

CERTIFICATE

Certified Passive House Component

ID: 0347ws03 valid until 31. December 2018

Passive House Institute

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|--------------|---|
| Category | Construction system Lightweight construction |
| Manufacturer | Metsä Wood Deutschland GmbH Bremen GERMANY |
| Product name | Kerto-Bausystem |

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

$$U_{W,i} \leq 0.85 \text{ W}/(m^2K)$$

Efficiency criteria

Heat transfer coefficient of building envelope

$$U \cdot f_{PHI} \leq 0.15 \text{ W}/(m^2K)$$

Temperaturfactor of opaque junctions

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

Thermal bridge free design for key connection details

$$\Psi \leq 0.01 \text{ W}/(m^2K)$$

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



cool, temperate climate

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Determined values

| Thermal heat transfer coefficient | Dimension [m] | U-Wert [W/(m²K)] |
|--|----------------------|-------------------------|
| EW01 - External Wall | 0.40 | 0.119 |
| EW02 - External Wall | 0.34 | 0.143 |
| EW03 - External Wall | 0.50 | 0.154 |
| RO01 - Roof | 0.36 | 0.134 |
| RO02 - Roof | 0.37 | 0.142 |
| FR01 - Flat Roof | 0.44 | 0.111 |
| BC01 - Basement Ceiling | 0.39 | 0.149 |
| FS01 - Floor Slab | 0.65 | 0.128 |

| Thermal bridge coefficient opaque envelop | fRsi [-] | Ψ [W/(mK)] |
|--|-----------------|-------------------|
| BCEW01 - Basement Ceiling External Wall | 0.97 | -0.048 |
| BCEW02 - Basement Ceiling External Wall | 0.99 | 0.000 |
| FSEW01 - Floor Slab External Wall | 0.97 | -0.029 |
| FSEW02 - Floor Slab External Wall | 0.98 | -0.022 |
| BCEW01 - Basement Ceiling External Wall | 0.97 | -0.044 |
| BCEW02 - Basement Ceiling External Wall | 0.97 | -0.039 |
| EWIC01 - External Wall Inner Corner | 0.98 | 0.025 |
| EWIC02 - External Wall Inner Corner | 0.99 | 0.022 |
| EWEC01 - External Wall Outer Corner | 0.98 | -0.063 |
| EWEC02 - External Wall Outer Corner | 0.99 | -0.055 |
| EWIW01 - External Wall Internal Wall | 1.00 | 0.000 |
| EWIW02 - External Wall Internal Wall | 1.00 | 0.000 |
| EWCE01 - External Wall internal CEiling | 0.98 | 0.000 |
| EWCE02 - External Wall internal CEiling | 0.98 | 0.000 |
| ROEA01 - Roof Eaves | 0.96 | -0.007 |
| ROEA02 - Roof Eaves | 0.96 | -0.008 |
| ROVE01 - Roof Verge | 0.93 | -0.016 |
| ROVE02 - Roof Verge | 0.94 | -0.012 |
| FRRP01 - Flat Roof Roof Parapet | 0.96 | 0.004 |
| FRRP02 - Flat Roof Roof Parapet | 0.96 | 0.007 |
| ROEA03 - Roof Eaves | 0.97 | -0.064 |
| ROEA04 - Roof Eaves | 0.97 | -0.060 |