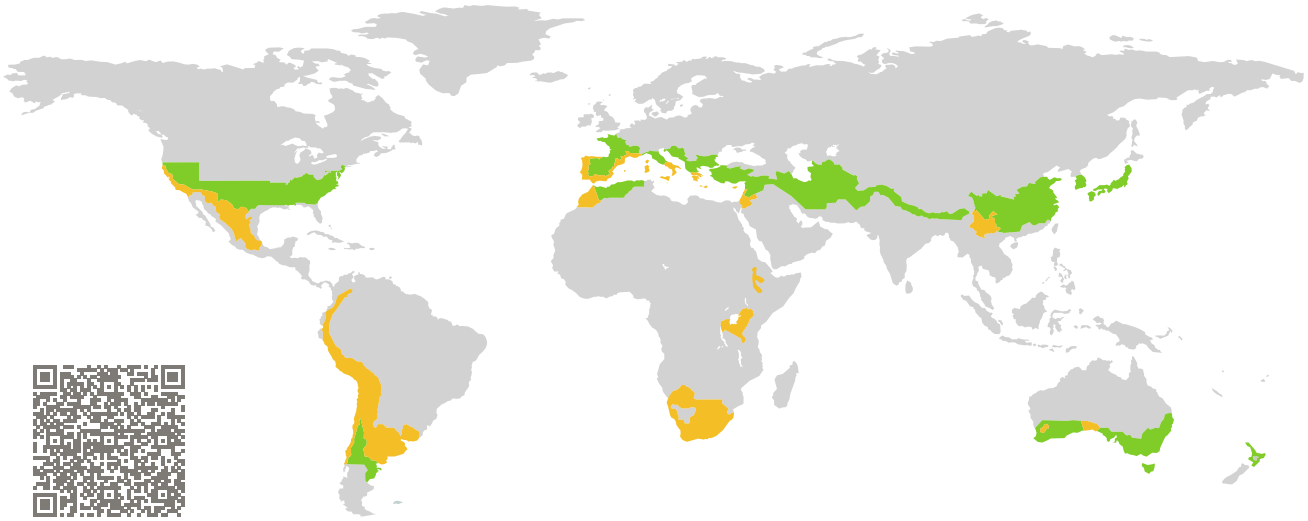
CERTIFICATE

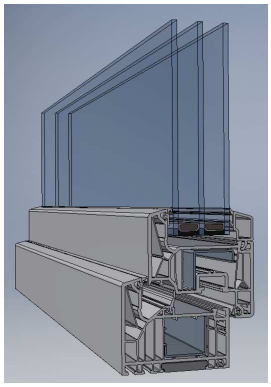
Certified Passive House Component

Component-ID 1701ws04 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Window system**
Manufacturer:	**Schüco Iberia S.L., Valdemoro (Madrid), Spain**
Product name:	**Schüco Living 82 MD**



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

Comfort	U_W = 1.00	≤	1.00 W/(m² K)
	$U_{W,\text{installed}}$	≤	1.05 W/(m² K)
	with U_g	=	0.90 W/(m² K)
Hygiene	$f_{Rsi=0.25}$	≥	0.65
Airtightness	Q_{100} = 0.19	≤	0.25 m³/(h m)

warm, temperate climate

phC

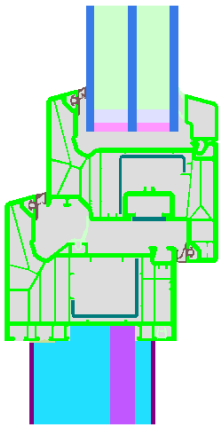
CERTIFIED COMPONENT

Passive House Institute

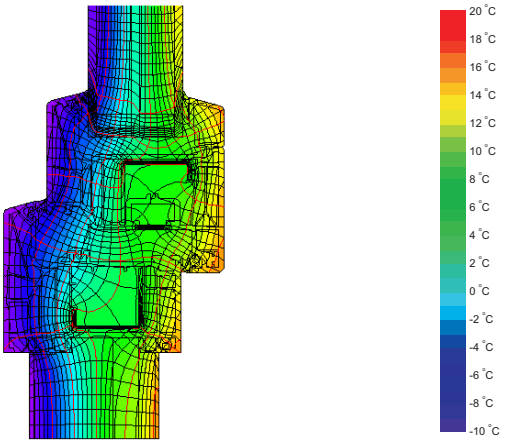
Passive House efficiency class	phE	phD	phC	phB	phA

www.passivehouse.com

Schüco Iberia S.L.
Avda. San Roque, 33, 28343 Valdemoro (Madrid), Spain
☎ +34 91 894 84 25 | ✉ | http://www.schueco.com |



