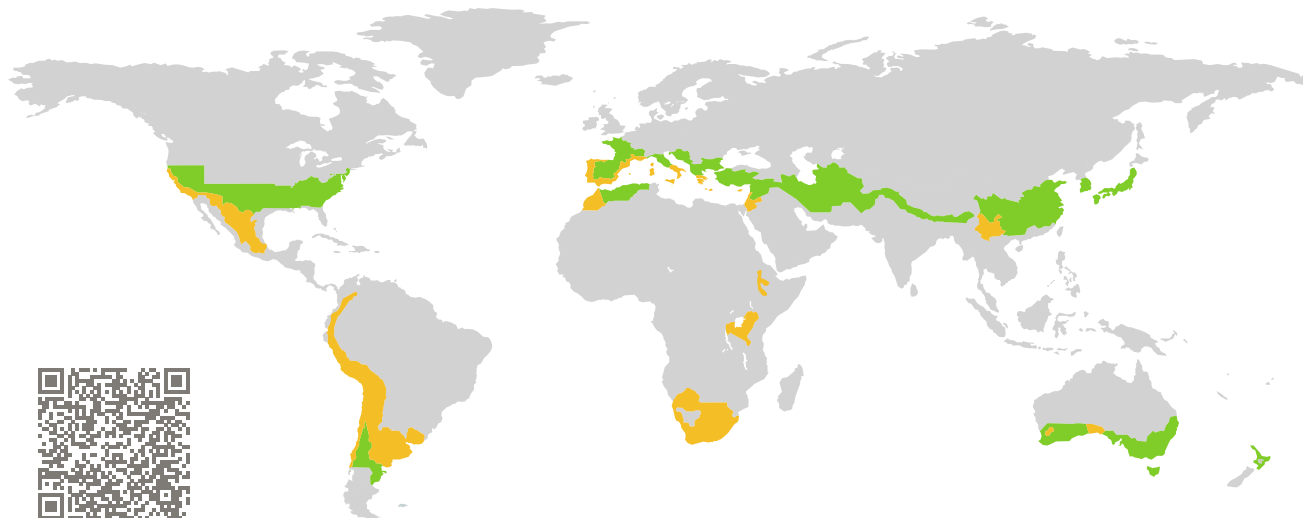


CERTIFICATE

Certified Passive House Component

Component-ID 1708wi04 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

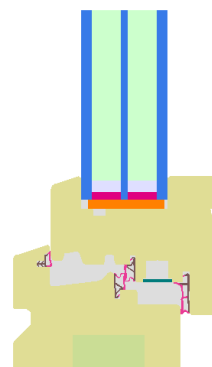


Category: **Window Frame**
Manufacturer: **SHITECMA, S.L.,**
Alcazar de San Juan-Ciudad Real,
Spain
Product name: **ARAL 93 PSH**

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

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

Hygiene $f_{Rsi=0.25} \geq 0.65$



Passive House
efficiency class

phE

phD

phC

phB

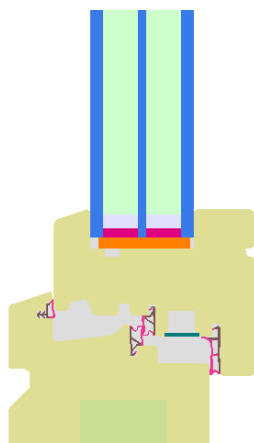
phA

warm, temperate climate

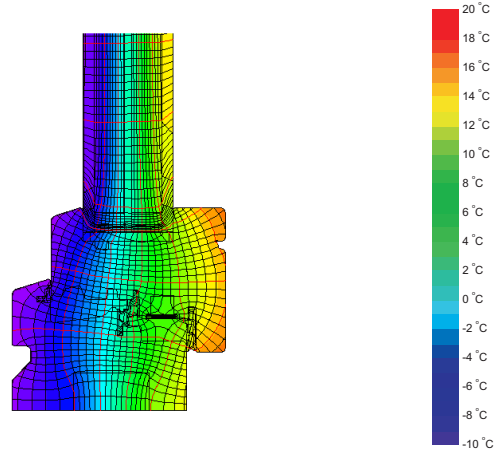


**CERTIFIED
COMPONENT**

Passive House Institute



Calculation model



Isothermal

Description

Openable timber frame made out of pinewood density 500 kg/m³(lambda 0.13 W/(mK)). Frame insulated with EPS (0.036 W/(mK)) Pane thickness: 48 mm (6/16/4/16/6), rebate depth: 13 mm. Spacer: TGI-Spacer Precision with silicone secondary seal.

Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with $U_g = 0.90$ W/(m² K). If a higher quality glazing is used, the window U-values will improve as follows:

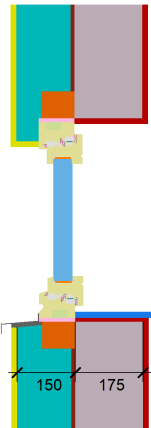
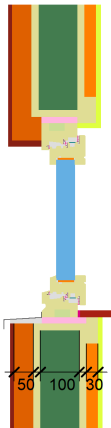
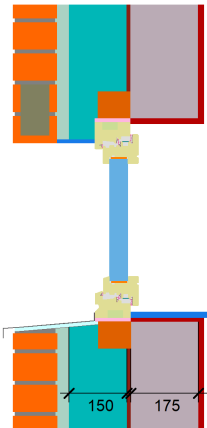
Glazing	$U_g =$	0.90	0.70	0.64	0.58	W/(m ² K)
		↓	↓	↓	↓	
Window	$U_W =$	1.00	0.86	0.82	0.78	W/(m ² K)





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.

Validated installations

Exterior insulation and finishing system		Lightweight timber (operable)		Cavity wall	
$U_{\text{Wall}} = 0.23 \text{ W}/(\text{m}^2 \text{ K})$		$U_{\text{Wall}} = 0.19 \text{ W}/(\text{m}^2 \text{ K})$		$U_{\text{Wall}} = 0.21 \text{ W}/(\text{m}^2 \text{ K})$	
					
Ψ_{install}	W/(m K)	Ψ_{install}	W/(m K)	Ψ_{install}	W/(m K)
Top	0.002	Top	0.008	Top	0.004
Side	0.002	Side	0.008	Side	0.004
Bottom	0.020	Bottom	0.019	Bottom	0.018
$U_{W,\text{installed}} = 1.02 \text{ W}/(\text{m}^2 \text{ K})$		$U_{W,\text{installed}} = 1.03 \text{ W}/(\text{m}^2 \text{ K})$		$U_{W,\text{installed}} = 1.02 \text{ W}/(\text{m}^2 \text{ K})$	

Frame values			Frame width b_f mm	U -value frame U_f W/(m ² K)	Ψ -glazing edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Mullion 2 casements	(2M1)		129	1.04	0.030	0.69
Bottom	(OB1)		108	1.00	0.029	0.70
Top	(OH1)		108	1.00	0.029	0.70
Lateral	(OJ1)		108	1.00	0.029	0.70
Spacer: Technoform-Spacer SP16			Secondary seal: Silicone			

