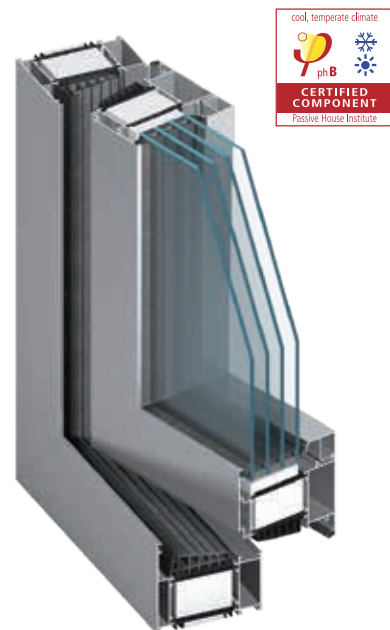




LET'S BUILD A BETTER FUTURE

## Window & door system **MB-104 Passive**

Thanks to its excellent thermal performances, the thermally broken window system MB-104 Passive meets all the requirements for the components used in passive buildings. This was confirmed by certificates granted by the Passive House Institute PHI Darmstadt. This system is intended for fabrication of external structure elements such as various types of windows, doors, shop fronts and spatial structures, which are highly resistant and characterized by excellent water & air tightness, and thermal & acoustic insulation performance.

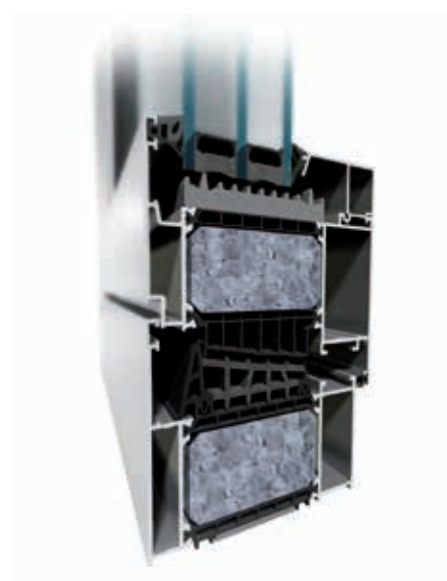


$U_w$  for openable window from 0.53 W/(m<sup>2</sup>K)\*

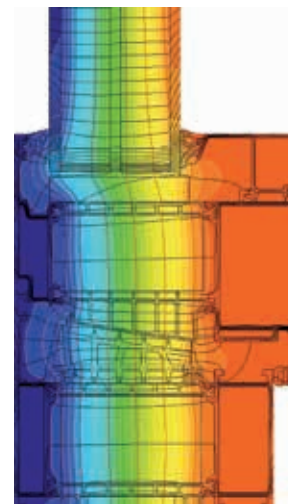
## WINDOWS MB-104 Passive



MB-104 Passive Aero



MB-104 Passive SI

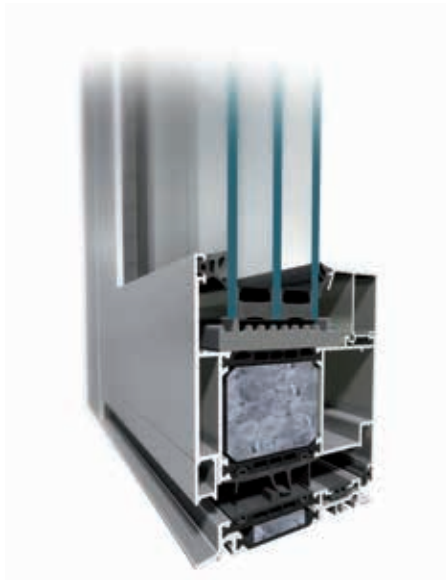


Isothermal lines in MB-104 Passive Aero window

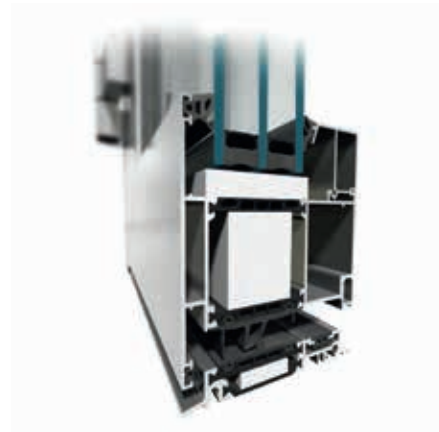
Examples of heat transfer coefficients  $U_w$

