

CERTIFICATE

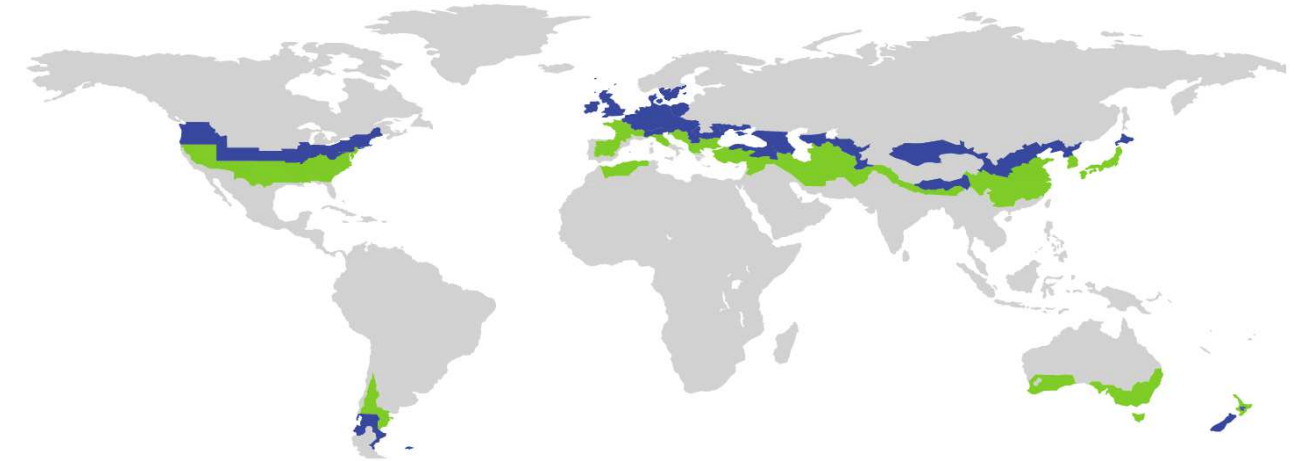
Certified Passive House Component

ID: 1170cs03 valid until 31. December 2021

Passive House Institute
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Additional thermal bridges

Name	Thermal bridge	f_{Rsi}	Description
EWPA01	X= 0,001 W/K	0,96	Steel fastening screw through external wall build-up



Category	Construction system Lightweight timber construction
Manufacturer	Phoenix Haus Colorado 81505 UNITED STATES OF AMERICA
Product name	The Alpha System

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 Phoenix Haus Alpha System is a lightweight timber frame construction system, insulated with cellulose (0,040 W/mK), mineral wool (0,040 W/mK) and wood fiber (0,042 W/mK). The system uses solid timber supports for the external walls and timber I-beams for the roof construction.

The system is intended to be used with a ventilated rainscreen to the exterior; steel fastenings through the exterior insulation have been taken into account in the U-value calculation by means of 3D thermal simulation.

The system has been designed to meet the Passive House Institute criteria for opaque components in the cool-temperate climate zone, and is also suitable for use in the warm-temperate zone.

Windows

Analysis was undertaken using Pro Passivhausfenster GmbH 'Smartwin Compact' timber-aluminum frame, featuring a SuperSpacer Tri-Seal spacer and polysulfide secondary seal. Two window installation types have been calculated, '01' refers to the standard window installation, '02' refers to the glazed door installation, with the installed U-value displayed in the 'window threshold' section.

Airtightness concept

The airtightness of the construction system is achieved through the use of an airtight membrane (Intello Plus), fixed to the inside of the supporting joists and behind the service cavity. Joints are secured with specialist air tightness tape (Tescon Vana). The system also includes a wind- and waterproof membrane, fixed to the outside of the wood fiber insulation, with joints secured as above.

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

