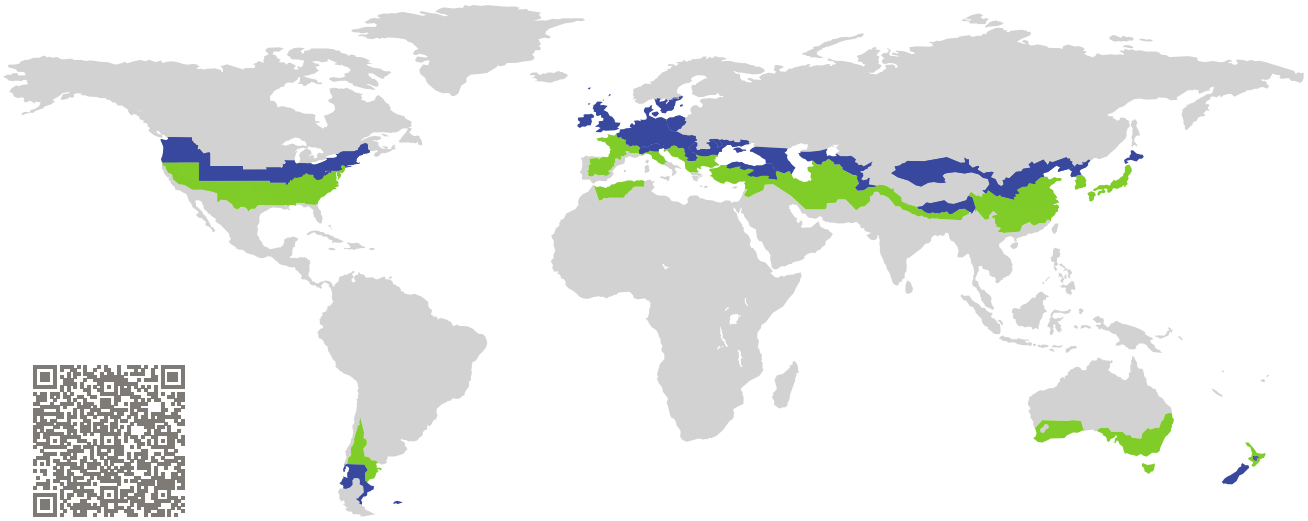
CERTIFICATE

Certified Passive House Component

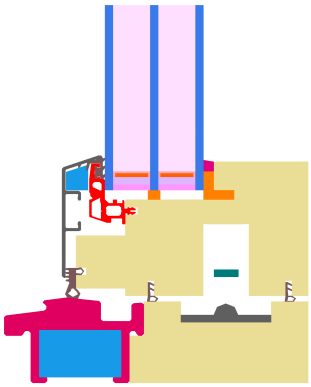
Component-ID 0399sl03 valid until 31st December 2019

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Sliding Door**
Manufacturer:	**pro Passivhausfenster GmbH, Oberaudorf, Germany**
Product name:	**smartwin sliding**

This certificate was awarded based on the following criteria for the cool, temperate climate zone



Comfort	U_{SL} = 0.78	≤	0.80 W/(m² K)
	$U_{SL,installed}$	≤	0.85 W/(m² K)
	with U_g	=	0.70 W/(m² K)
Hygiene	$f_{Rsi=0.25}$	≥	0.70

