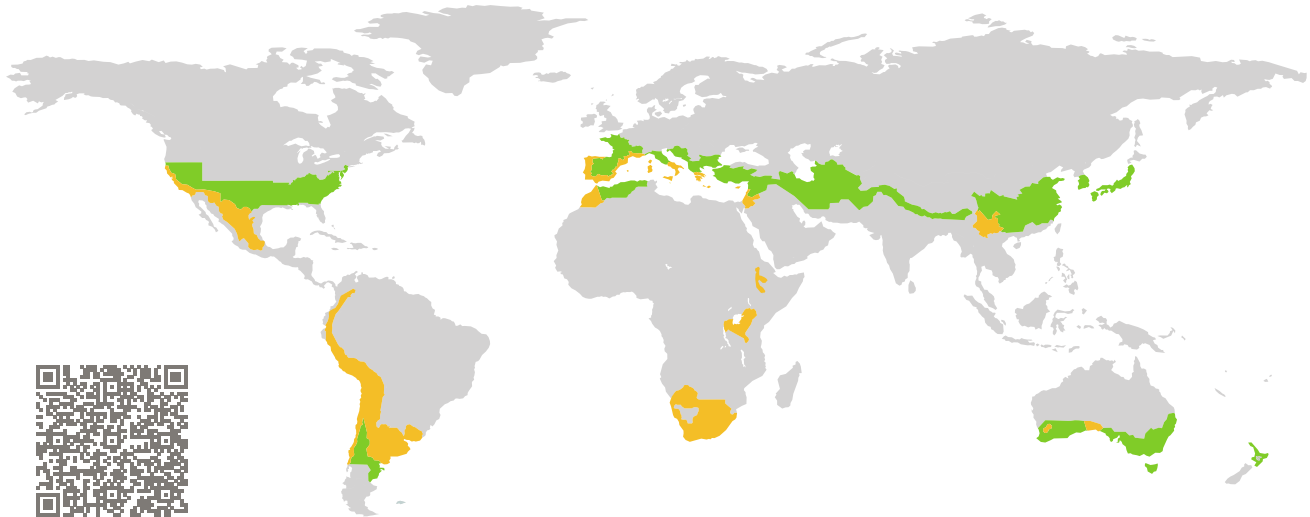


CERTIFICATE

Certified Passive House Component

Component-ID 2125wi04 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

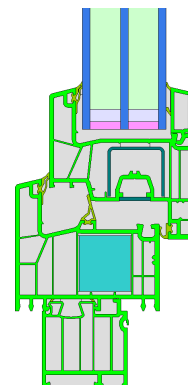


Category: **Window Frame**
Manufacturer: **SIP Productos Industriales S.A.,
Rabade (Lugo),
Spain**
Product name: **greenEvolution MD**

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



warm, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute

Passive House
efficiency class

phE

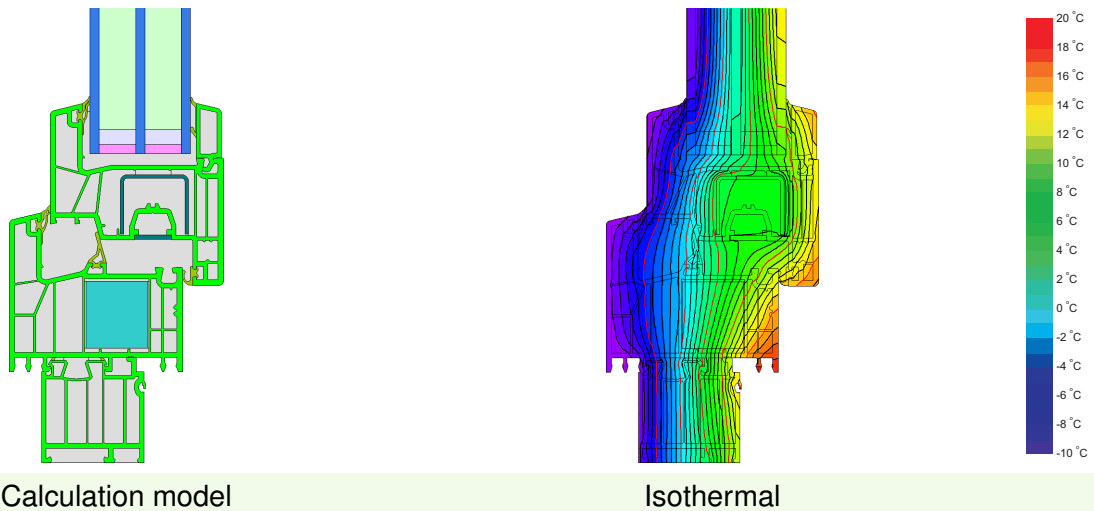
phD

phC

phB

phA

www.passivehouse.com



Calculation model Isothermal

Description

PVC frame with steel reinforcement in the sash. Maximum size according to the size table in the technical documents. Insulation insert made of recyclable structural foam (0.042 W/(mK)) in the frame. Pane thickness: 44 mm (4/16/4/16/4), rebate depth: 22 mm.

Explanation

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

Glazing	$U_g =$	0.90	0.70	0.68	0.64	W/(m ² K)
		↓	↓	↓	↓	
Window	$U_W =$	1.00	0.87	0.86	0.83	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

Lightweight timber (operable)		Ventilated facade		Exterior insulation and finishing system (EIFS) (operable)	
$U_{Wall} = 0.18 \text{ W}/(\text{m}^2 \text{ K})$		$U_{Wall} = 0.22 \text{ W}/(\text{m}^2 \text{ K})$		$U_{Wall} = 0.23 \text{ W}/(\text{m}^2 \text{ K})$	
<p>Exterior plaster 1.0 W/(mK) Wood fibre board 0.050 W/(mK) Cellulose 0.040 W/(mK) OSB-board 0.13 W/(mK) Insulation 0.040 W/(mK) Plasterboard 0.25 W/(mK)</p>		<p>Ventilated facade – substructure Mineral wool 0.035 W/(mK) Concrete 2.3 W/(mK) Interior plaster 0.57 W/(mK)</p>		<p>Exterior plaster 1.0 W/(mK) EPS 0.035 W/(mK) Adhesive 0.70 W/(mK) Sand-lime brick 1.0 W/(mK) Interior plaster 0.57 W/(mK)</p>	
		<p>Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window</p>		<p>Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window</p>	
$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)
Top	0.015	Top	0.004	Top	0.003
Side	0.015	Side	0.004	Side	0.003
Bottom	0.018	Bottom	0.023	Bottom	0.022
$U_{W,installed} = 1.05 \text{ W}/(\text{m}^2 \text{ K})$		$U_{W,installed} = 1.03 \text{ W}/(\text{m}^2 \text{ K})$		$U_{W,installed} = 1.03 \text{ W}/(\text{m}^2 \text{ K})$	

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)	186	1.12	0.025	0.69
Bottom	(OB1)	158	1.12	0.025	0.72
Top	(OH1)	118	0.99	0.025	0.72
Lateral	(OJ1)	118	0.99	0.025	0.72
Spacer: SWISSPACER ULTIMATE			Secondary seal: Polysulfide		

