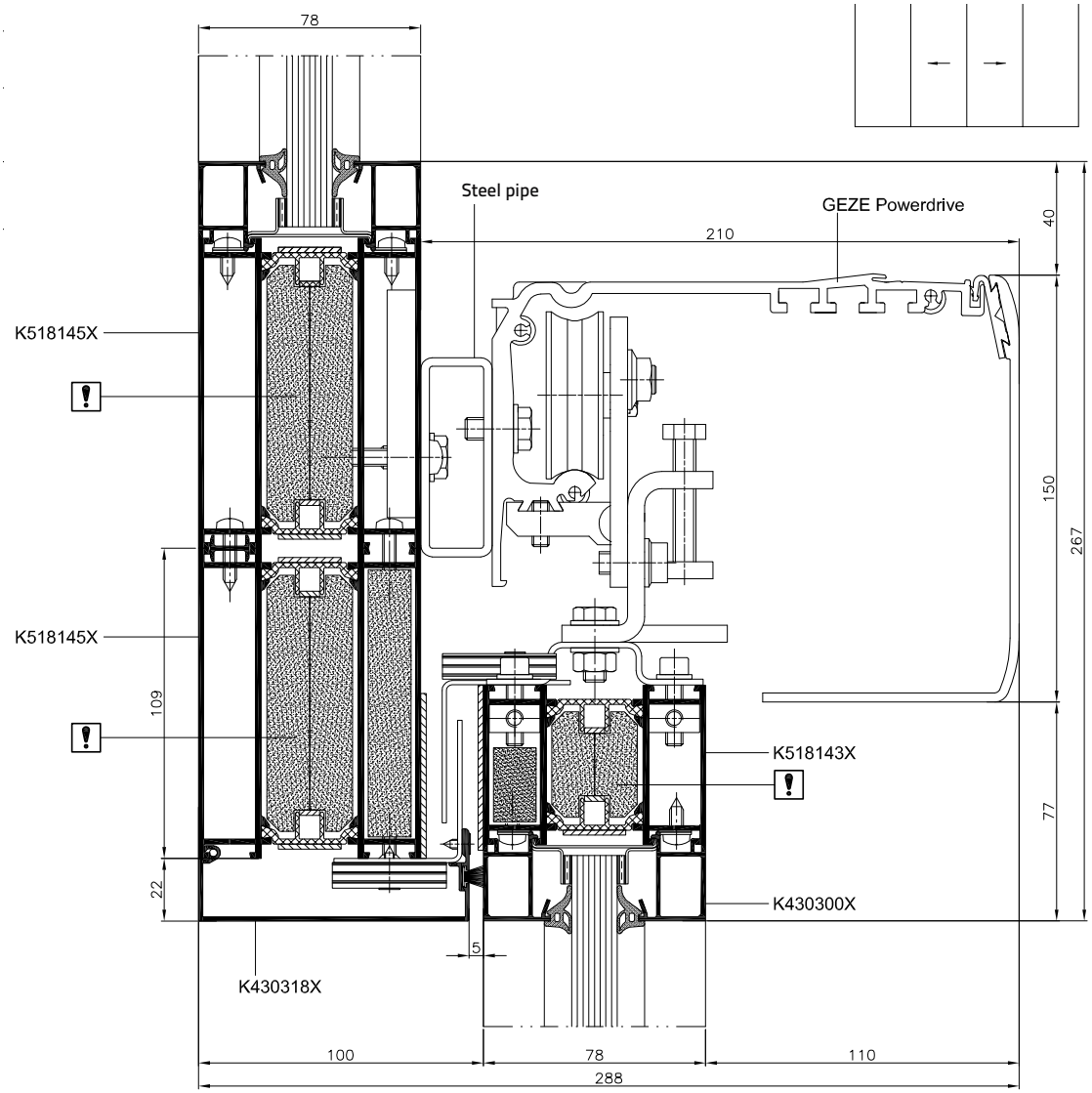
Signed and sealed for and on behalf of CERTIFIRE

Sir Ken Knight
Chairman - Management Council
Page 1 of 29

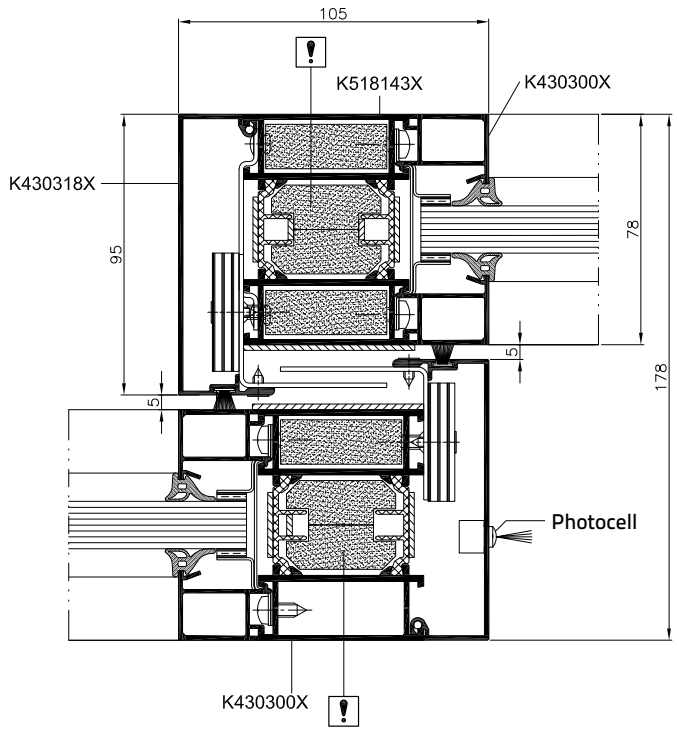
Issued: 4th April 2013
Valid to: 3rd April 2018

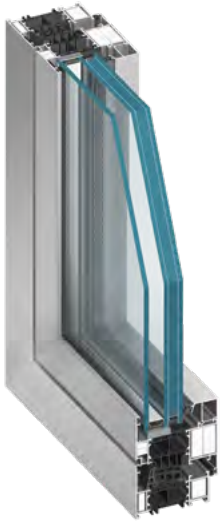
Only valid when authenticated CERTIFIRE Seal is in place

Upper sliding doors – cross-section



Lateral sliding doors – cross-section





Fire-rated windows

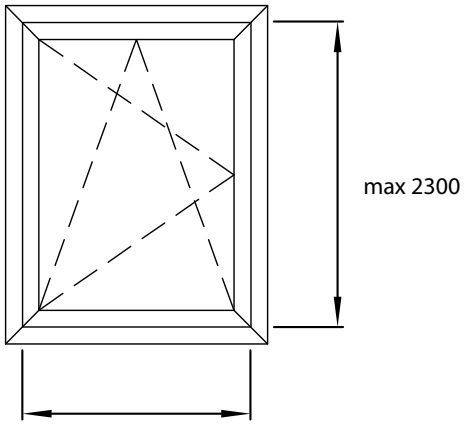
MB-86EI

EI 30

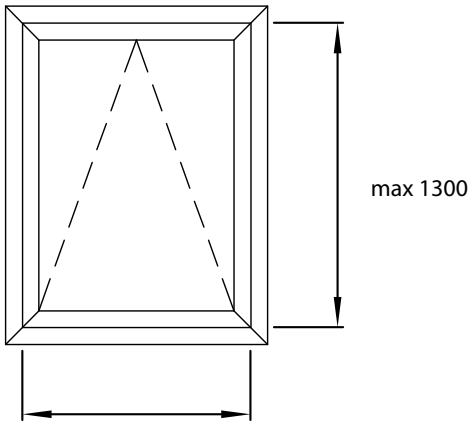
MB-86EI is used for fabrication of EI30 fire-rated openable windows to EN 13501-2+A1. MB-86EI is based on **MB-86** system, and has excellent thermal, sound reduction, water resistance and air leakage performances. The **MB-86EI** combines the advantages of a classic window system with the properties 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:

