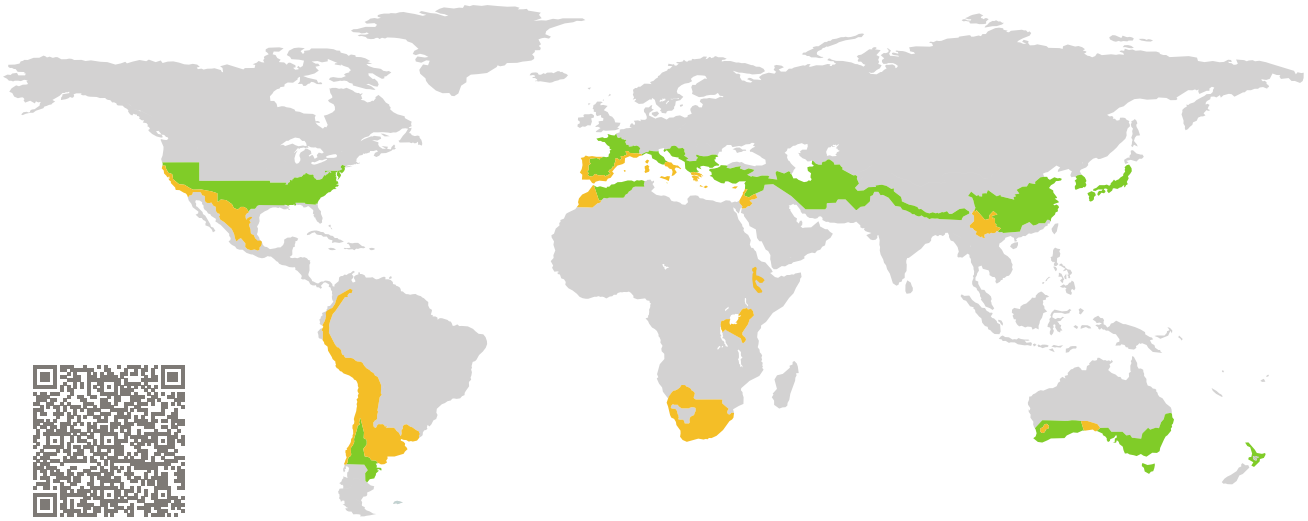
CERTIFICATE

Certified Passive House Component

Component-ID 2111ws04 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Window system**
Manufacturer:	**Carpintek Mobdesign, S.L., Torrejon de Ardoz (Madrid), Spain**
Product name:	**EnergyTEK 89**

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} = 0.15	≤	0.25 m³/(h m)

warm, temperate climate

phB

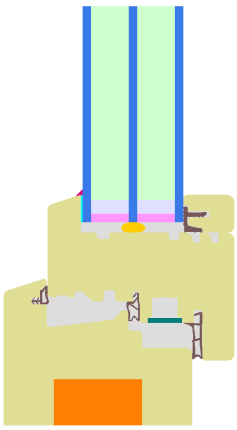
Passive House efficiency class	phE	phD	phC	phB	phA

CERTIFIED COMPONENT

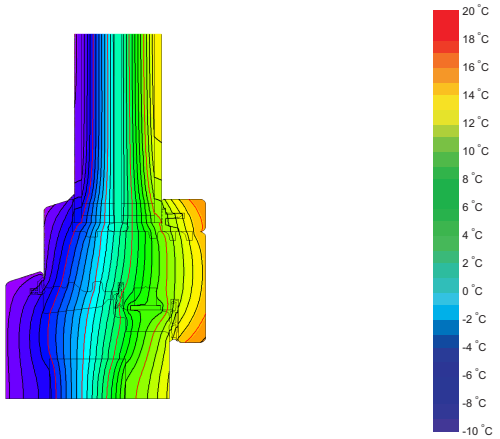
Passive House Institute

www.passivehouse.com

Carpintek Mobdesign, S.L.
Camino Mejorada Nº 7, 28850 Torrejon de Ardoz (Madrid), Spain
☎ +34 910 088 018 | ✉ ventanas@carpintek.es | https://www.carpintek.es/ |



Calculation model



Isothermal

Description

Timber window system with frames made of pinewood density up to 500 kg/m³(lambda 0.13 W/(mK)). The main structure is insulated with EPS (Donpol 0.034 W/(mK)). Glazing rebate insulated with a jute cord (0.065 W/(mK)). Pane thickness: 48 mm (4/18/4/18/4), rebate depth: 13 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	0.72	0.66	0.58	W/(m² K)
		↓	↓	↓	↓	
Window	U_W =	1.00	0.87	0.83	0.77	W/(m² K)

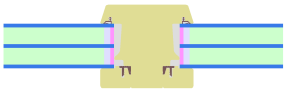
Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations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

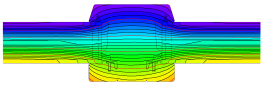
Further information relating to certification
can be found on www.passivehouse.com and passipedia.org.

