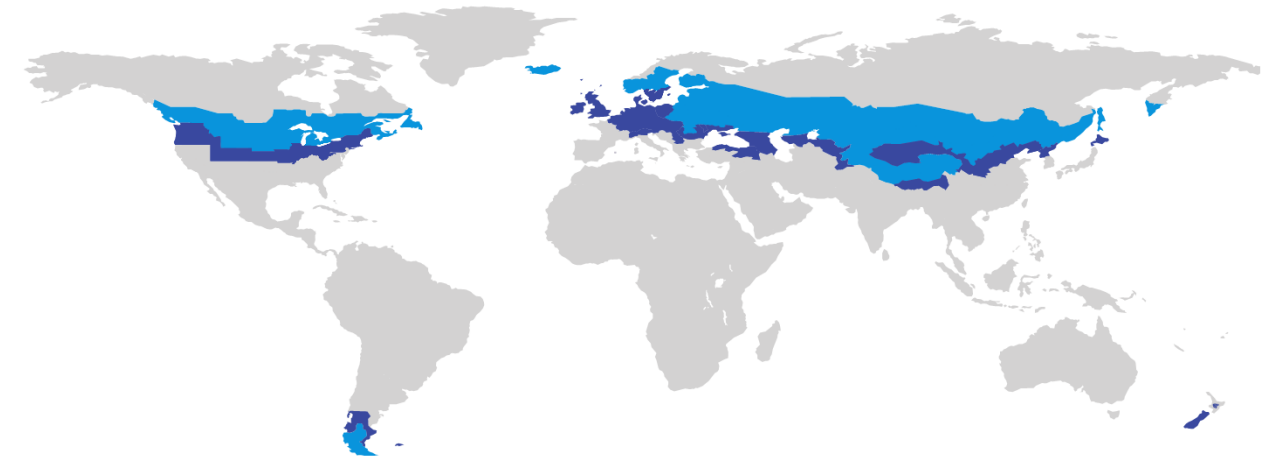


# CERTIFICATE

Certified Passive House Component

ID: 1070cs02 valid until 31. December 2025

Passive House Institute  
Dr. Wolfgang Feist  
64342 Darmstadt  
GERMANY



Category **Construction system | Solid timber construction**  
Manufacturer **pro Passivhausfenster GmbH  
Oberaudorf  
GERMANY**  
Product name **smartshell solid timber**

**This certificate for the cold climate zone was awarded based on the following criteria**

### Hygiene criterion

The minimum temperature factor of the interior surfaces is

$$f_{R_{si}=0,25m^2K/W} \geq 0,75$$

### Comfort criterion

The U-value of the installed windows is

$$U_{w,i} \leq 0,65 \text{ W}/(\text{m}^2\text{K})$$

### Efficiency criteria

Heat transfer coefficient of building envelope

$$U \cdot f_{PHI} \leq 0,12 \text{ W}/(\text{m}^2\text{K})$$

Temperaturfactor of opaque junctions

$$f_{R_{si}=0,25m^2K/W} \geq 0,88$$

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.