tilt & turn



bottom hung

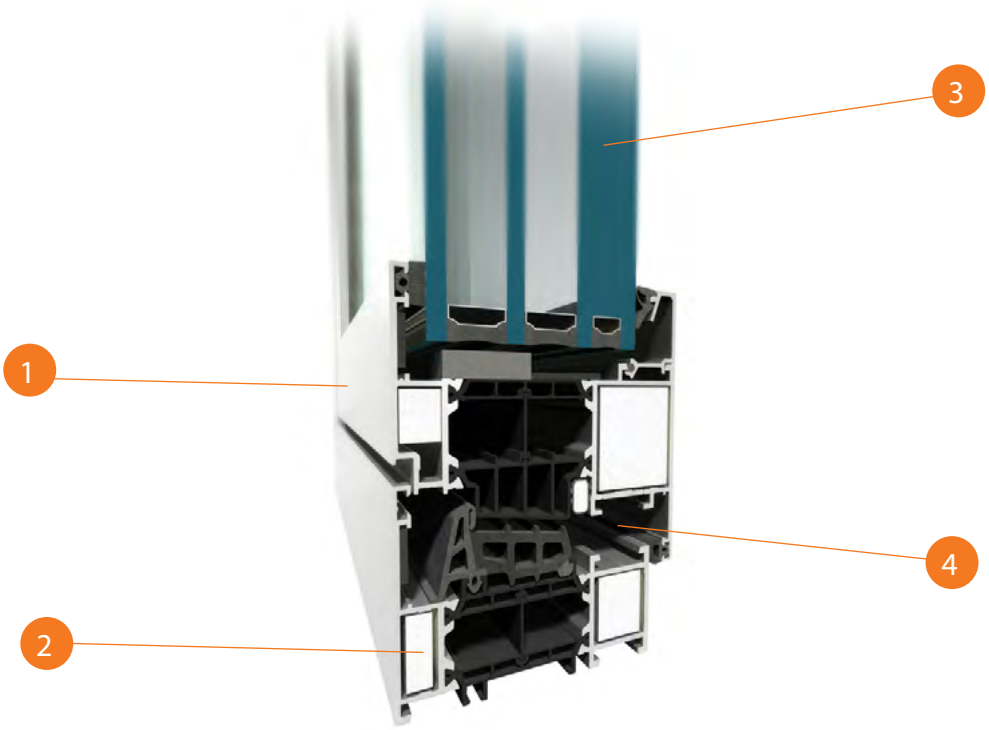


TECHNICAL SPECIFICATION	MB-86EI
Frame depth	77 mm
Casement depth	86 mm
Glazing thickness	frame: 13 to 61 mm, casement: 22 up to 70 mm
Max casement weight	130 kg
TECHNICAL PARAMETERS	**MB-86EI**
Air leakage	class 4, EN 12207
Water resistance	class E 1500, EN 12208
Wind resistance	class C5, EN 12210
Thermal insulation	U_f od 1,07 W/(m^{2}K), U_w from 0,86 W/(m^{2}K)*
Fire resistance rating	class EI30

* - for a 2000 x 1100 mm window with triple glazing unit U_g=0.5 W/(m^{2}K), 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

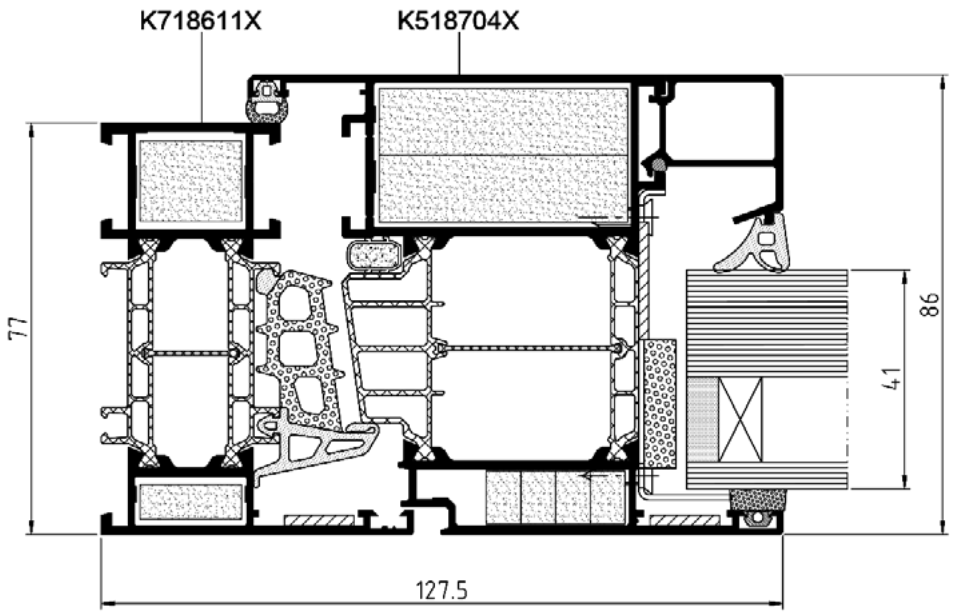
Instytut Techniki Budowlanej

KLASYFIKACJA
W ZAKRESIE ODPORNOŚCI OGNIOWEJ ZGODNIE Z PN-EN 13501-2:2016-07

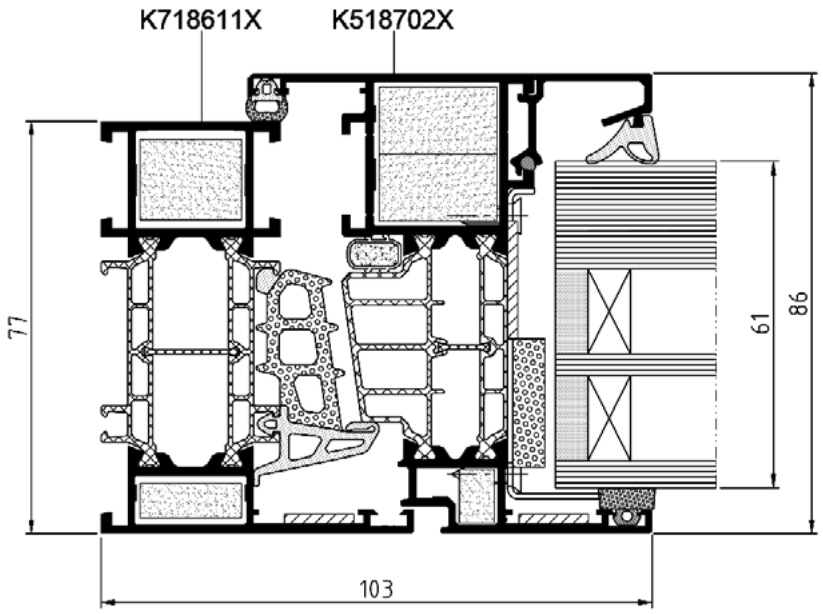
Zleceniodawca:	ALUPROF S. A. ul. Warszawska 153 43-300 Bielsko-Biała
Opracowana przez:	Zakład Badań Ogniowych Instytutu Techniki Budowlanej ul. Filtrowa 1 00-611 Warszawa
Nazwa wyrobu:	Okna aluminiowe, profilowe, jednorzędowe, jednoskrzydłowe, rozwierano – uchylne oraz uchylne systemu ALUPROF® MB-86EI EI30
Raport klasyfikacyjny nr:	1036/17/R315NZP
Wydanie numer:	1
Data wydania:	2017.10.16