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)	100	1.06	0.027	0.69
Transom fixed	(0T1)	100	1.06	0.027	0.69
Mullion 1 casement	(1M1)	141	1.10	0.026	0.69
Transom 1 casement	(1T1)	141	1.10	0.026	0.69
Bottom fixed	(FB1)	70	0.94	0.026	0.69
Top fixed	(FH1)	70	0.94	0.026	0.69
Lateral fixed	(FJ1)	70	0.94	0.026	0.69
Flying Mullion	(FM1)	132	1.11	0.026	0.69
Bottom	(OB1)	110	1.02	0.026	0.70
Top	(OH1)	110	1.02	0.026	0.70
Lateral	(OJ1)	110	1.02	0.026	0.70
Spacer: SWISSPACER ULTIMATE			Secondary seal: Polysulfide		

Mullion
fixed

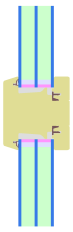
b_f = 100 mm
U_f = 1.06 W/(m² K)
Ψ_g = 0.027 W/(m K)
f_{Rsi} = 0.69

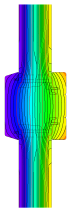




Transom
fixed

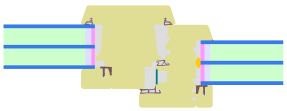
b_f = 100 mm
U_f = 1.06 W/(m² K)
Ψ_g = 0.027 W/(m K)
f_{Rsi} = 0.69

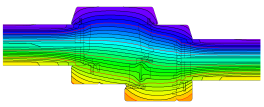




Mullion
1 casement

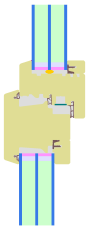
b_f = 141 mm
U_f = 1.10 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.69

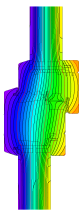




Transom
1 casement

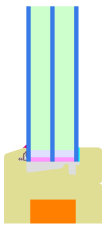
b_f = 141 mm
U_f = 1.10 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.69





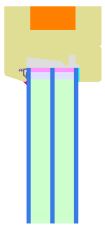
Bottom
fixed

b_f = 70 mm
U_f = 0.94 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.69



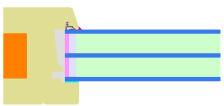
Top
fixed

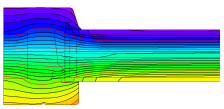
b_f = 70 mm
U_f = 0.94 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.69



Lateral
fixed

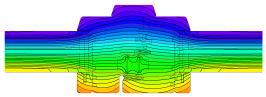
b_f = 70 mm
U_f = 0.94 W/(m² K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.69





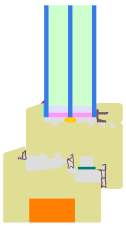
Flying Mullion

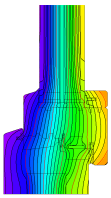
b_f = 132 mm
U_f = 1.11 W/(m^2 K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.69



Bottom

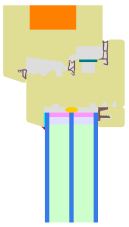
b_f = 110 mm
U_f = 1.02 W/(m^2 K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.70

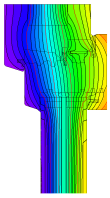




Top

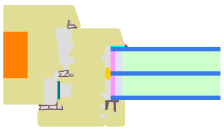
b_f = 110 mm
U_f = 1.02 W/(m^2 K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.70

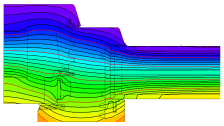




Lateral

b_f = 110 mm
U_f = 1.02 W/(m^2 K)
Ψ_g = 0.026 W/(m K)
f_{Rsi} = 0.70

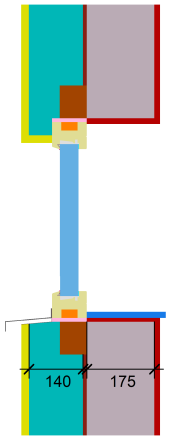




Validated installations

Ext. ins. a. finish. s. (EIFS) threshold floor slab (fixed gl.)

U_{Wall} = 0.23 W/(m² K)

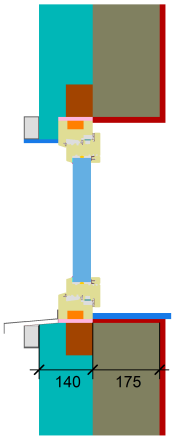


$\Psi_{install}$	W/(m K)
Top	0.002
Left	0.002
Right	0.002
Bottom	0.014

$U_{W,installed}$ = 1.01 W/(m² K)

Ventilated facade (operable)

U_{Wall} = 0.23 W/(m² K)



$\Psi_{install}$	W/(m K)
Top	0.003
Left	0.003
Right	0.003
Bottom	0.016

$U_{W,installed}$ = 1.02 W/(m² K)

Lightweight timber (fixed glazed)

U_{Wall} = 0.25 W/(m² K)

$\Psi_{install}$	W/(m K)
Top	0.008
Left	0.008
Right	0.008
Bottom	0.023

$U_{W,installed}$ = 1.03 W/(m² K)

Lightweight timber (operable)

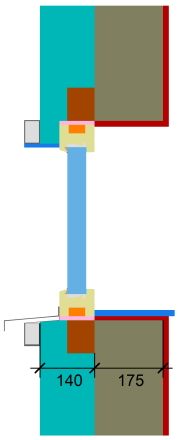
U_{Wall} = 0.25 W/(m² K)

$\Psi_{install}$	W/(m K)
Top	0.011
Left	0.011
Right	0.011
Bottom	0.024

$U_{W,installed}$ = 1.04 W/(m² K)

Ventilated facade (fixed glazing)

U_{Wall} = 0.23 W/(m² K)

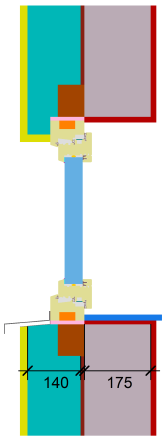


$\Psi_{install}$	W/(m K)
Top	–0.002
Left	–0.002
Right	–0.002
Bottom	0.014

$U_{W,installed}$ = 1.01 W/(m² K)

Exterior insulation and finishing system (EIFS) (operable)

U_{Wall} = 0.23 W/(m² K)



$\Psi_{install}$	W/(m K)
Top	0.005
Left	0.005
Right	0.005
Bottom	0.015

$U_{W,installed}$ = 1.02 W/(m² K)