cool, temperate climate

phA

CERTIFIED COMPONENT

Passive House Institute

Passive House efficiency class	phE	phD	phC	phB	phA

www.passivehouse.com

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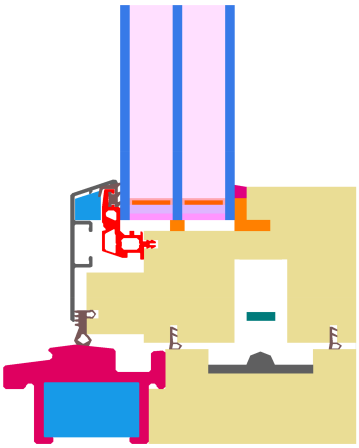
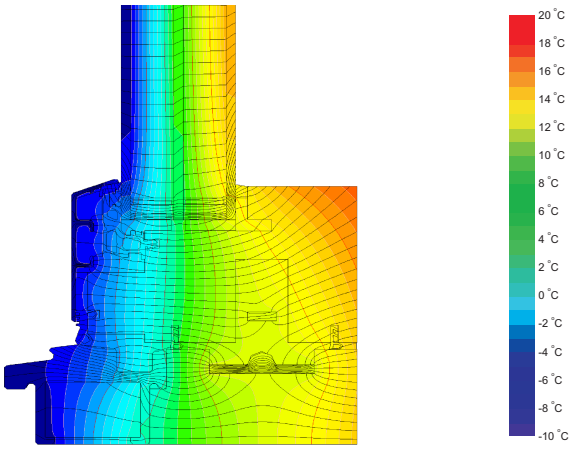
☎ +49 (0)8033 / 304098 | ✉ phc@freundorfer.eu | http://www.propassivhausfenster.net |



Calculation model



Isothermal

Description

Timber Window frame, rainprotected by alluminium cladding, insulated by woodfibre board (0,04 and 0,05W/(mK)). Used Pane: 48 mm (4/18/4/18/4), intersection of the glass: 15 mm.

Explanation

The window U-values were calculated for the test window size of 2.40 m × 2.50 m with U_g = 0.70 W/(m^2 K). If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	U_g =	0.70	0.66	0.60	0.54	W/(m^2 K)
		↓	↓	↓	↓	
Window	U_{SL} =	0.78	0.75	0.70	0.65	W/(m^2 K)

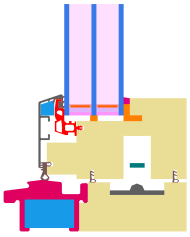
Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations performed in the context of certification is available from the manufacturer.
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense to use a component of a higher thermal quality which has been certified for a climate zone with more stringent requirements.

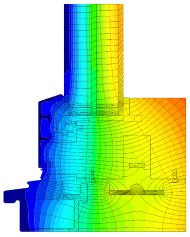
Further information relating to certification
can be found on www.passivehouse.com and passipedia.org.

Frame values			Frame width b_f mm	U-value frame U_f W/(m² K)	Ψ-panel edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Top	(to)		92	0.84	0.022	0.70
Side	(s)		85	0.81	0.022	0.70
Top fixed	(tof)		86	0.53	0.023	0.70
Side fixed	(sf)		86	0.53	0.023	0.70
Bottom fixed	(bof)		108	0.66	0.022	0.70
Threshold	(th)		117	1.08	0.025	0.70
Mullion 1 casement	(m1)		110	1.29	0.023	0.70
Spacer: SWISSPACER V				Secondary seal: -		

Threshold

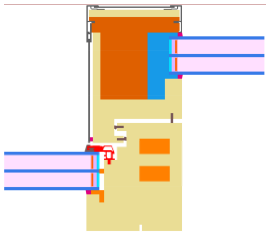
b_f = 117.00 mm
U_f = 1.08 W/(m² K)
Ψ_g = 0.025 W/(m K)
f_{Rsi} = 0.70





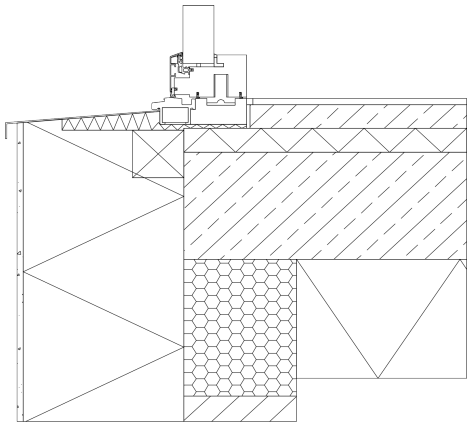
Mullion
1 casement

b_f = 110.00 mm
U_f = 1.29 W/(m² K)
Ψ_g = 0.023 W/(m K)
f_{Rsi} = 0.70



Exterior insulation and finishing s. (EIFS) bottom (operable)