Fire-rated windows are covered by the classification ITB No. 1036/17/R315NZP

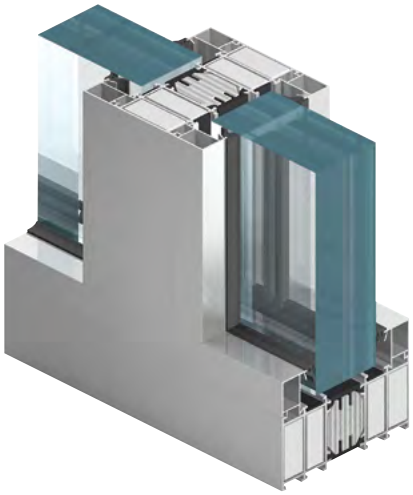
Window EI30 - cross-section



Window EI30 - cross-section



MB-118EI



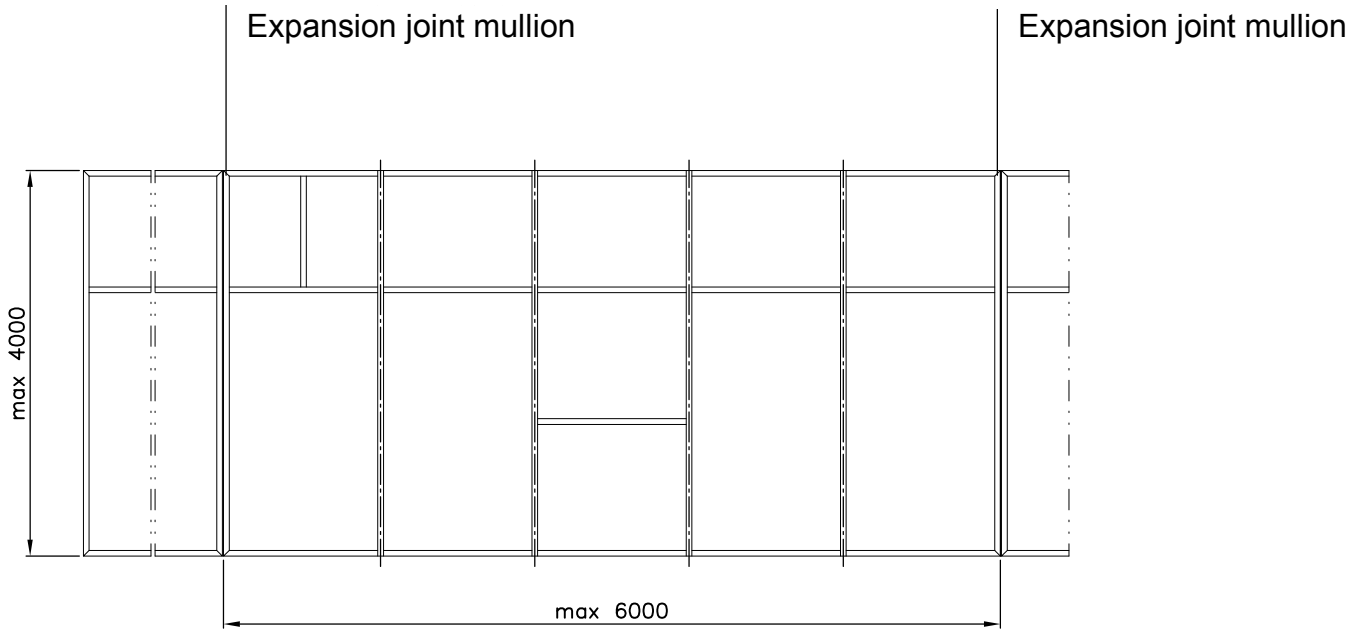
EI 120

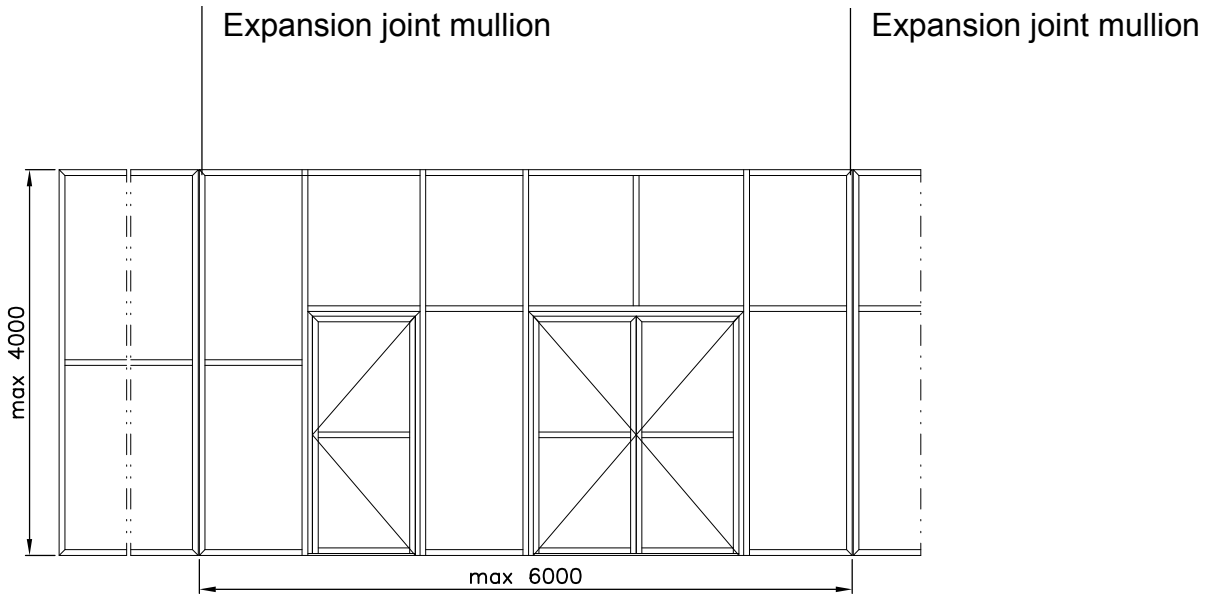
The **MB-118 EI** fire rated walls are used to make fire partitions with fire resistance class of EI 120. The system is classified as non-fire spreading (NRO). It's design & construction is such that, it provides a technical connection with the **MB-78EI** door, which means a number of common components (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 glazing units, panels or other similar glazing substrates of a thickness 31-35 mm or 48- 84mm.

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 the division of these partitions is the possibility to install the **MB-78EI** doors.

Max. dimensions of the walls

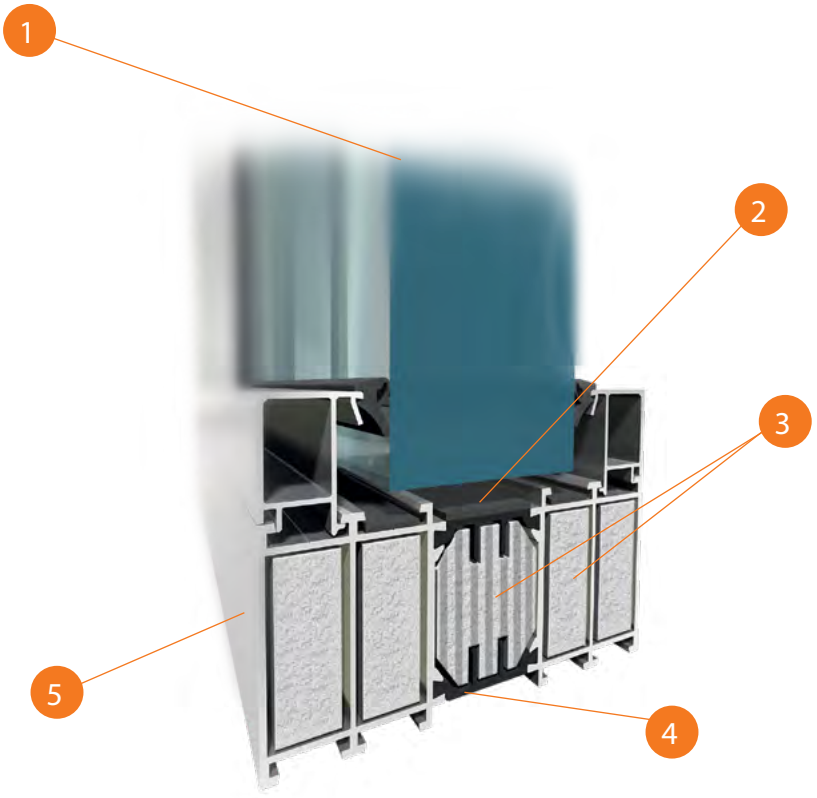




TECHNICAL SPECIFICATION		TECHNICAL PARAMETERS	
Depth of wall frame	118 mm	Air Permeability	Class A4, PN-EN 12152:2004
Glazing range	31 - 84 mm	Watertightness	Class RE 750, PN-EN 12154:2004
		Fire resistance	Class EI 120, EN 13501-2

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

Instytut Techniki Budowlanej

Series: TECHNICAL APPROVALS

ITB TECHNICAL APPROVAL
AT-15-9186/2013

Official English language translation – the original version is in Polish language

On the basis of the ordinance of the Minister of Infrastructure of 6th November 2004 on technical approvals and the bodies authorized to issue technical approvals (Dz. U. No. 249/2004, pos. 2497), as a result of approval procedure carried out at the Building Research Institute in Warsaw on the request of the company:

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

the fitness for use in construction has been proved for:

The kit of products for internal and external fire walls of the ALUPROF® MB-118EI system

within the scope and in conformity with the rules as specified in Annex, being an integral part of this Technical Approval.

