

# CERTIFICATE

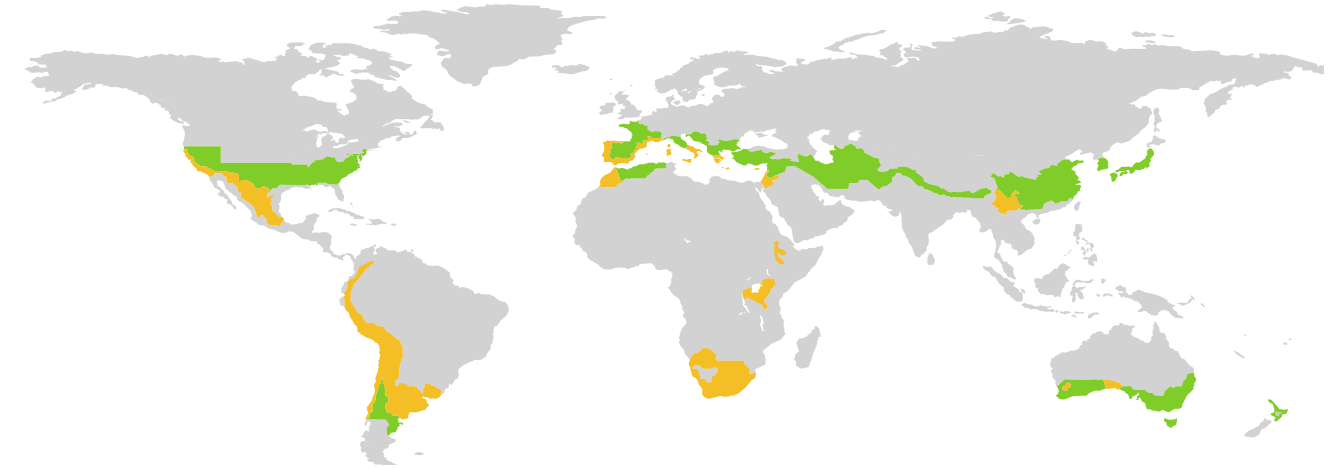
Certified Passive House Component

ID: 1356cs04 valid until 31. December 2019

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## Additional thermal bridges

Name	Thermal bridge	$f_{Rsi}$	Description
EWCE02	$\Psi = 0,043 \text{ W/(mK)}$	0,95	Ceiling connection - variant
FRRP02	$\Psi = -0,028 \text{ W/(mK)}$	0,87	Parapet connection - variant
ROVE02	$\Psi = -0,078 \text{ W/(mK)}$	0,86	Roof verge - variant



Category	<b>Wall system   Steel construction</b>
Manufacturer	<b>JOAQUÍN HERNÁNDEZ GARCÍA SL COBATILLAS - MURCIA SPAIN</b>
Product name	<b>BLUEFACE</b>

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

### Hygiene criterion

The minimum temperature factor of the interior surfaces is

$$f_{Rsi=0,25m^2K/W} \geq 0,65$$

### Comfort criterion

The U-value of the installed windows is

$$U_{W,i} \leq 1,05 \text{ W/(m}^2\text{K)}$$

### Efficiency criteria

Heat transfer coefficient of building envelope

$$U \cdot f_{PHI} \leq 0,25 \text{ W/(m}^2\text{K)}$$

Temperature factor of opaque junctions

$$f_{Rsi=0,25m^2K/W} \geq 0,82$$

Thermal bridge-free design for key connection details

$$\Psi \leq 0,01 \text{ W/(mK)}$$

An airtightness concept for all components and connection details was provided

warm, temperate climate



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COMPONENT**

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**Opaque building envelope**

BlueFace is an enclosure system for homes in the category of lightweight façade, curtain wall, airtight, modular, self-supporting. It is designed in three modular layers. The inner layer consists of a metal substructure of laminated steel fixed to the main structure and G-EPS insulation (0,033 W/mK). The outer leaf consists of a 6 cm large format porcelain sandwich panel, interior technical panel and intermediate insulation (also G-EPS, 0,033 W/mK), all assembled to a tongue and groove aluminium frame with sealed connection. The inner leaf consists of a sandwich of 11 cm of technical board on both sides with intermediate insulation (also G-EPS, 0,033 W/mK) and airtight connection to the interior. As a final closure for the interior, a layer of plasterboard finish is installed, thus ensuring the closure of all connections. As this certification pertains only to the external wall, point thermal bridges caused by structural columns were not included and must be considered separately.

**Windows**

Thermal simulations have been carried out with the SL82 window from Vekoplast Iberica, which has a  $U_w$  value of 0,97 W/m<sup>2</sup>K (limiting value for the warm-temperate climate zone = 1,00 W/m<sup>2</sup>K) with  $U_g$  of 0,90 W/m<sup>2</sup>K. The following values were used: frame thickness = 124 mm,  $U_f$  = 0,95 W/m<sup>2</sup>K,  $\Psi_i$  (glazing edge) = 0,024 W/mK (bottom), 0,023 W/mK (top / side). The  $U_w$ -value of the window of standard value (1,23 m wide, 1,48 m tall) can increase by 0,05 W/m<sup>2</sup>K through installation, i.e.  $U_w$  (installed) = 1,05 W/m<sup>2</sup>K.

**Airtightness concept**

Airtightness is ensured by a combination of airtight membrane and tape to the exterior of the innermost gypsum board. Windows and doors should be installed using flexible gaskets and connected to the airtight membrane using suitable tape. Penetrations in the form of cables, plumbing and ventilation ducts should be sealed using suitable gaskets and/or tape.

**Explanatory notes**

The Passive House Institute has defined international component criteria for seven climate zones based on hygiene, comfort and affordability criteria. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. Their use might make economic sense in certain circumstances.

Thermal bridge not calculated  
Criteria achieved

Efficiency criteria not achieved  
Hygiene or comfort criterion not achieved