Calculation model



Isothermal

Description

PVC window frame with reinforcing steel profiles. Bottom profile insulated by XPS (0.030 W/(mK)). Airtightness value of 0.19 m³/(h*m) ensured at a terrace door with flying mullion, 168 cm * 257 cm. Pane thickness: 44 mm (4/16/4/16/4), rebate depth: 20 mm. Spacer: SWISSPACER Ultimate.

Explanation

The window U-values were calculated for the test window size of 2.46 m × 1.48 m with U_g = 0.90 W/(m² K). If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	U_g =	0.90	0.58	0.64	0.70	W/(m² K)
		↓	↓	↓	↓	
Window	U_W =	1.00	0.79	0.83	0.87	W/(m² K)

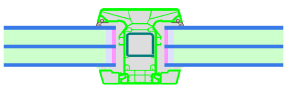
Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations 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.

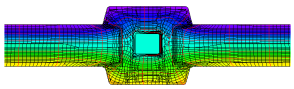
Further information relating to certification
can be found on www.passivehouse.com and passipedia.org.

Frame values		Frame width b_f mm	U-value frame U_f W/(m² K)	Ψ-glazing edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Mullion fixed	(0M1)	92	0.98	0.025	0.68
Mullion fixed	(0M2)	112	1.10	0.026	0.68
Transom fixed	(0T1)	92	0.98	0.025	0.68
Mullion 1 casement	(1M1)	142	1.05	0.026	0.68
Mullion 1 casement	(1M2)	162	1.11	0.026	0.68
Transom 1 casement	(1T1)	142	1.05	0.026	0.68
Mullion 2 casements	(2M1)	192	1.08	0.026	0.70
Transom 2 casements	(2T1)	192	1.08	0.026	0.70
Bottom fixed	(FB1)	110	0.86	0.026	0.69
Top fixed	(FH1)	70	0.98	0.025	0.69
Lateral fixed	(FJ1)	70	0.98	0.025	0.69
Flying Mullion	(FM1)	174	1.04	0.026	0.69
Bottom	(OB1)	160	0.96	0.026	0.70
Top	(OH1)	120	1.05	0.026	0.70
Lateral	(OJ1)	120	1.05	0.026	0.70
Threshold	(OT4)	88	1.26	0.025	0.67
Threshold	(OT5)	88	1.44	0.025	0.66
Spacer: SWISSPACER ULTIMATE				Secondary seal: Polysulfide	

Mullion
fixed

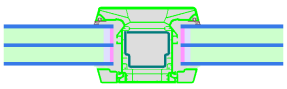
b_f = 92 mm
U_f = 0.98 W/(m² K)
Ψ_g = 0.025 W/(m K)
f_{Rsi} = 0.68

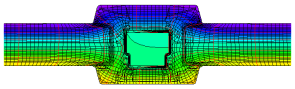




Mullion
fixed

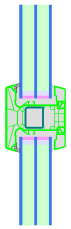
b_f = 112 mm
U_f = 1.10 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.68

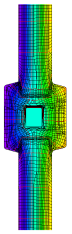




Transom
fixed

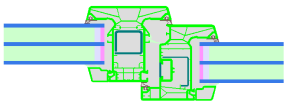
b_f = 92 mm
U_f = 0.98 W/(m² K)
Ψ_g = 0.025 W/(m K)
f_{Rsi} = 0.68

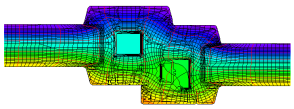




Mullion
1 casement

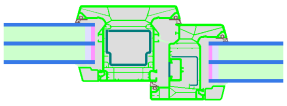
b_f = 142 mm
U_f = 1.05 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.68