Valid until:
19th September 2018

DIRECTOR
of Building Research Institute

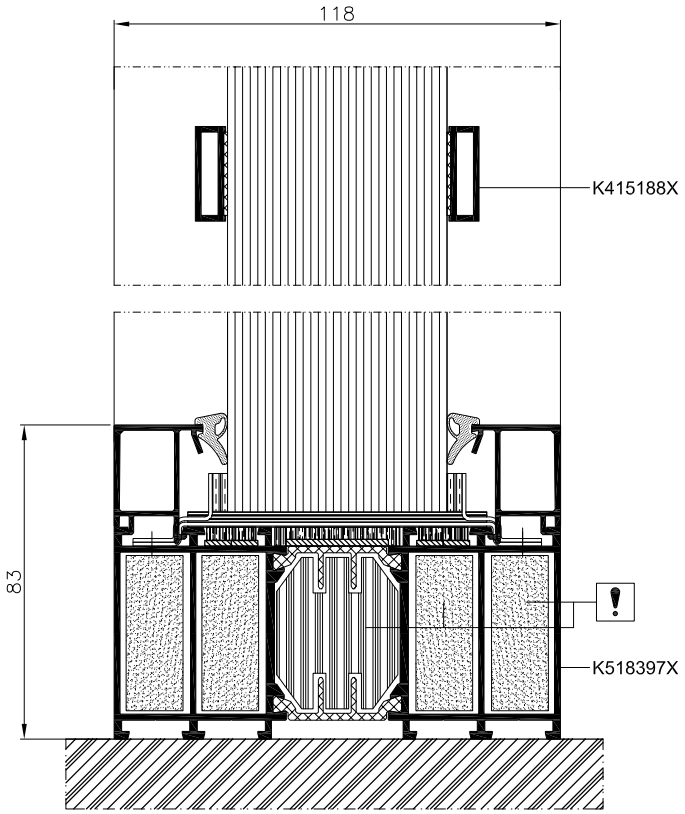
Annex:
General and Technical Provisions

Warsaw, 19th September 2013

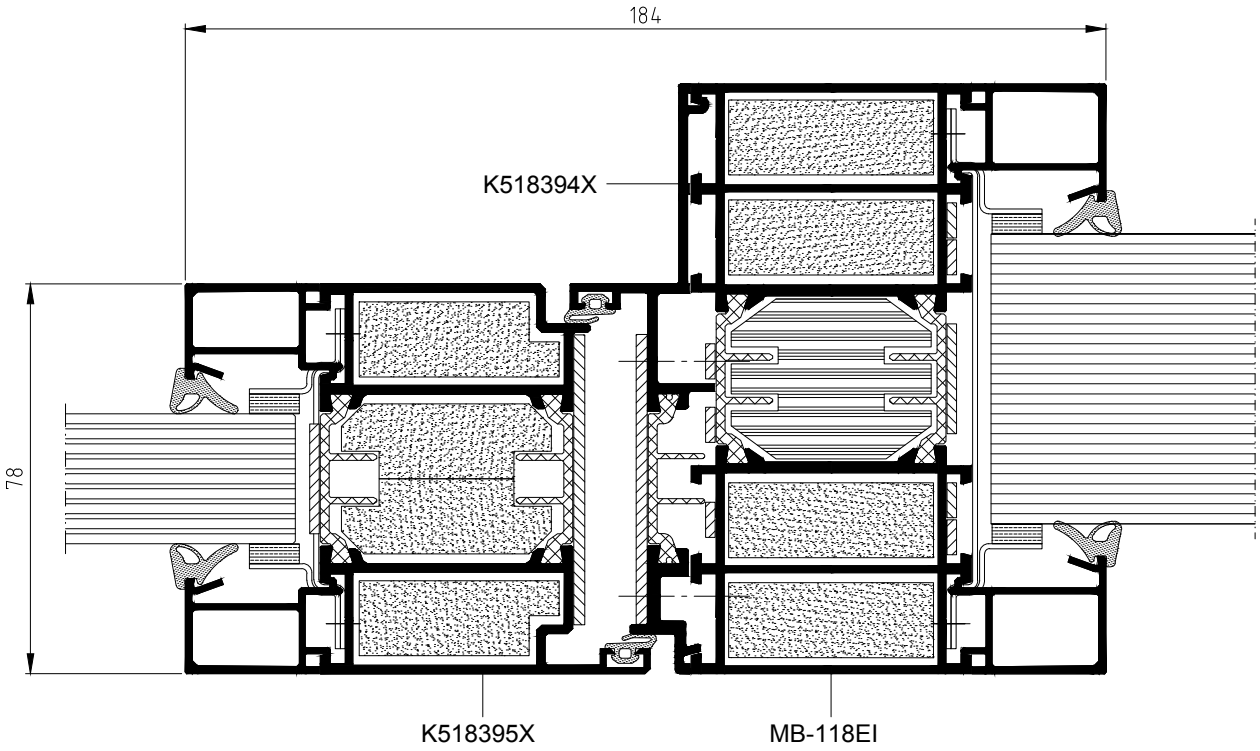
ITB Technical Approval AT-15-9186/2013 consists of 36 pages. The text of this document may only be copied in whole. Partial reproduction or dissemination of Technical Approval text shall require a written consent of Building Research Institute.

As regards the internal and external walls the **MB-118EI** system holds an ITB's Technical Approval No. AT-15-9186/2013

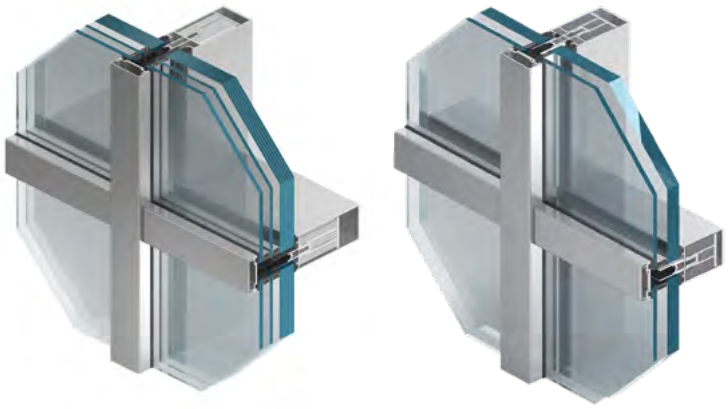
Max. dimensions of the walls



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



MB-SR50N EI
MB-SR50 EI



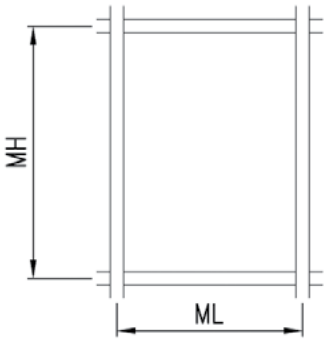
EI 30 **EI 60**

The **MB-SR50 EI** and **MB-SR50 EI** curtain wall fire rated systems have been developed to provide a light-weight curtain & fire resistant wall, of classes EI 15, EI 30, EI45, EI 60 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-SR50** and **MB-SR50N** façade systems: mullions of a depth of between 85 and 225 mm and transoms of a depth of 65+ 189,5 mm. Both systems are linked technologically and functionally, the main difference between them lies in the shape and depth of the profiles: rounded profiles with a radius of 2.5 mm characteristic of the **MB-SR50** are replaced by the "sharp edge" in the **MB-SR50N** system. This affects substantially the aesthetics of the structure – the **MB-SR50N** system design is such that, like size transoms & mullions will provide a flush internal finish of the "box aspect" of the profiles, creating a desirable, unified grid appearance. This allows the glazing building to be a unified-looking grid.

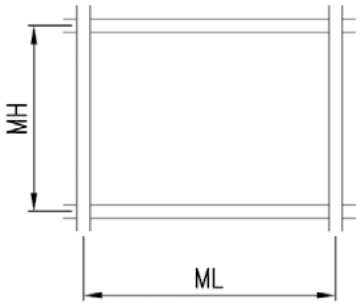
The design of the fire rated curtain wall system allows the use of angled connections to ± 7.5° per side, angled connections 90° or 135° (internal or external) and building façades tilted from the vertical at an angle of ± 15°. It is also possible to install the **MB-78EI** fire doors while maintaining 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

kg - 300 kg



MHmax=1500 mm
MLmax=2400 mm

kg - 300 kg

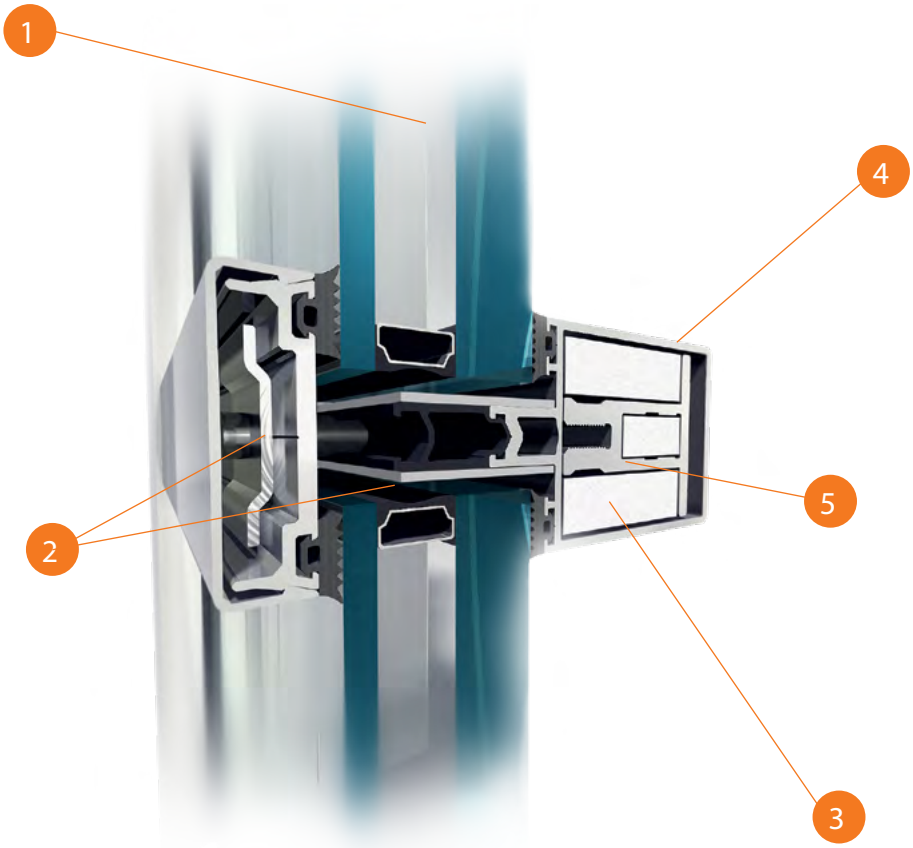
kg - max. infill weight

TECHNICAL SPECIFICATION	MB-SR50 EI	MB-SR50N EI
Mullions depth	85 – 185 mm	85 – 225 mm
Transoms depth	65 – 145 mm	69,5 – 189,5 mm
Inertia mullions (coeff. range I_x)	88,47 – 725,81 cm^4	81,34 – 1222,14 cm^4
Inertia transoms (coeff. range I_z)	42,02 – 263,48 cm^4	87,34 – 629,54 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 15, EI 30, EI45, EI 60, EN 13501-2	
Thermal insulation (coeff. U_f)	from 1.8 W/(m^2K)	

