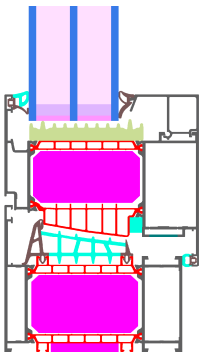
Certificate

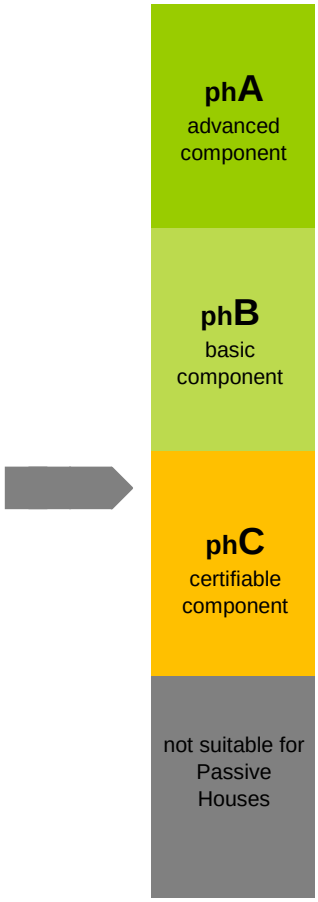
Certified Passive House Component
for cool, temperate climates; valid until 31.12.2015

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
GERMANY

Category: **Window Frame**
Manufacturer: **Aluprof S.A.**
43-300 Bielsko-Biała, Poland
Product name: **MB-104 Passive SI**



Passive House Efficiency Class



This certificate was awarded based on the following criteria:

Given a Ug value of 0.70 W/(m²K) and a window size of 1.23 m by 1.48 m,

U_W = **0.80 W/(m²K) ≤ 0.80 W/(m²K)**

Taking into account the installation based thermal bridges and provided that the installation is, with regard to the thermal bridges, equal or better than shown in the data sheet, the window meets the following criterion.

$U_{W,installed}$ ≤ **0.85 W/(m²K)**

Thermal data

	U_f-value [W/(m²K)]	Width [mm]	Ψ_g [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer			Swisspacer ULTIMATE*	
Bottom	0.83	150	0.021	0.77
Side/top	0.83	150	0.021	

*Spacers of lower thermal quality, especially those made of aluminium, lead to significantly higher thermal losses and lower temperature factors.

For further information, please see the data sheet

Data Sheet Aluprof S.A., MB-104 Passive SI

Manufacturer Aluprof S.A.
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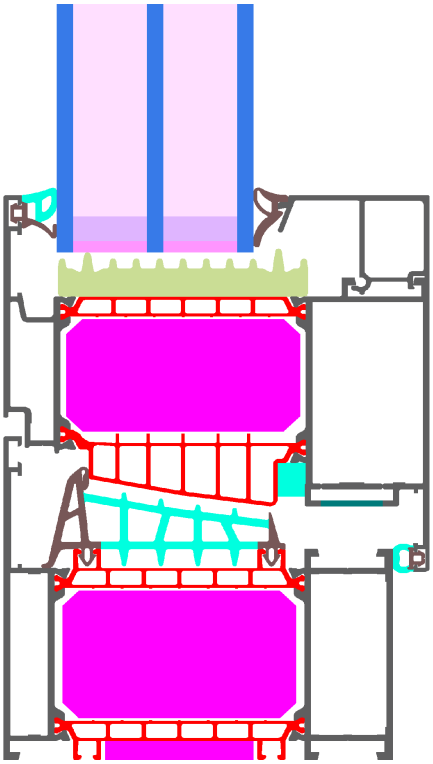
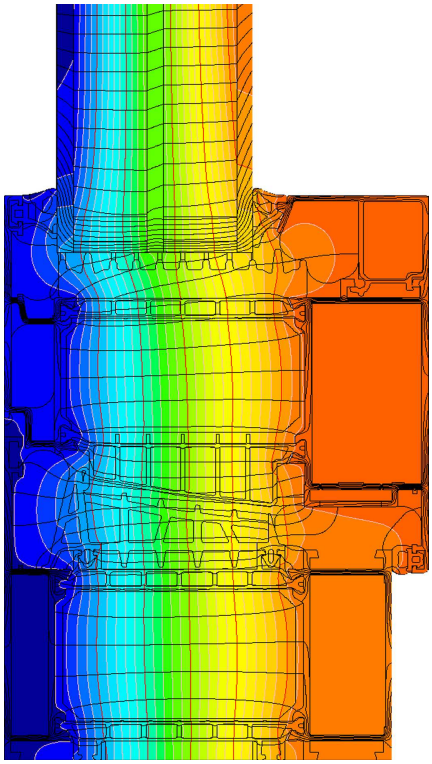
Tel.: +48 33 8195300
Email: aluprof@aluprof.eu, http://www.aluprof.eu/



Bottom section



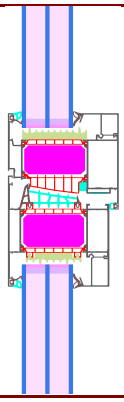
Isothermal

Description

Aluminium frame with insulationcore made of expanded polystyrene and rebate insulation of polyethylene foam.
Pane thickness: 48 mm (4/18/4/18/4), Rebate depth: 15 mm.

