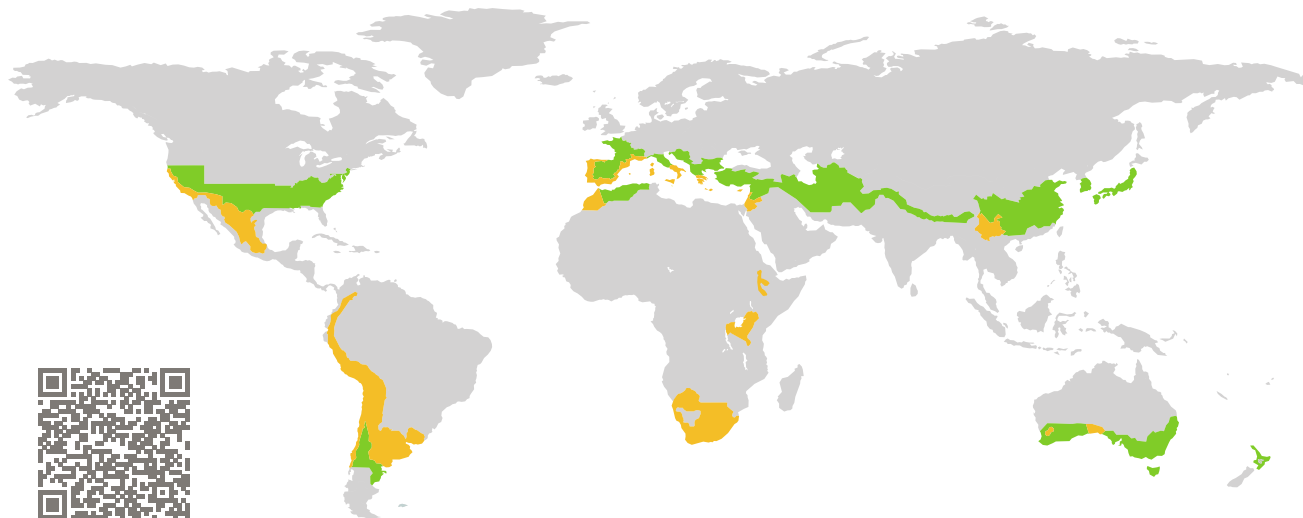


CERTIFICATE

Certified Passive House Component

Component-ID 0841wi04 valid until 31st December 2016

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

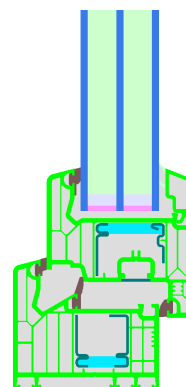


Category: **Window frame**
Manufacturer: **INRIALSA PVC S.A.,
Lardero, La Rioja,
Spain**
Product name: **Window Ecoven Plus + by INRIALSA**

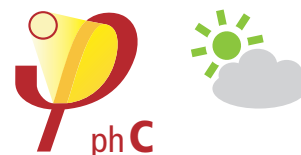
**This certificate was awarded based on the following
criteria for the warm, temperate climate zone**

Comfort $U_W = 1.00 \leq 1.00 \text{ W}/(\text{m}^2 \text{ K})$
 $U_{W, \text{ installed}} \leq 1.05 \text{ W}/(\text{m}^2 \text{ K})$
mit $U_g = 0.90 \text{ W}/(\text{m}^2 \text{ K})$

Hygiene $f_{R_{si=0.25}} \geq 0.65$



warm, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute

Passive House
efficiency class

phE

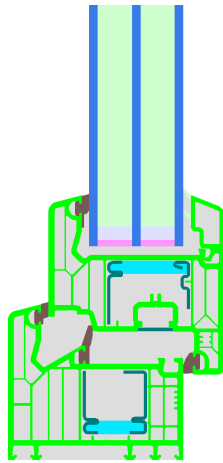
phD

phC

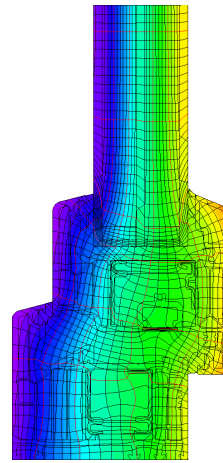
phB

phA

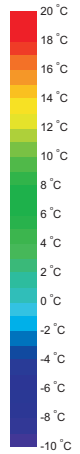
www.passivehouse.com



Calculation model



Isothermal



Description

PVC frame with thermally broken and insulated (0.035 W/(mK) reinforcements. Pane thickness: 44 mm (4/16/4/16/4), rebate depth: 28 mm, spacer: SWISSPACER Ultimate with polysulfide secondary seal.

Explanation






The window U-values were calculated for the test window size of 1.23 m × 1.48 m with $U_g = 0.70$ W/(m² K). If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	$U_g =$	0.90	0.64	0.58	0.53	W/(m ² K)
		↓	↓	↓	↓	
Window	$U_w =$	1.00	0.83	0.79	0.76	W/(m ² K)

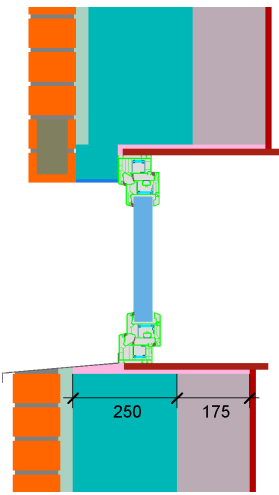
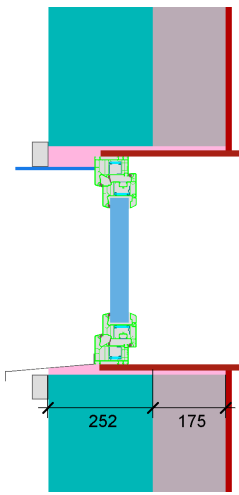
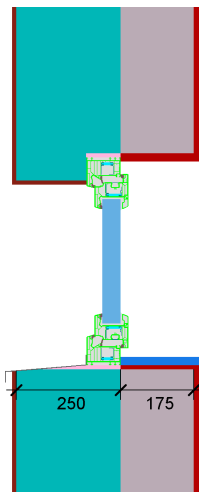
Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations 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 certain circumstances, 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/(m K)	Ψ -glass edge Ψ_g W/(m ² K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Top		124	1.03	0.024	0.71
Left		124	1.03	0.024	0.71
Right		124	1.03	0.024	0.71
Bottom		124	1.03	0.024	0.71
Flying mullion		176	1.04	0.022	0.71
Spacer: SWISSPACER Ultimate			Secondary seal: Polysulfide		

Validated installations

Cavity wall		Ventilated facade		EIFS	
					
$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)
Top	0.002	Top	0.013	Top	-0.002
Left	0.002	Left	0.013	Left	-0.002
Right	0.002	Right	0.013	Right	-0.002
Bottom	0.024	Bottom	0.024	Bottom	0.022
$U_{W,installed} = 1.01 \text{ W/(m}^2 \text{ K)}$		$U_{W,installed} = 1.04 \text{ W/(m}^2 \text{ K)}$		$U_{W,installed} = 1.00 \text{ W/(m}^2 \text{ K)}$	

