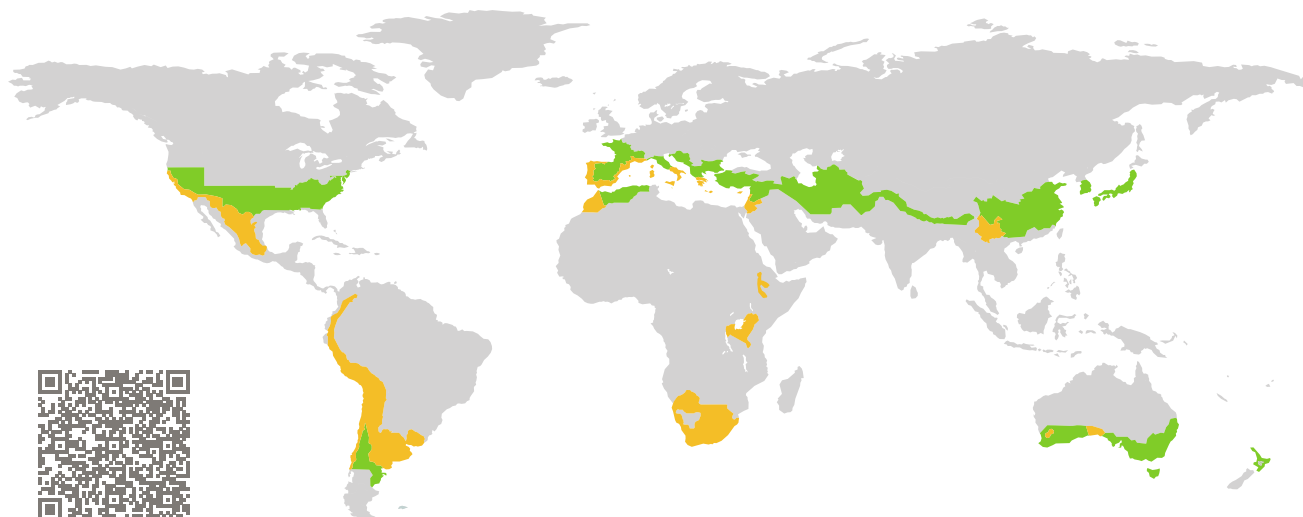


CERTIFICATE

Certified Passive House Component

Component-ID 1656wi04 valid until 31st December 2023

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

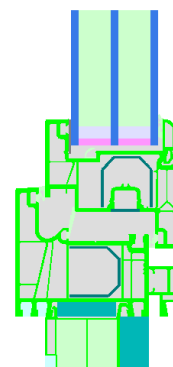


Category: **Window Frame**
Manufacturer: **GEALAN Fenster Systeme GmbH,
Santa Pola-Alicante,
Spain**
Product name: **Certification LINEAR**

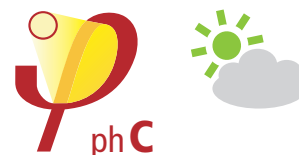
**This certificate was awarded based on the following
criteria for the warm, temperate climate zone**

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

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



warm, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute

Passive House
efficiency class

phE

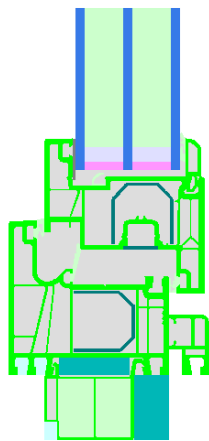
phD

phC

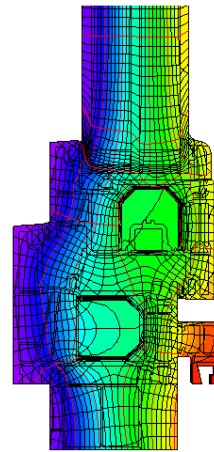
phB

phA

www.passivehouse.com



Calculation model



Isothermal

Description

PVC frame insulated EPS-foam, 0.035W/(mK). Frame 7001 with reinforcement 7730 and bottom frame extension 7202 IKD, Profil frame inside 5261, mullion 7060 with reinforcement 7732, sash 7072 STV with reinforcement 7730. Pane thickness: 48 mm (4/18/4/18/4), rebate depth: 14 mm. Spacer: SWISSPACER Ultimate. Maximum window size up to 30 kg/m² glass weight: White and Colored sash 7072 STV 7730 0.90 * 2.1 m.

Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with $U_g = 0.90 \text{ W}/(\text{m}^2 \cdot \text{K})$. If a higher quality glazing is used, the window U-values will improve as follows:

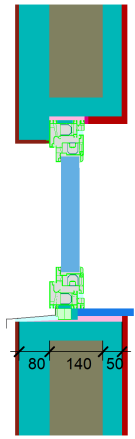
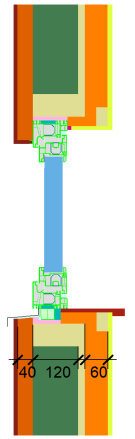
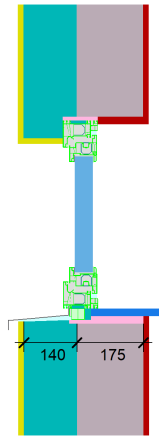
Glazing	$U_g =$	0.90	0.80	0.70	0.55	$\text{W}/(\text{m}^2 \cdot \text{K})$
		↓	↓	↓	↓	
Window	$U_W =$	1.00	0.94	0.87	0.76	$\text{W}/(\text{m}^2 \cdot \text{K})$







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

Formwork blocks (operable)	Lightweight timber (operable)	Exterior insulation and finishing system (EIFS) (operable)
$U_{Wall} = 0.25 \text{ W}/(\text{m}^2 \cdot \text{K})$	$U_{Wall} = 0.19 \text{ W}/(\text{m}^2 \cdot \text{K})$	$U_{Wall} = 0.23 \text{ W}/(\text{m}^2 \cdot \text{K})$
		
$\Psi_{install}$ W/(m · K)	$\Psi_{install}$ W/(m · K)	$\Psi_{install}$ W/(m · K)
Top -0.006	Top 0.004	Top 0.007
Side -0.006	Side 0.004	Side 0.007
Bottom 0.017	Bottom 0.013	Bottom 0.039
$U_{W,installed} = 1.00 \text{ W}/(\text{m}^2 \cdot \text{K})$	$U_{W,installed} = 1.02 \text{ W}/(\text{m}^2 \cdot \text{K})$	$U_{W,installed} = 1.05 \text{ W}/(\text{m}^2 \cdot \text{K})$

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 1 casement (1M1) 	134	1.22	0.027	0.66
Mullion 2 casements (2M1) 	170	1.23	0.027	0.65
Flying Mullion (FM1) 	152	1.22	0.027	0.63
Bottom (OB1) 	140	0.99	0.027	0.69
Top (OH1) 	110	1.02	0.028	0.68
Lateral (OJ1) 	110	1.02	0.028	0.68
Spacer: SWISSPACER ULTIMATE		Secondary seal: Polysulfid		

