# CERTIFICATE

**Certified Passive House Component**

ID: 0830cs03 valid until 31. December 2025

Passive House Institute
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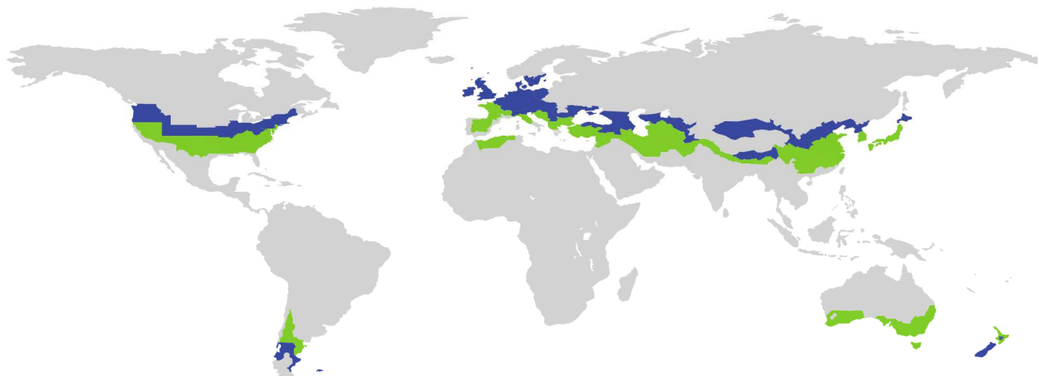

| | |
|---|---|
| Catregory | **Construction system \| Lightweigt timber Construction** |
| Manufacturer | **ECO HOMES**<br>**Cork**<br>**Ireland** |
| Product name | **ECO PASSIVE HOUSE** |

**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** W/(m²K) |

### Efficiency criteria

| | | |
|---|---|---|
| Heat transfer coefficient of building envelope | $U*f_{PHI} \leq$ | **0.15** W/(m²K) |
| 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** W/(m²K) |

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

cool, temperate climate

CERTIFIED COMPONENT
Passive House Institute

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## Opaque building envelop

The construction system is built on a concrete floor slab supported completely with EPS insulation.
The timber frame walls are constructed with studs at 60cm centres with OSB fixed on the inside and wood fibre board and breather membrane fixed to the outside. The service cavity is formed with 47x47mm battens with mineral insulation between and gypsum board on the room side. The rain-screen cladding is fixed on battens which are fixed through to the timber studs. The upper floors are formed with metal web joists with OSB deck and gypsum screed. The roof construction is formed with rafters at 60cm spacings with cellulose insula-tion between, breather membrane above with bat-tens and roof tiles. An air-tightness membrane is fitted below with cross battens and gypsum board over.

## Windows

The certification was done with the window smart-win solar i, which is a very slim phA-class window with triple 18 mm argon glazing, Swisspacer Ulti-mate spacer bar with PU secondary seal. A special feature of smatwin solar i is, that the reveal be-comes part of the windows frame.
In No. 01, the window is installed at the outer wood-fibre board.
In No. 02, it is installed deeper in the wall, see certification report.

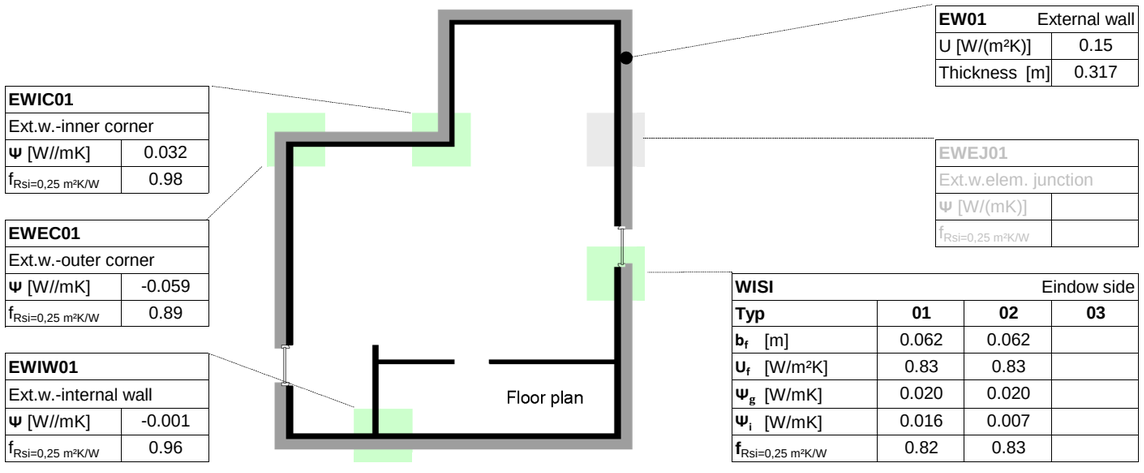
## Airtightness concept

The airtightness layer in the walls is OSB board. The OSB boards are sealed together and to the windows with an air-tightness tape. The OSB board must be of sufficient air-tightness. An airtightness membrane is fitted to the ceiling with air-tightness tape at all junctions and connections.