Curtain wall fire rated systems

MB-SR50N EI

MB-SR50 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 15 – EI 60
4. Mullion and transom supporting structure gives the possibility to build vertical facades, inclined from the vertical position by an angle of ± 15° and glazed roofs
5. The inner core aluminium profile insert, provides the necessary integrity of the construction in the event of a fire

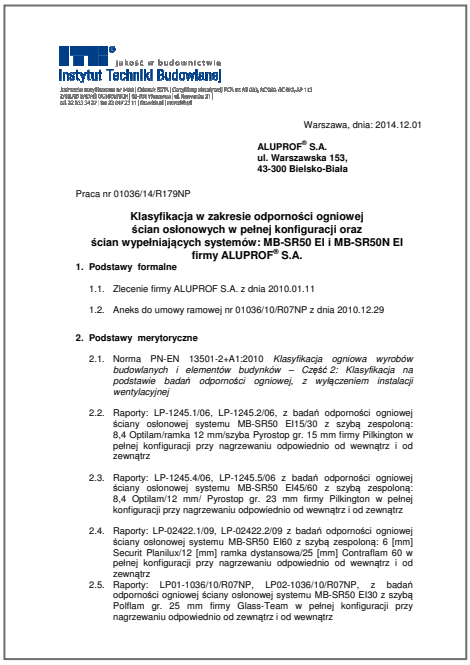
The view of the fire resistant façade does not differ from the basic system. In order to gain fire resistance, mullions and transoms are fitted with special fireproof inserts. These inserts consist of an aluminium profile serving as a reinforcement element, clad round with fire-proof board.

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 design of the fire resistant curtain wall system allows the use of angled joinings up to ± 7.5° per site and building façades deflected from the vertical by an angle of ± 15°, it is also possible to mount the fire resistant doors of the **MB-78EI** system while maintaining the fire resistance of the whole structure within EI 30 or EI 60 classes

The **MB-SR50EI** and **MB-SR50N EI** systems holds a certificate CERTIFIRE delivered by Warrington Certification Ltd No. CF 5139



Instytut Techniki Budowlanej

Warszawa, dnia: 2014.12.01

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

Praca nr 01036/14/R179NP

Klasyfikacja w zakresie odporności ogniowej ścian osłonowych w pełnej konfiguracji oraz ścian wypełniających systemów: MB-SR50 EI i MB-SR50N EI firmy ALUPROF® S.A.

1. Podstawy formalne

1.1. Zlecenie firmy ALUPROF S.A. z dnia 2010.01.11

1.2. Aneks do umowy ramowej nr 01036/10/R07NP z dnia 2010.12.29

2. Podstawy merytoryczne

2.1. Norma PN-EN 13501-2+A1:2010 *Klasyfikacja ogniowa wyrobów budowlanych i elementów budynków – Część 2: Klasyfikacja na podstawie badań odporności ogniowej, z wyłączeniem instalacji wentylacyjnej*

2.2. Raporty: LP-1245.1/06, LP-1245.2/06, z badań odporności ogniowej ściany osłonowej systemu MB-SR50 EI15/30 z szyba zespoloną: 8,4 Optilam/ramka 12 mm/szyba Pyrostop gr. 15 mm firmy Pilkington w pełnej konfiguracji przy nagrzewaniu odpowiednio od wewnątrz i od zewnątrz

2.3. Raporty: LP-1245.4/06, LP-1245.5/06 z badań odporności ogniowej ściany osłonowej systemu MB-SR50 EI45/60 z szybą zespoloną: 8,4 Optilam/12 mm/ Pyrostop gr. 23 mm firmy Pilkington w pełnej konfiguracji przy nagrzewaniu odpowiednio od wewnątrz i od zewnątrz

2.4. Raporty: LP-02422.1/09, LP-02422.2/09 z badań odporności ogniowej ściany osłonowej systemu MB-SR50 EI60 z szybą zespoloną: 6 [mm] Securit Planilux/12 [mm] ramka dystansowa/25 [mm] Contraflam 60 w pełnej konfiguracji przy nagrzewaniu odpowiednio od wewnątrz i od zewnątrz

2.5. Raporty: LP01-1036/10/R07NP, LP02-1036/10/R07NP, z badań odporności ogniowej ściany osłonowej systemu MB-SR50 EI30 z szybą Polflam gr. 25 mm firmy Glass-Team w pełnej konfiguracji przy nagrzewaniu odpowiednio od zewnątrz i od wewnątrz

certifire

CERTIFICATE OF APPROVAL
No CF 5139

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

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) denoted below and are approved for use subject to the conditions appended hereto:

CERTIFIED PRODUCT	TECHNICAL SCHEDULE
Aluminium Curtain Walling Systems Type: MB® SR50 EI MB® SR50N EI MB® SR50N EI EFEKT for Glazed Curtain Walls, Screens and Roof Glazing including internal 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

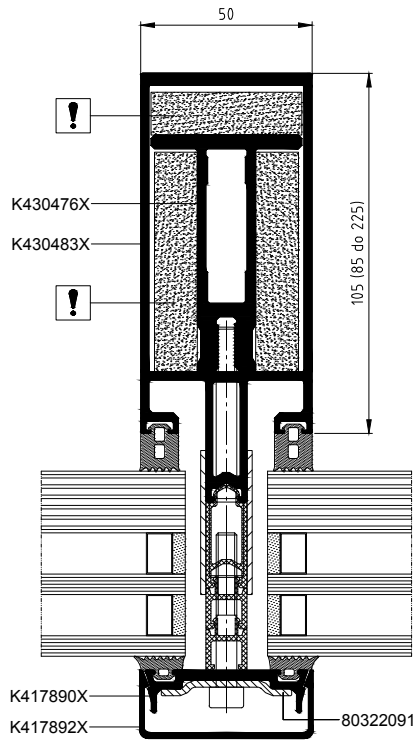
Signed and sealed for and on behalf of CERTIFIRE

Sir Ken Knight
Chairman - Management Council
Page 1 of 29

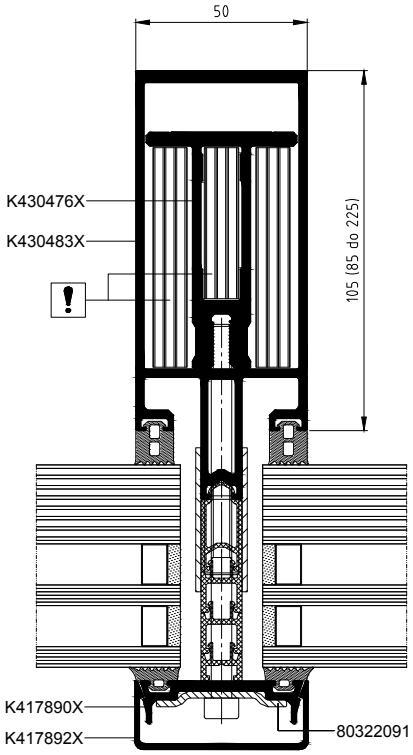
Issued: 15th January 2014
Valid to: 14th January 2019

