

CERTIFICATE

Certified Passive House Component

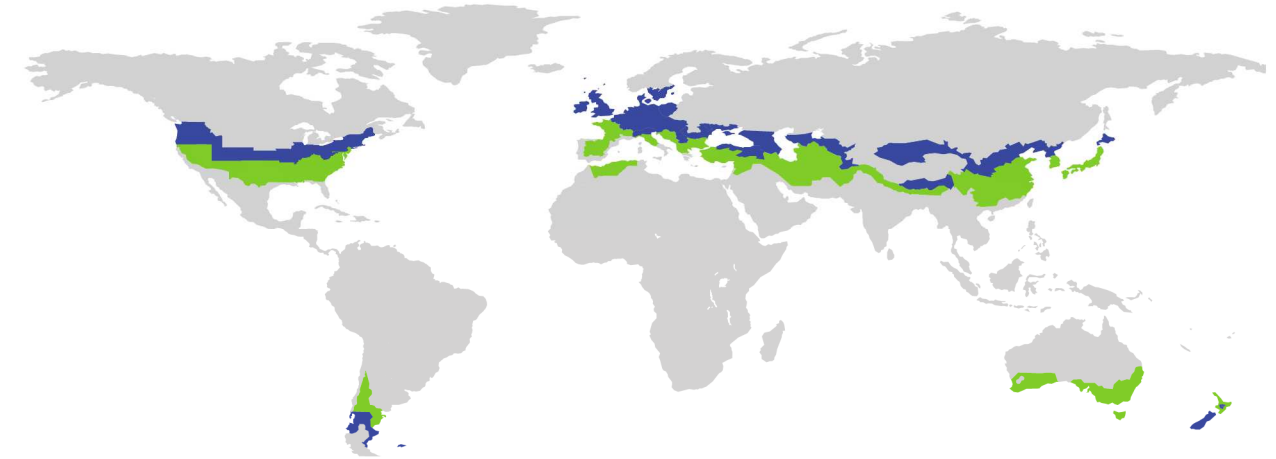
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Passive House Institute

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Category **Construction system | Lightweight timber Construction**
Manufacturer **ECOCOR High Performance Buildings
Searsmont**
Product name **UNITED STATES OF AMERICA
ECOCOR Passiv**

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

$$f_{R_{si}=0,25m^2K/W} \geq 0.70$$

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

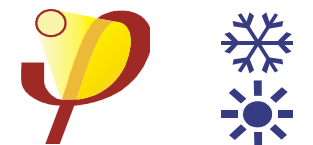
$$f_{R_{si}=0,25m^2K/W} \geq 0.86$$

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.

cool, temperate climate



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COMPONENT**

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Opaque building envelope

The construction system is founded on a concrete floor slab with perimeter insulation.

The walls are built as a double shell construction. The inner, load bearing layer is made with 1½" by 3½" timber beams with a spacing of 2', the space is filled with mineral wool, the wall is on the room-side clad with gypsum board, outside with OSB-board. In front of this board, the second shell is mounted. The gap between 12" TGI-beams is filled with cellulose and is closed by a membrane on the outside.

The roof construction is similar to the wall assembly but with a 9¼" internal layer.

Windows

The certification were done with tow different windows of the company M-Sora:

Natura optimo: Uninsulated timber window with 40 mm triple glazing and class pHA spacer bar with PU secondary seal.

Natura passiv: Insulated timber window with 50 mm triple glazing and class pHA spacer bar with PU secondary seal. For this window, the threshold for the terrace door was calculated. Due to an alu-minum element, the threshold do not catch the criteria. Because of the lack of the availability of better alternatives, the certification is awarded anyway as an exception.

Airtightness concept

The airtightness layer is the OSB-board outside the loadbearing layer. The OSB-boards are connected via adhesive airtightness tapes. The windows are too connected by adhesive tapes.

Care should be taken by choosing the OSB-board, for not every board is airtight enough.

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 driteria not achieved
Hygiene- or comfortcriterion not achieved