## Explainatory 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
Efficieny driteria not achieved
Hygiene- or comfortcriterion not achieved




| EWIC01 | |
|---|---|
| Ext.w.-inner corner | |
| Ψ [W//mK] | 0.032 |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.98 |

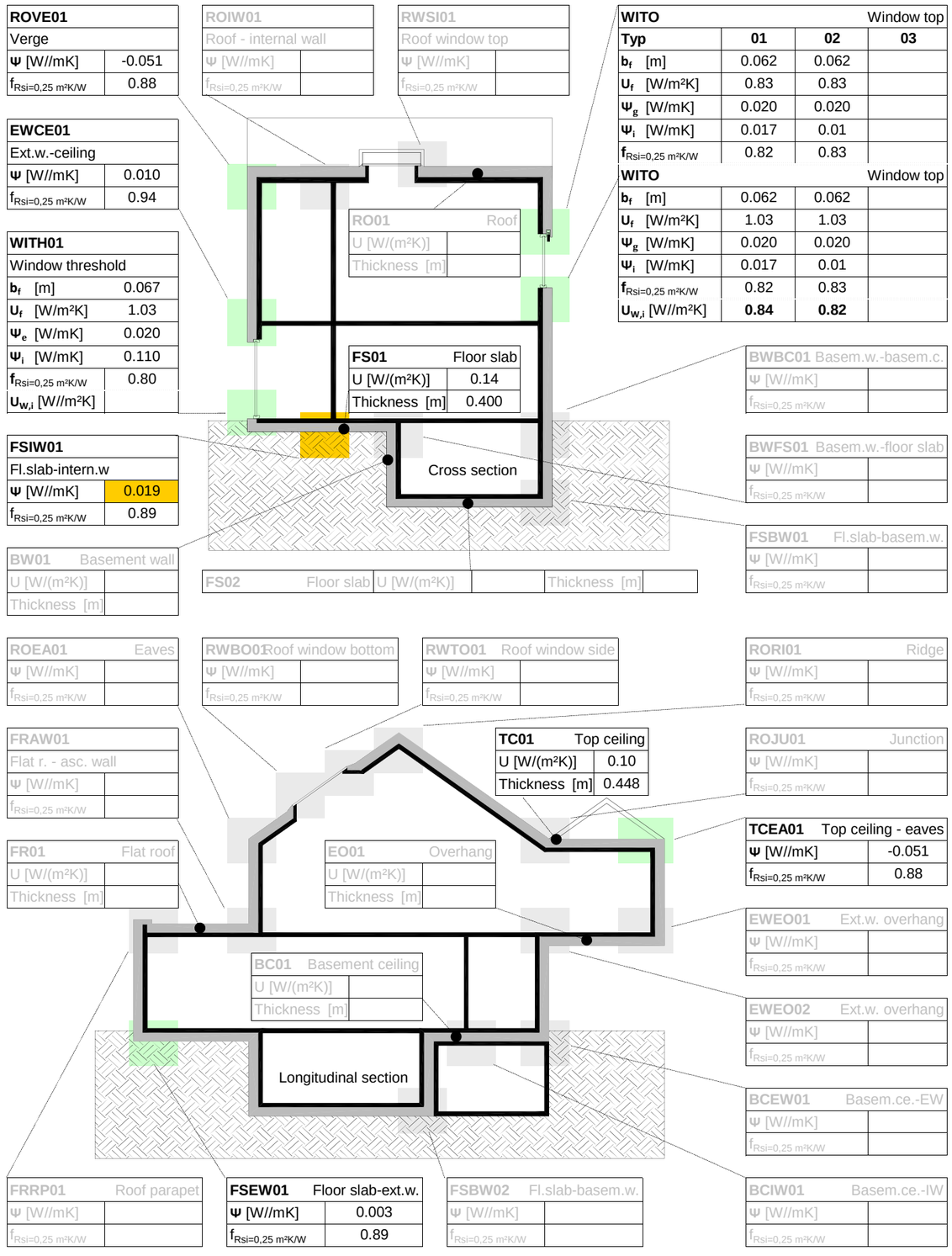
| EWEC01 | |
|---|---|
| Ext.w.-outer corner | |
| Ψ [W//mK] | -0.059 |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.89 |