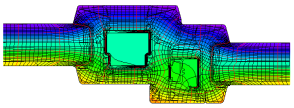




Mullion
1 casement

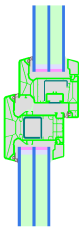
b_f = 162 mm
U_f = 1.11 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.68

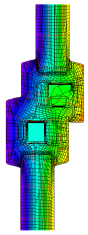




Transom
1 casement

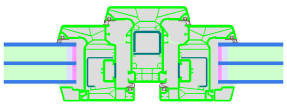
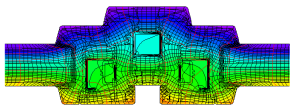
b_f = 142 mm
U_f = 1.05 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.68





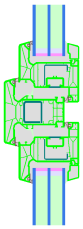
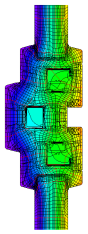
Mullion
2 casements

b_f = 192 mm
U_f = 1.08 W/(m^2 K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.70

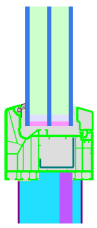
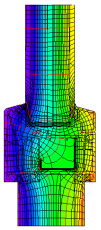
Transom
2 casements

b_f = 192 mm
U_f = 1.08 W/(m^2 K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.70

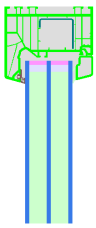
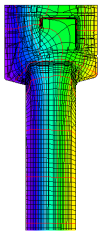
Bottom
fixed

b_f = 110 mm
U_f = 0.86 W/(m^2 K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.69

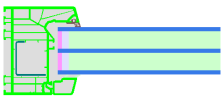
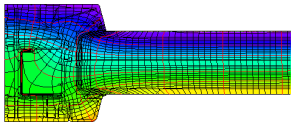
Top
fixed

b_f = 70 mm
U_f = 0.98 W/(m^2 K)
Ψ_g = 0.025 W/(m K)
f_{Rsi} = 0.69

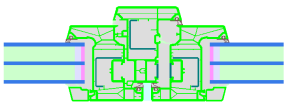
Lateral
fixed

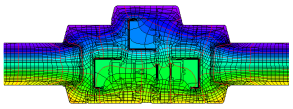
b_f = 70 mm
U_f = 0.98 W/(m^2 K)
Ψ_g = 0.025 W/(m K)
f_{Rsi} = 0.69

Flying Mullion

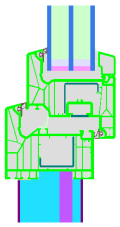
b_f = 174 mm
U_f = 1.04 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.69

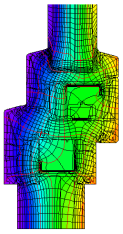




Bottom

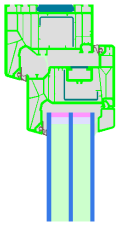
b_f = 160 mm
U_f = 0.96 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.70

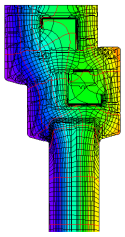




Top

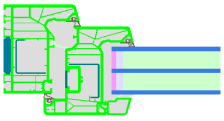
b_f = 120 mm
U_f = 1.05 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.70

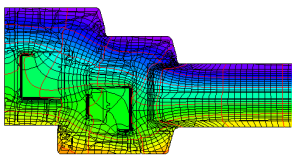




Lateral

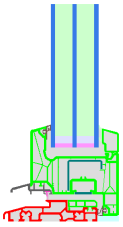
b_f = 120 mm
U_f = 1.05 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.70

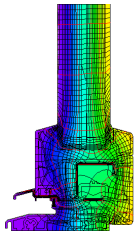




Threshold

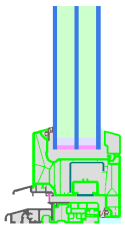
b_f = 88 mm
U_f = 1.26 W/(m² K)
Ψ_g = 0.025 W/(m K)
f_{Rsi} = 0.67