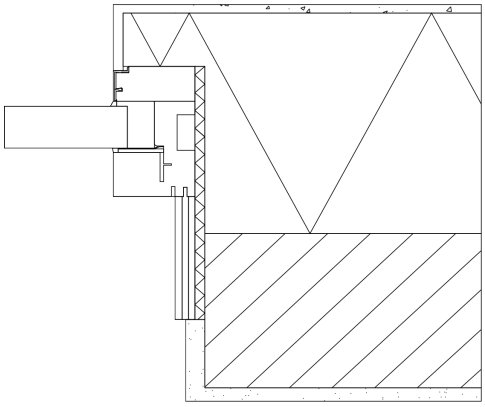
U_1 = 0.13 U_2 = 0.14 [W/(m² K)]



$\Psi_{install}$ = 0.06 W/(m K)

Exterior insulation and finishing s (EIFS) side (fixed glazed)

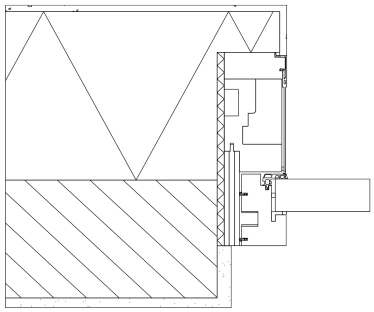
U_1 = 0.13 [W/(m² K)]



$\Psi_{install}$ = –0.00 W/(m K)

Exterior insulation and finishing s (EIFS) side (operable)

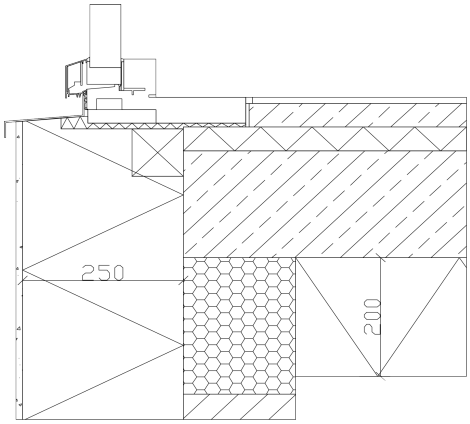
U_1 = 0.13 [W/(m² K)]



$\Psi_{install}$ = 0.04 W/(m K)

Exterior insulation and finishing system (EIFS) bottom (fixed)

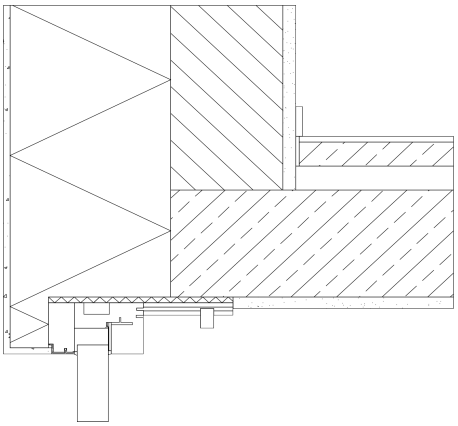
U_1 = 0.13 U_2 = 0.14 [W/(m² K)]



$\Psi_{install}$ = 0.06 W/(m K)

Exterior insulation and finishing system (EIFS) (fixed glazed)

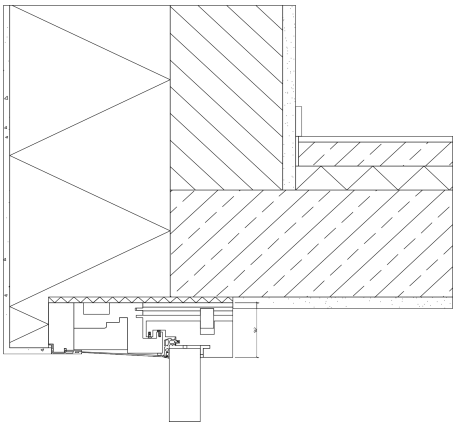
U_1 = 0.13 [W/(m² K)]



$\Psi_{install}$ = –0.00 W/(m K)

Exterior insulation and finishing system (EIFS) (operable)

U_1 = 0.13 [W/(m² K)]



$\Psi_{install}$ = 0.03 W/(m K)