| EWIW01 | |
|---|---|
| Ext.w.-internal wall | |
| Ψ [W//mK] | -0.001 |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.96 |

| EW01 | External wall |
|---|---|
| U [W/(m²K)] | 0.15 |
| Thickness [m] | 0.317 |

| EWEJ01 | |
|---|---|
| Ext.w.elem. junction | |
| Ψ [W/(mK)] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| WISI | | | Eindow side |
|---|---|---|---|
| Typ | 01 | 02 | 03 |
| $b_f$ [m] | 0.062 | 0.062 | |
| $U_f$ [W/m²K] | 0.83 | 0.83 | |
| $Ψ_g$ [W/mK] | 0.020 | 0.020 | |
| $Ψ_i$ [W/mK] | 0.016 | 0.007 | |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.82 | 0.83 | |




| ROVE01 | |
|---|---|
| Verge | |
| Ψ [W//mK] | -0.051 |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.88 |

| ROIW01 | |
|---|---|
| Roof - internal wall | |
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| RWSI01 | |
|---|---|
| Roof window top | |
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| WITO | | | Window top |
|---|---|---|---|
| Typ | 01 | 02 | 03 |
| $b_f$ [m] | 0.062 | 0.062 | |
| $U_f$ [W/m²K] | 0.83 | 0.83 | |
| $Ψ_g$ [W/mK] | 0.020 | 0.020 | |
| $Ψ_i$ [W/mK] | 0.017 | 0.01 | |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.82 | 0.83 | |

| WITO | | | Window top |
|---|---|---|---|
| $b_f$ [m] | 0.062 | 0.062 | |
| $U_f$ [W/m²K] | 1.03 | 1.03 | |
| $Ψ_g$ [W/mK] | 0.020 | 0.020 | |
| $Ψ_i$ [W/mK] | 0.017 | 0.01 | |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.82 | 0.83 | |
| $U_{w,i}$ [W//m²K] | **0.84** | **0.82** | |

| RO01 | Roof |
|---|---|
| U [W/(m²K)] | |
| Thickness [m] | |

| FS01 | Floor slab |
|---|---|
| U [W/(m²K)] | 0.14 |
| Thickness [m] | 0.400 |

| WITH01 | |
|---|---|
| Window threshold | |
| $b_f$ [m] | 0.067 |
| $U_f$ [W/m²K] | 1.03 |
| $Ψ_e$ [W/mK] | 0.020 |
| $Ψ_i$ [W/mK] | 0.110 |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.80 |
| $U_{w,i}$ [W//m²K] | |

| FSIW01 | |
|---|---|
| Fl.slab-intern.w | |
| Ψ [W//mK] | 0.019 |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.89 |

| BW01 | Basement wall |
|---|---|
| U [W/(m²K)] | |
| Thickness [m] | |

| FS02 | Floor slab | U [W/(m²K)] | | Thickness [m] | |
|---|---|---|---|---|---|

| BWBC01 | Basem.w.-basem.c. |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| BWFS01 | Basem.w.-floor slab |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| FSBW01 | Fl.slab-basem.w. |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| ROEA01 | Eaves |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| RWBO01 | Roof window bottom |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| RWTO01 | Roof window side |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| RORI01 | Ridge |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| FRAW01 | |
|---|---|
| Flat r. - asc. wall | |
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| TC01 | Top ceiling |
|---|---|
| U [W/(m²K)] | 0.10 |
| Thickness [m] | 0.448 |

| ROJU01 | Junction |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| TCEA01 | Top ceiling - eaves |
|---|---|
| Ψ [W//mK] | -0.051 |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.88 |

| FR01 | Flat roof |
|---|---|
| U [W/(m²K)] | |
| Thickness [m] | |

| EO01 | Overhang |
|---|---|
| U [W/(m²K)] | |
| Thickness [m] | |

| EWEO01 | Ext.w. overhang |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| BC01 | Basement ceiling |
|---|---|
| U [W/(m²K)] | |
| Thickness [m] | |

| EWEO02 | Ext.w. overhang |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| BCEW01 | Basem.ce.-EW |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| FRRP01 | Roof parapet |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| FSEW01 | Floor slab-ext.w. |
|---|---|
| Ψ [W//mK] | 0.003 |
| $f_{Rsi=0,25\ m^2K/W}$ | 0.89 |

| FSBW02 | Fl.slab-basem.w. |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |

| BCIW01 | Basem.ce.-IW |
|---|---|
| Ψ [W//mK] | |
| $f_{Rsi=0,25\ m^2K/W}$ | |