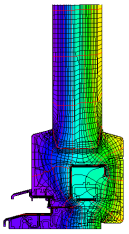




Threshold

b_f = 88 mm
U_f = 1.44 W/(m^2 K)
Ψ_g = 0.025 W/(m K)
f_{Rsi} = 0.66

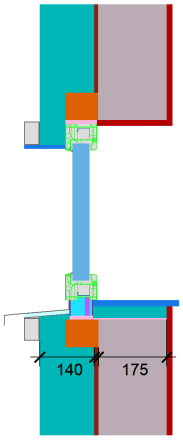




Validated installations

Ventillated facade (fixed glazed)

U_{Wall} = 0.22 W/(m² K)

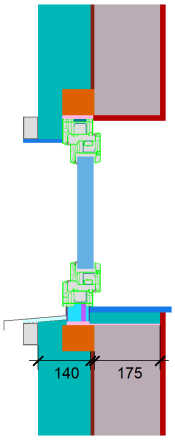


$\Psi_{install}$	W/(m K)
Top	–0.009
Left	–0.009
Right	–0.009
Bottom	0.012

$U_{W,installed}$ = 1.00 W/(m² K)

Ventilated facade (operable)

U_{Wall} = 0.22 W/(m² K)

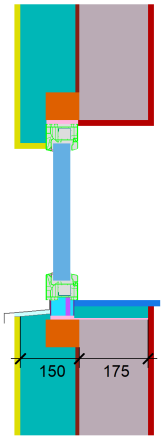


$\Psi_{install}$	W/(m K)
Top	–0.005
Left	–0.005
Right	–0.005
Bottom	0.012

$U_{W,installed}$ = 1.00 W/(m² K)

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

U_{Wall} = 0.23 W/(m² K)

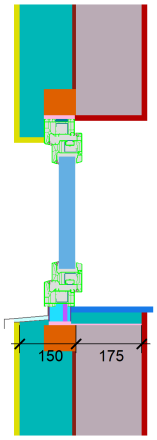


$\Psi_{install}$	W/(m K)
Top	–0.009
Left	–0.009
Right	–0.009
Bottom	0.011

$U_{W,installed}$ = 1.00 W/(m² K)

Exterior insulation and finishing system (EIFS) (operable)

U_{Wall} = 0.23 W/(m² K)

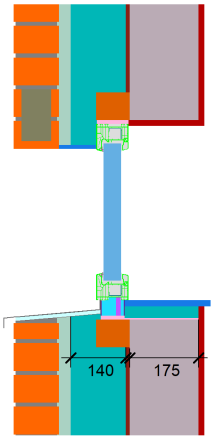


$\Psi_{install}$	W/(m K)
Top	–0.004
Left	–0.004
Right	–0.004
Bottom	0.012

$U_{W,installed}$ = 1.00 W/(m² K)

Cavity wall (fixed glazing)

U_{Wall} = 0.22 W/(m² K)

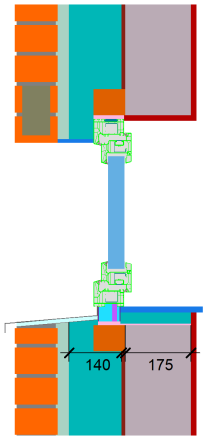


$\Psi_{install}$	W/(m K)
Top	–0.008
Left	–0.008
Right	–0.008
Bottom	0.012

$U_{W,installed}$ = 1.00 W/(m² K)

Cavity wall (operable)

U_{Wall} = 0.22 W/(m² K)

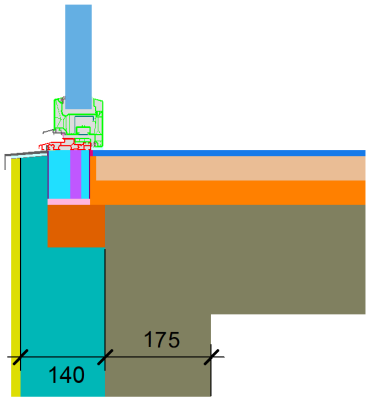


$\Psi_{install}$	W/(m K)
Top	–0.005
Left	–0.005
Right	–0.005
Bottom	0.013

$U_{W,installed}$ = 1.00 W/(m² K)

Ext insulation a. finish. s. (EIFS)
threshold ceiling (operable)

U_1 = 0.23 [W/(m² K)]



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