warrington certifire certification

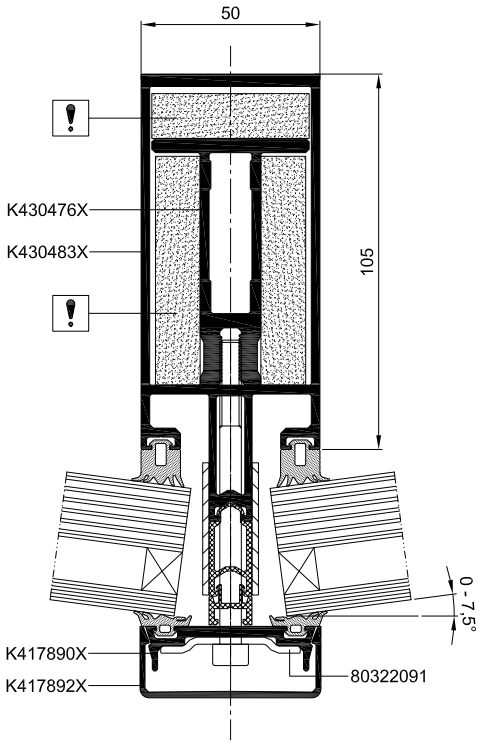
Mullion cross-section EI 15, EI 30



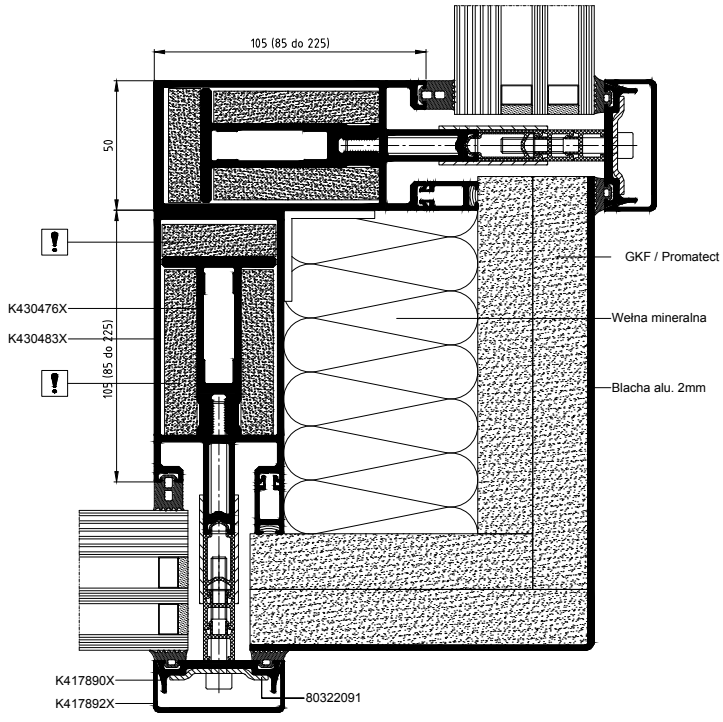
Mullion cross-section EI 45, EI 60



Mullion cross-section (-7.5º) – 7.5º. EI 15, EI 30

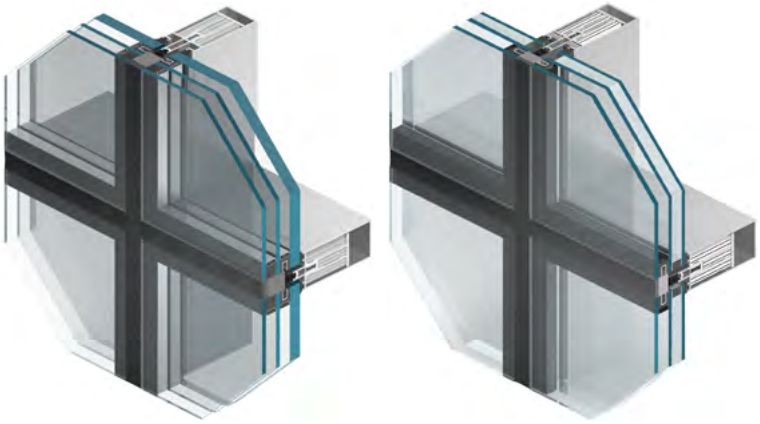


Mullion cross-section 90º EI 15, EI 30



Façade system

MB-SR50N EI EFEKT



EI 30 **EI 60**

MB-SR50 EI EFEKT system is designed for fabrication of fire-rated, EI15 EI60 infill curtain walls. What distinguishes this product, is the external appearance of the façade, which is free from any visible aluminium elements. In its 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 ±15°.

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).

certifire

CERTIFICATE OF APPROVAL
No CF 5139

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

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) denoted below and are approved for use subject to the conditions appended hereto:

CERTIFIED PRODUCT	TECHNICAL SCHEDULE
Aluminium Curtain Walling Systems Type: MB® SR50 EI MB® SR50N EI MB® SR50N EI EFEKT for Glazed Curtain Walls, Screens and Roof Glazing including internal 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

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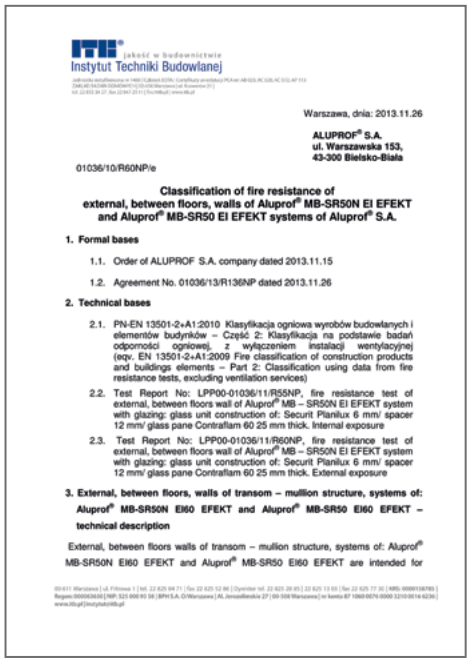
Registered office: Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL, UK. Registered in Scotland, No. SC 76426



ITB jakość w budownictwie
Instytut Techniki Budowlanej

Warszawa, dnia: 2013.11.26

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

01036/10/R60NP/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. PN-EN 13501-2+A1:2010 Klasyfikacja ogniowa wyrobów budowlanych i elementów budynków – Część 2: Klasyfikacja na podstawie badań odporności ogniowej, z wyłączeniem instalacji wentylacyjnej (eqv. EN 13501-2+A1:2009 Fire classification of construction products and buildings elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services)

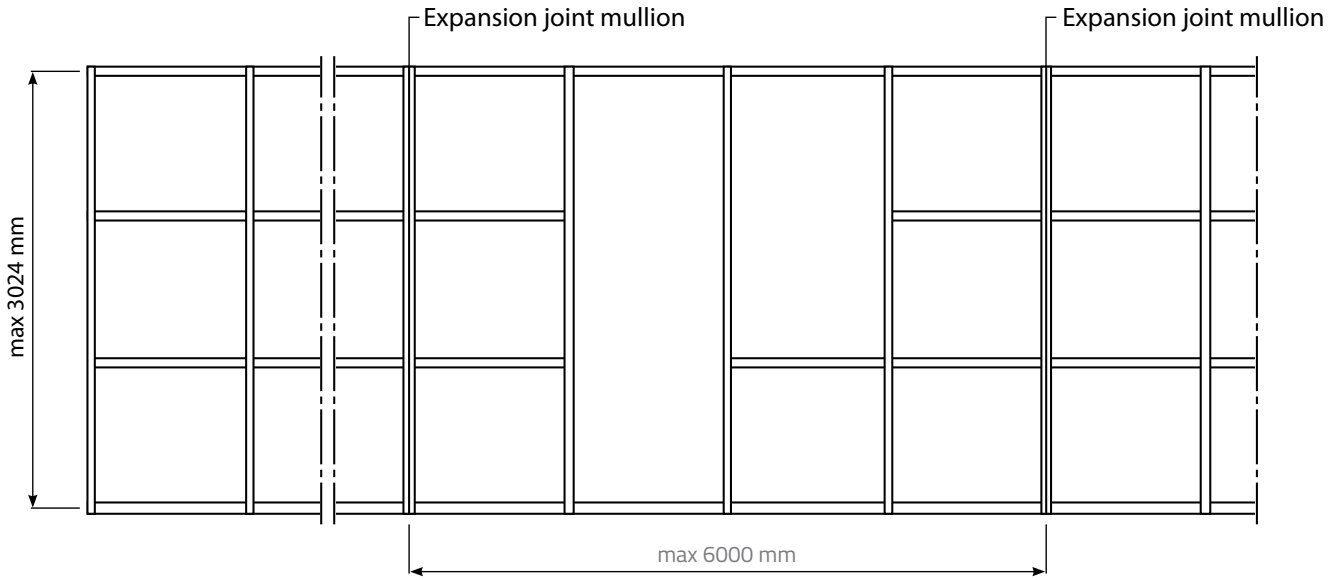
2.2. Test Report No: LPP00-01036/11/R55NP, fire resistance test of external, between floors wall of Aluprof® MB – SR50N EI EFEKT system with glazing: glass unit construction of: Securit Planilux 6 mm/ spacer 12 mm/ glass pane Contraflam 60 25 mm thick. Internal exposure

2.3. Test Report No: LPP00-01036/11/R60NP, fire resistance test of external, between floors wall of Aluprof® MB – SR50N EI EFEKT system with glazing: glass unit construction of: Securit Planilux 6 mm/ spacer 12 mm/ glass pane Contraflam 60 25 mm thick. External exposure

