

# CERTIFICATE

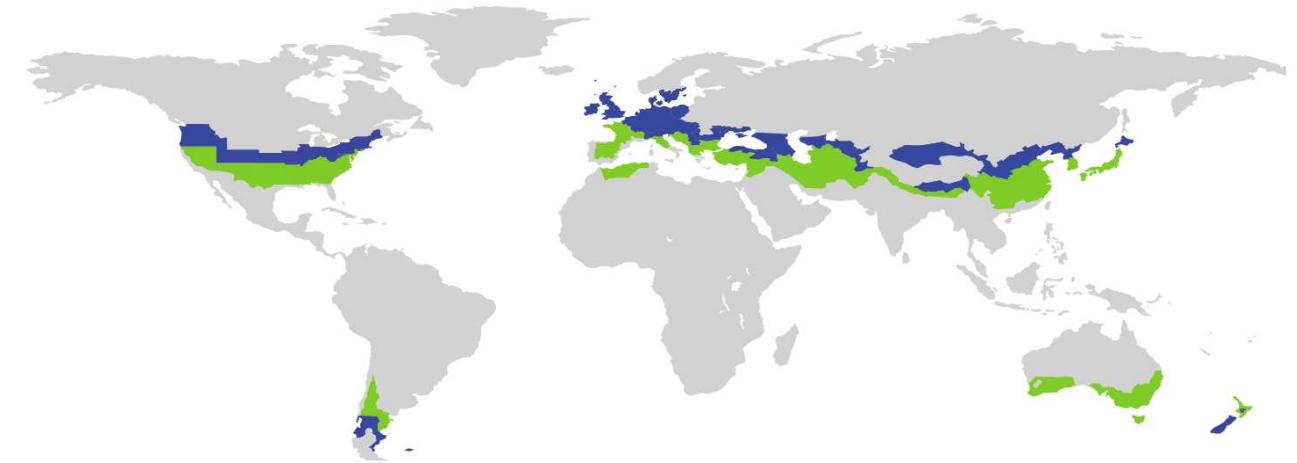
Certified Passive House Component

ID: 1273cs03 valid until 31. December 2019

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## Additional thermal bridges

Name	Thermal bridge	$f_{Rsi}$	Description
ROPA01	X= 0 W/K	0,97	Plastic insulation fastener through roof build-up
EWPA01	X= 0 W/K	0,97	Plastic insulation fastener through external wall build-up



Category	<b>Construction system   Insulated formwork blocks</b>
Manufacturer	<b>EZIBS Co. Ltd. Pyeongchang-gun South Korea</b>
Product name	<b>EZBlock Energy Zero Insulation Block System</b>

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

### Hygiene criterion

The minimum temperature factor of the interior surfaces is  $f_{Rsi=0,25m^2K/W} \geq 0,70$

### Comfort criterion

The U-value of the installed windows is  $U_{W,i} \leq 0,85 \text{ W}/(\text{m}^2\text{K})$

### Efficiency criteria

Heat transfer coefficient of building envelope  $U \cdot f_{PHI} \leq 0,15 \text{ W}/(\text{m}^2\text{K})$

Temperature factor of opaque junctions  $f_{Rsi=0,25m^2K/W} \geq 0,86$

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

An airtightness concept for all components and connection details was provided



**Opaque building envelope**

The EZBlock Energy Zero Insulation Block System is a monolithic construction system insulated with EPS and XPS. The walls comprise 200mm reinforced concrete with 230mm EPS to the outside; the roof 150mm of reinforced concrete with 250mm of EPS to the outside; the floor is 300mm of reinforced concrete with 200mm of XPS below and 40mm of EPS above. The wall and roof insulation is fixed using steel and plastic connectors, the thermal effect of which has been taken into account in the calculations. The system is designed to be used with a rainscreen facade, for which additional point thermal bridges may need to be accounted for in the PHPP. The system has undergone analysis by the Passive House Institute against the thermal performance criteria for construction systems, and has been deemed suitable for the construction of passive houses in both cool-temperate and warm-temperate climates.

**Windows**

Analysis was undertaken using the Softline 82 MR PSR PVC window frame from VEKA Plastics (Shanghai) Co. Ltd., featuring SWISSPACER Ultimate thermal values for the spacer and a butyl secondary seal. The calculations undertaken demonstrate that the window installation locations are suited to the cool-temperate climate zone, with no risk of surface condensation and subsequent mould growth.

**Airtightness concept**

As a monolithic construction system of reinforced concrete poured in-situ for all construction elements (walls, roof and floor), EZBlock is inherently airtight; junctions around window reveals and openings are sealed using specialist air tightness tapes.

**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

