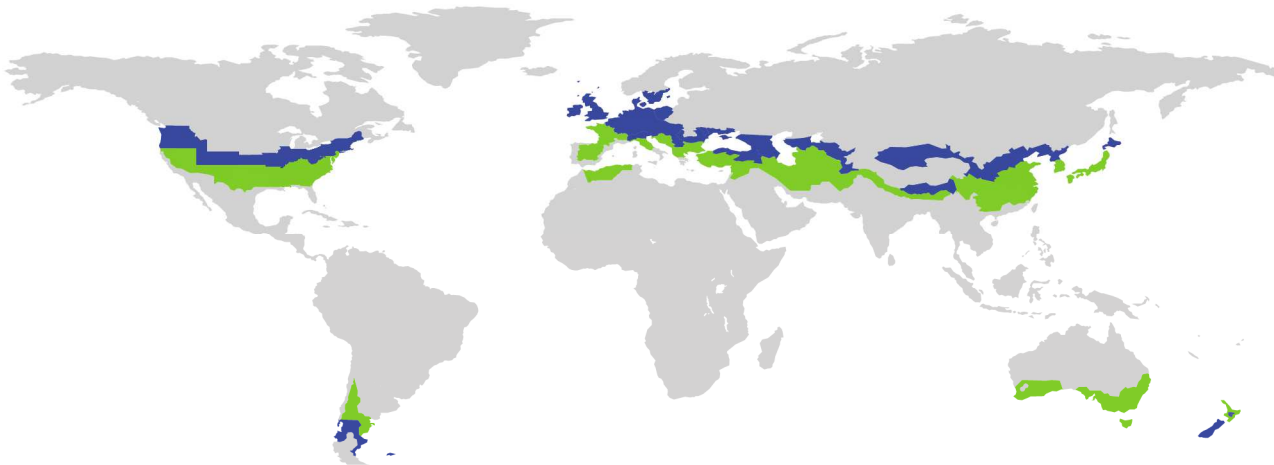


CERTIFICATE

Certified Passive House Component

ID: 0837ws03 valid until 31. December 2018

Passive House Institute
Dr. Wolfgang Feist
64342 Darmstadt
GERMANY



Catgory	Construction system Lightweight timber Construction
Manufacturer	pro Passivhausfenster GmbH Oberaudorf GERMANY
Product name	smartshell timberframe G

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 $U_{w,i} \leq 0.85 \text{ W/(m}^2\text{K)}$

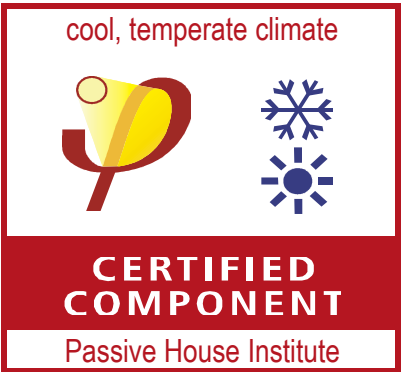
Efficiency criteria

Heat transfer coefficient of building envelope $U \cdot f_{PHI} \leq 0.15 \text{ W/(m}^2\text{K)}$

Temperaturfactor of opaque junctions $f_{Rsi=0,25m^2K/W} \geq 0.86$

Thermal bridge free design for key connection details $\Psi \leq 0.01 \text{ W/(m}^2\text{K)}$

An airtightness concept for all components and connection details was provided.



cool, temperate climate

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