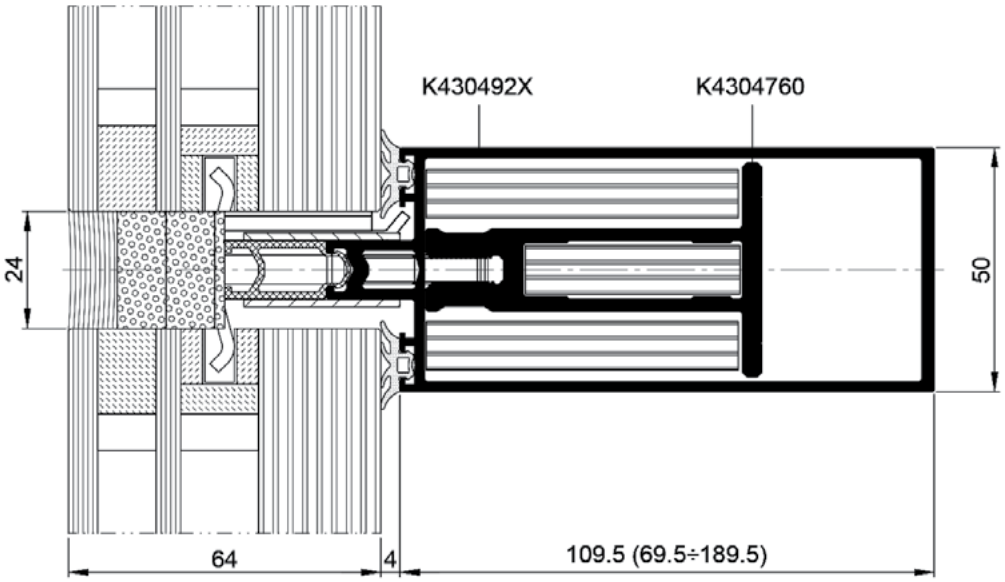
3. External, between floors, walls of transom – mullion structure, systems of: Aluprof® MB-SR50N EI60 EFEKT and Aluprof® MB-SR50 EI60 EFEKT – technical description

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

Max. dimensions of the walls

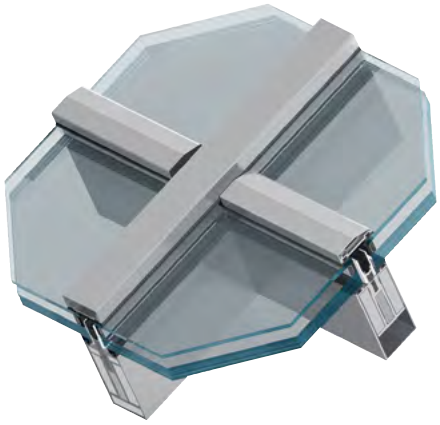


Transom cross-section



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**

Based on the **MB-SR50 EI** and **MB-SR50N EI** façade systems, it is possible to perform **roof glazing** with fire resistance class RE20, RE30, REI20, REI30 according to PN-EN 13501-2 + A1: 2010.

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 36 to 52 mm. The maximum dimensions of the glass are 2100 mm x 1100 mm, however, changing these dimensions is acceptable, providing there is no exceeding of the maximum surface area of the glass. 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 **MB-SR50 EI** and EI **MB-SR50N** vertical façades.

Instytut Techniki Budowlanej

Seria: APROBATY TECHNICZNE

APROBATA TECHNICZNA ITB
AT-15-8158/2013

Na podstawie rozporządzenia Ministra Infrastruktury z dnia 8 listopada 2004 r. w sprawie aprobat technicznych oraz jednostek organizacyjnych upoważnionych do ich wydawania (Dz. U. Nr 249 z 2004 r., poz. 2497), w wyniku postępowania aprobacyjnego 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

Zestaw wyrobów do wykonywania przeszklonych przekryć dachowych systemów ALUPROF® MB-SR50, ALUPROF® MB-SR50N, ALUPROF® MB-SR50 HI, ALUPROF® MB-SR50N HI+, ALUPROF® MB-SR50 PL, ALUPROF® MB-SR50N PL, ALUPROF® MB-SR50 EFEKT, ALUPROF® MB-SR50N EFEKT, ALUPROF® MB-SR50 EI, ALUPROF® MB-SR50N EI i ALUPROF® MB-SR60N

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

Termin ważności:
23 sierpnia 2018 r.

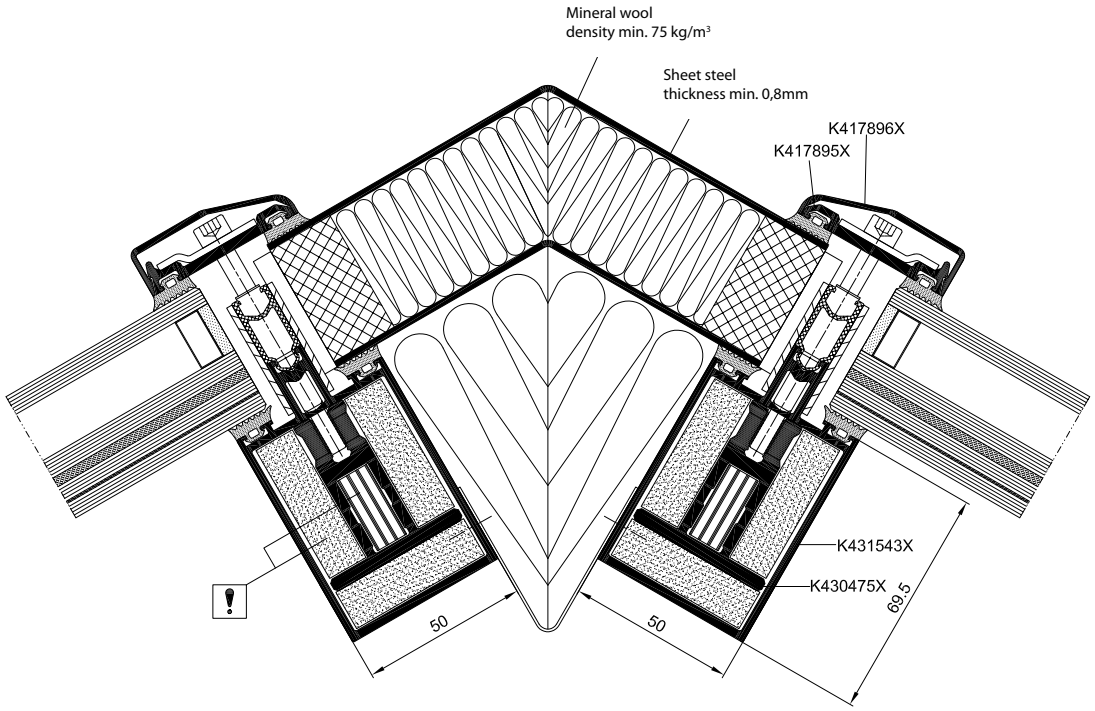
DYREKTOR
Instytutu Techniki Budowlanej
Jan Bobrowicz

Załącznik:
Postanowienia ogólne i techniczne

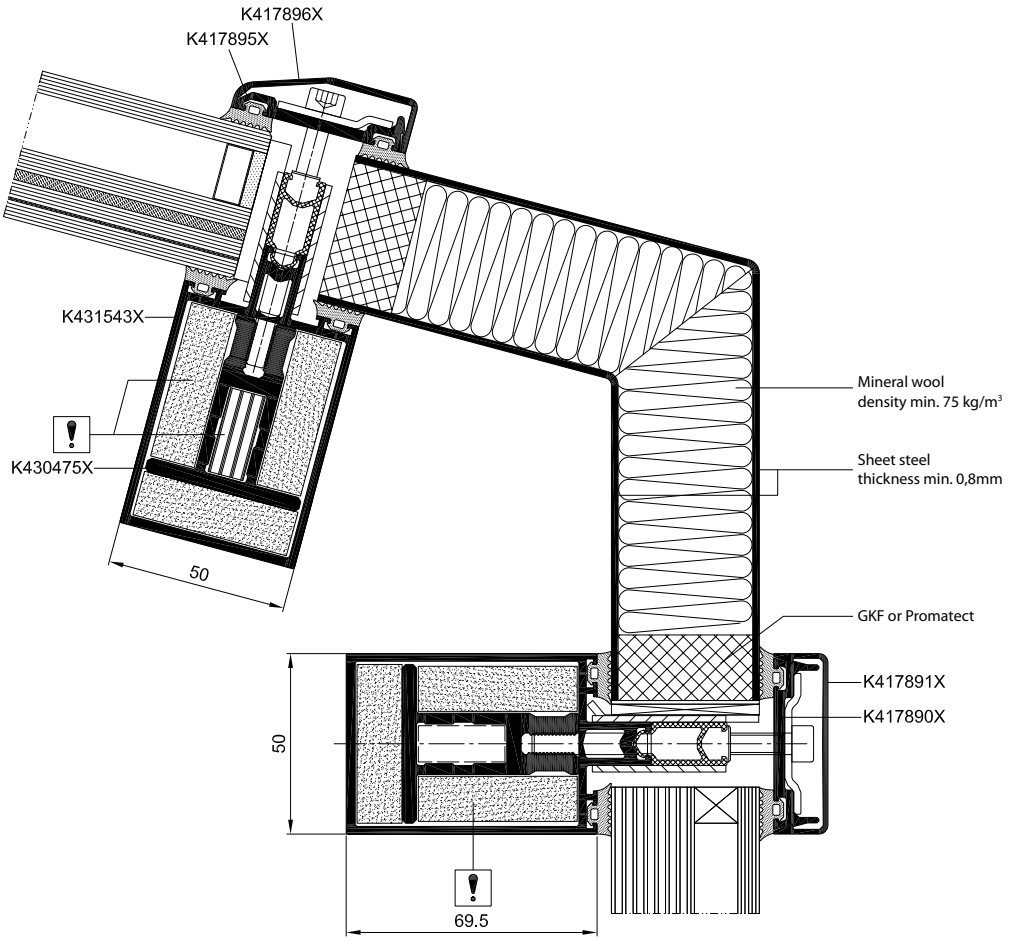
Warszawa, 23 sierpnia 2013 r.