WINDOWS SCHEMES	SECTION A OR B		Value $U_w$ [W/m <sup>2</sup> K]		
			Glass with Swisspacer ULTIMATE frame		
			Three chamber	Double chamber	
			$U_g=0.3$	$U_g=0.5$	$U_g=0.7$
	MB-104 Passive SI	 K519013X	0.47	0.62	0.78
		 K519013X + K519104X	0.56	0.68	0.80
	MB-104 Passive AERO	 K819013X	0.45	0.60	0.75
		 K819013X + K819104X	0.52	0.64	0.76

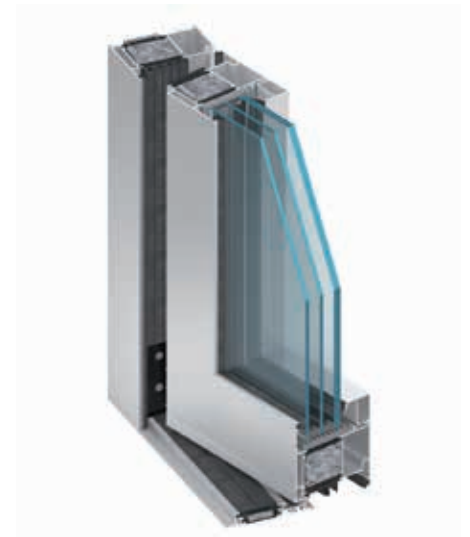
## DOORS MB-104 Passive



MB-104 Passive SI



MB-104 Passive Aero



MB-104 Passive SI, RC3

Examples of heat transfer coefficients  $U_D$

DOORS SCHEMES	SECTION A OR B	Value $U_D$ [W/m <sup>2</sup> K]		
		Glass with Swisspacer ULTIMATE frame		Panel G=60mm
		Double chamber		
		$U_g=0.5$	$U_g=0.7$	$U_p=0.55$
	MB-104 Passive SI  K519141X+K519161X+009204	0.81	0.94	0.79
	MB-104 Passive SI+  K519141X+K519161X+009204	0.72	0.85	0.70
	MB-104 Passive AERO  K819141X+K819161X+009204	0.69	0.82	0.67



## FEATURES AND AESTHETICS

- windows certified by the Passive House Institute PHI Darmstadt (MB-104 Passive SI & MB-104 Passive Aero)
- excellent weather tightness & thermal insulation performance
- wide range of glazing, up to 81 mm allowing for triple and fourfold glazing units
- "Euro" grooves allow the fitting of most of the available hardware, both for aluminium and PVC windows
- can use surface, roller or concealed hinges
- expansion joint profiles for the door leaf
- 95 mm-wide threshold – the threshold and the frame have the same width
- anti-burglary windows and doors up to RC3 class

TECHNICAL SPECIFICATION	MB-104 PASSIVE WINDOWS	MB-104 PASSIVE DOORS
Frame depth	95 mm	95 mm
Casement depth	104 mm	95 mm
Glazing thickness	frame: 27 – 72 mm, vent: 34.5 – 81 mm	27 – 72 mm
Max. casement size (H×L)	H to 2900 mm, L to 1700 mm	H to 3000 mm, L to 1400 mm

PERFORMANCE	MB-104 PASSIVE WINDOWS	MB-104 PASSIVE DOORS
Air permeability	class 4, EN 12207	class 4, EN 12207
Water tightness	to class AE 1800, EN 12208	class E1200 Pa, EN 12208
Thermal insulation	$U_w$ from 0.53 W/(m <sup>2</sup> K)*	$U_D$ from 0.53 W/(m <sup>2</sup> K)**
Windload resistance	class C5/B5, EN 12210	class C4/B5, EN 12210
Burglary resistance	class RC1 to RC3, EN 1627	class RC1 to RC3, EN 1627

\* -  $U_w$  for MB-104 Passive Aero-based openable window casement size 1700×2100 mm, with glazing  $U_g=0.4$  W/(m<sup>2</sup>K)

\*\* -  $U_D$  for panel door MB-104 Passive Aero casement size 1230×2180 mm