

# CERTIFICATE

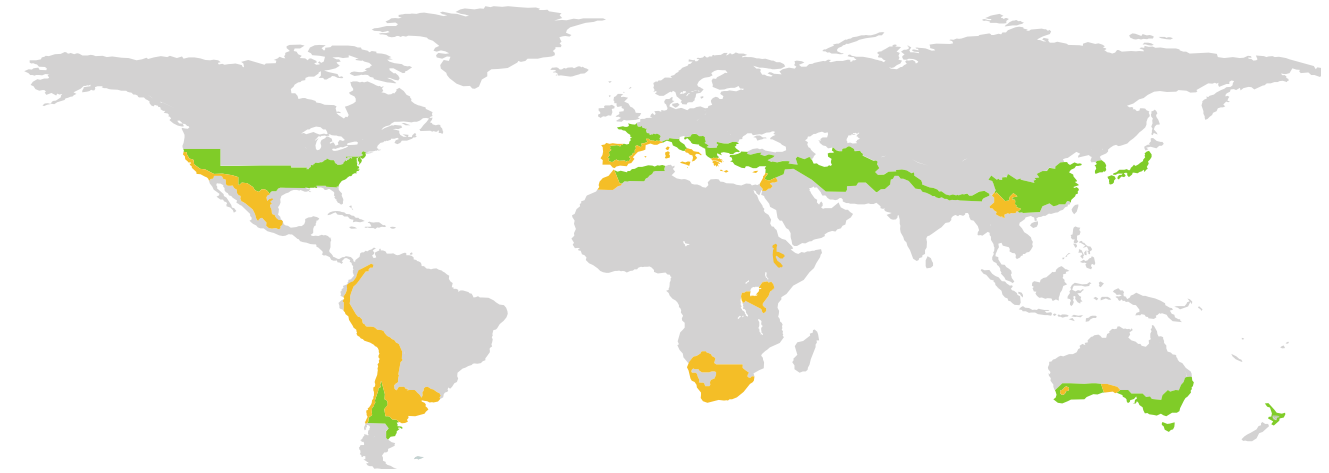
Certified Passive House Component

ID: 0995cs04 valid until 31. December 2016

Passive House Institute  
Dr. Wolfgang Feist  
64342 Darmstadt  
GERMANY

## Additional thermal bridges

Name	Thermal bridge	$f_{Rsi}$	Description
ROPA01	X= 0,005 W/K	1,00	Steel fastening screw through roof build-up
EWPA01	X= 0,001 W/K	0,98	Steel fastening screw through external wall build-up



Category	<b>Construction system   Lightweight timber construction</b>
Manufacturer	<b>TimberOnLive Argame, Asturias SPAIN</b>
Product name	<b>TimberOnLive S. L.</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  $U_{W,i} \leq 1,05 \text{ W}/(\text{m}^2\text{K})$

### Efficiency criteria

Heat transfer coefficient of building envelope  $U \cdot f_{PHI} \leq 0,30 \text{ W}/(\text{m}^2\text{K})$

Temperature factor of opaque junctions  $f_{Rsi=0,25m^2K/W} \geq 0,82$

Thermal bridge-free design for key connection details  $\Psi \leq 0,01 \text{ W}/(\text{m}^2\text{K})$

An airtightness concept for all components and connection details was provided



**Opaque building envelope**

TimberOnLive is a timber frame construction system, comprising 60mm thick solid timber wall panels and 140mm x 240mm structural timber beams. Timber battens are used to form service cavities in the external walls and ground floor, as well as the ventilated external facade. The construction uses traditional wood-to-wood notch joints. The system is insulated both internally and externally with a combination of mineral wool and EPS products. Both external wall and roof build-ups are mechanically fastened using long steel screws, for which Chi-value calculations have been undertaken to exclude the possibility of point thermal-bridging. The system has undergone analysis by the Passive House Institute against the thermal performance criteria for warm-temperate climate zones, and has been deemed suitable for the construction of passive houses in warm-temperate and warm climates.

**Windows**

Analysis was undertaken using a generic, passive house-standard timber-framed, triple-glazed window unit, featuring Super Spacer Triseal thermal values for the spacer and a polysulfide secondary seal. The calculations undertaken demonstrate that the window installation locations are suited to the warm-temperate climate zone, with no risk of surface condensation and subsequent mould growth.

**Airtightness concept**

The airtightness of the construction system is achieved through the use of an airtight membrane fitted to the exterior of the timber frame, beneath the external layer of EPS insulation. For the junctions between membrane sections and connections to openings and the floor slab, specialist air tightness tape is to be used.

**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