The **MB-SR50 EI** and EI **MB-SR50N** fire roofs are subject to the ITB's Technical Approval No. AT-15-8158/2013

Cross section of the fire roof ridge



Cross section of the roof combined with a fire façade



MB-45D

S_a S_{200}

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 S_{200} according to the EN 13501-2:2016 standard, (S_a, S_m according to the EN 13501-2+A1:2010 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.

Instytut Techniki Budowlanej

Seria: APROBATY TECHNICZNE

APROBATA TECHNICZNA ITB
AT-15-5163/2016

Na podstawie rozporządzenia Ministra Infrastruktury z dnia 8 listopada 2004 r. w sprawie aprobat technicznych oraz jednostek organizacyjnych upoważnionych do ich wydawania (tekst jednolity: Dz. U. z 2014 r., poz. 1040), w wyniku postępowania aprobacyjnego 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 dymoszczelne
systemu ALUPROF® MB-45D

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

Termin ważności:
29 grudnia 2021 r.

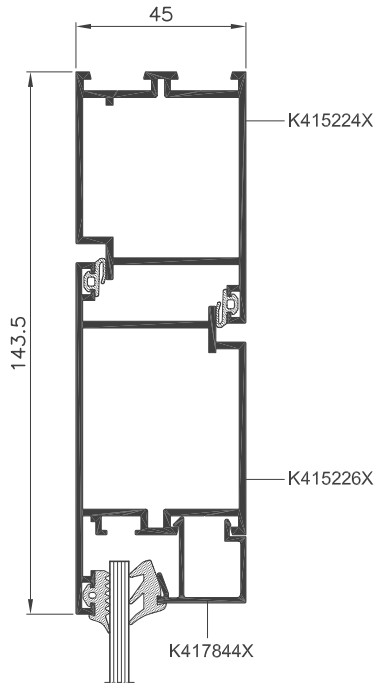
DYREKTOR
Instytutu Techniki Budowlanej

Załącznik:
Postanowienia ogólne i techniczne

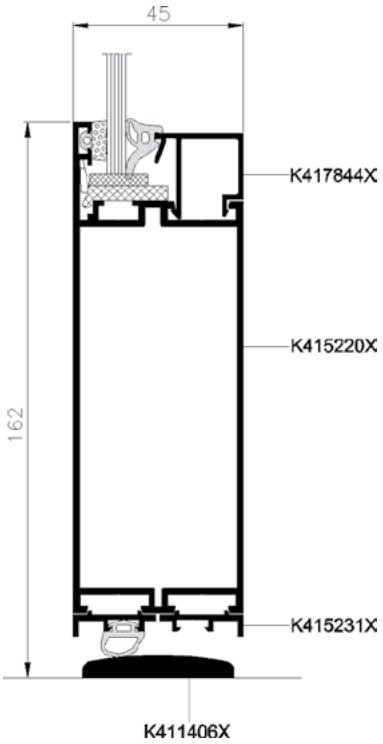
Warszawa, 29 grudnia 2016 r.

The **MB-45D** doors are subject to the Technical Approval No. AT-15-5163/2016 by the ITB.

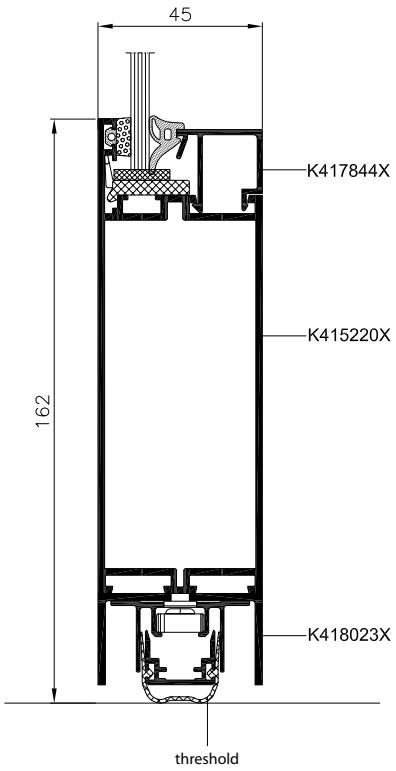
Door frame and door leaf – cross-section



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)
Door frame width	66,5 mm	Max. leaf door weight	120 kg
Door leaf width	72 mm		

Smoke exhaust windows

Maximum window size up to 4 m²

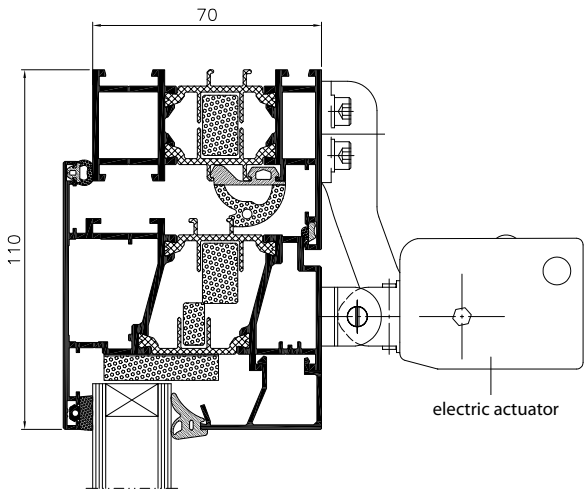
Smoke exhaust windows play a particular role in ensuring safety and comfort for the people staying in the building. When properly selected, they are the elements of gravity ventilation, and when necessary they can help to quickly get rid of smoke & toxic vapours which can be hazardous to health or worse.

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-SR50N RW, 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

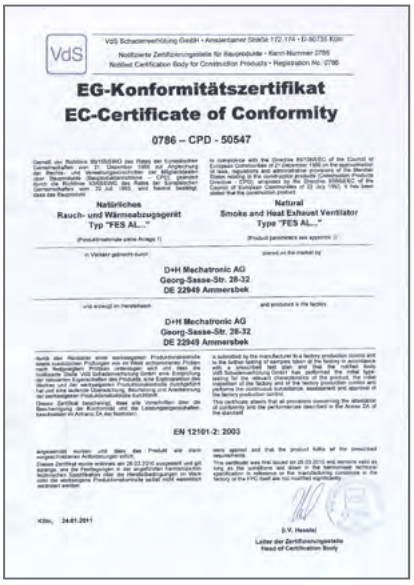


TECHNICAL SPECIFICATION	
Max. dimensions of window leaf (horizontal)	L up to 2500 mm, H up to 1600 mm
Max. dimensions of window leaf (vertical)	L up to 1600 mm, H up to 2500 mm
Max. dimensions of roof window leaf	L up to 1500 mm, H up to 2200 mm or L up to 2200 mm, H up to 1500 mm
Max. surface of vertical/roof 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


EG-Konformitätszertifikat
EC-Certificate of Conformity
0786 – CPD - 50547
D+H Mechatronic AG
Georg-Sasse-Str. 28-32
DE 22949 Ammersbek
EN 12101-2: 2003

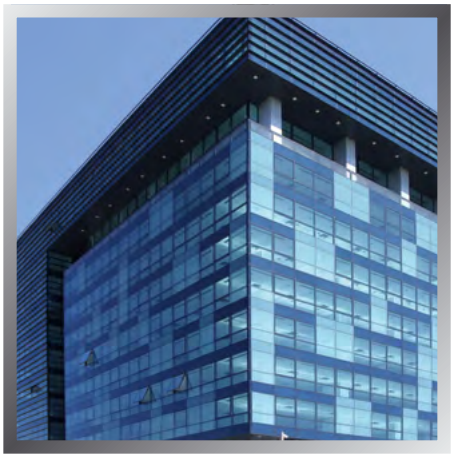

EG-Konformitätszertifikat
Natürliche Rauch- und Wärmeabzugsgeräte (NRWG)
System
esco POLSKA SP.z.o.o.
EN 12101-2 : 2003
Gemäß Produktpass
Nr. 11-003402-PR01 (PP-A04-03-de-01) vom 12. Dezember 2011
0757


EG-Konformitätszertifikat
Natürliche Rauch- und Wärmeabzugsgeräte (NRWG)
System GEZE NRWG
GEZE Polska Sp. z o.o.
EN 12101-2 : 2003
Gemäß Produktpass
Nr. 838 41934/1-2.0 vom 07. Dezember 2010
0757

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





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FIRE PROTECTION AND SMOKE EXHAUST SYSTEMS
Edition 02-2018

Publisher ALUPROF S.A.
www.aluprof.eu

Layout & Print Advertiva

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