

CERTIFICATE

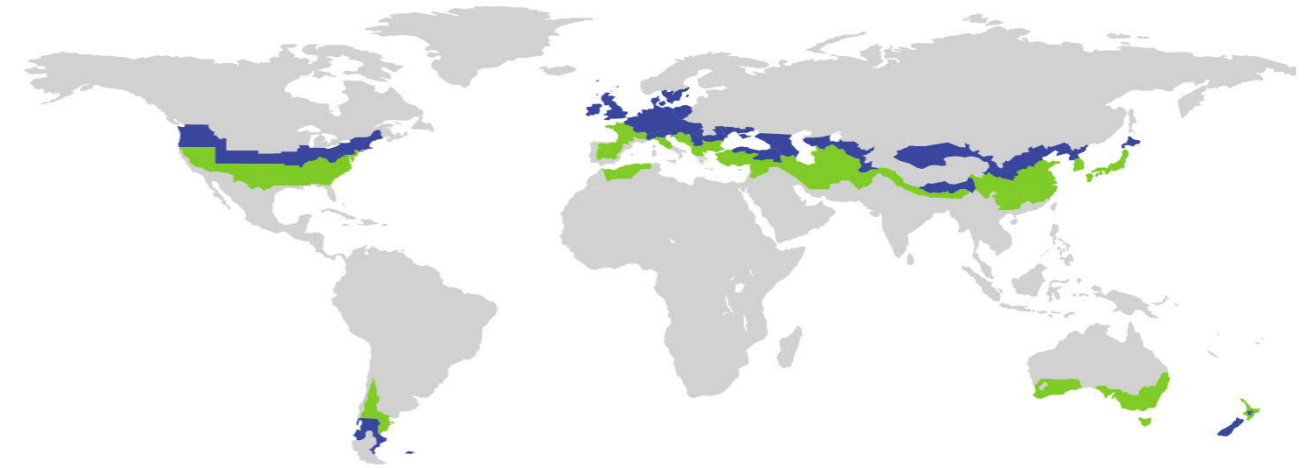
Certified Passive House Component

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Additional thermal bridges

Name	Thermal bridge	f_{Rsi}	Description
EWic2	$\Psi = 0.034 \text{ W/(mK)}$	0,96	Interior corner to neighbor
EWPA	$\Psi = 0.01 \text{ W/(mK)}$	0,93	Exterior wall - Party wall
TCGA	$\Psi = -0.046 \text{ W/(mK)}$	0,91	Top ceiling - Gable wall



Category	Construction system Lightweight timber Construction
Manufacturer	Frame Homes UK Redruth UK
Product name	Frame Ultra

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

$$U * f_{PHI} \leq 0,15 \text{ W/(m}^2\text{K)}$$

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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COMPONENT**

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Opaque building envelop

The system consists of a closed panel timber frame. The wall construction includes a central solid vertical timber stud and mineral wool insulation. The thermal performance is improved with additional mineral wool insulation layers on both sides of this main stud wall. A thermally broken sole plate is provided at the base of each wall panel along with a thermally broken headbinder at the top of each panel.

Two roof options are available: A pitched roof truss with mineral wool insulation laid on top of a flat ceiling. A pitched roof with mineral wool insulation installed between rafters and in an internal service void.

Windows

The PHI example window spruce/fir-integral frame (0,11 W/(mK)) with 48 mm glazing and phA-class spacer was taken into account. The threshold is from fibre glass and timber, no aluminum is used. The window represents a very good standard and leads to low thermal bridges and high inner surface temperatures.

Airtightness concept

The air tightness is provided by 18mm OSB board fixed to the central wall stud. OSB sheets are taped together using air tightness tape. An internal ledger plate is used at intermediate floors allow a continuous air tightness line.

Where insulation is installed on top of the ceiling, An air tightness membrane is stapled (staples are over taped) to the bottom of the roof truss.

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. This use might make sense in certain circumstances.

Thermal bridge not calculated
Criteria achieved

Efficiency criteria not achieved
Hygiene- or comfortcriteria not achieved