Thermal data for the window frame

	U_f-value [W/(m²K)]	Width [mm]	Ψ_g [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer			Swisspacer ULTIMATE*	
Bottom	0.83	150	0.021	0.77
Side/Top	0.83	150	0.021	
Flying Mullion	0.77	182	0.020	0.86

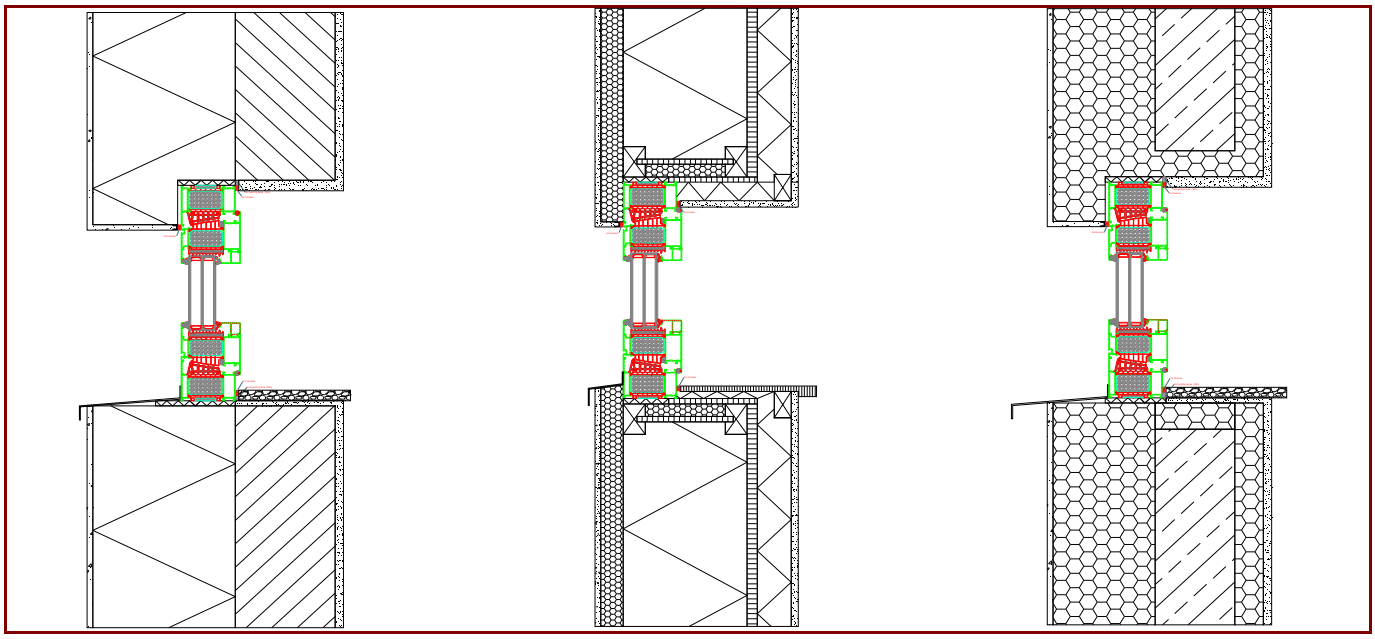


Mullion

* Spacers of lower thermal quality lead to higher thermal losses and lower glass edge temperatures.

Data Sheet Aluprof S.A., MB-104 Passive SI

Installation



Installation based thermal bridge $\Psi_{instal.}$ in Passive House suitable walls

Position		EIFS	Timber construction wall	Insulated formwork blocks
Bottom	[W/(mK)]	0.029	0.029	0.022
Side/Top	[W/(mK)]	0.011	0.015	0.010
$U_{W,instal.}$	[W/(m²K)]	0.85	0.85	0.84

Explanatory notes

The window U-values were calculated based on a 1.23 m by 1.48 m window U_g = 0.70 W/(m²K).
If better glazing is used, the window U-values decrease as follows:

U Glazing	U_g [W/(m²K)]	0.64	0.58	0.54
U Window	U_W [W/(m²K)]	0.76	0.73	0.70

Depending on the thermal losses through opaque elements, transparent components are categorised according to efficency classes. These thermal losses include the losses through the frame, the frame width, the thermal bridge at the glass edge as well as the length of the glass edge. Certificates for arctic regions are too valid vor cold, certificates for cold regions are too valid for cool, temperate zones.
Please ask the manufacturer for a detailed report containing all calculations and results.
For further information, please visit www.passivehouse.com or www.passipedia.org.