

# CERTIFICATE

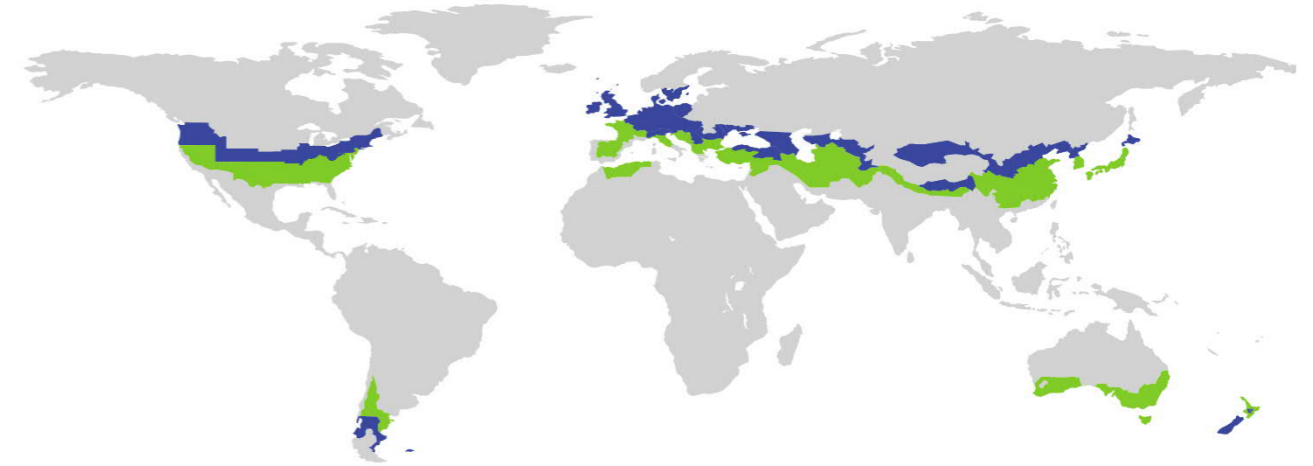
Certified Passive House Component

ID: 1176rs03 valid until 31. December 2018

Passive House Institute  
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## Additional thermal bridges

Name	Thermal bridge	$f_{Rsi}$	Description
MRR101	$\Psi = -0.094 \text{ W/(mK)}$	0.92	Monopitched Roof Ridge
ROPA01	$X = 0.0035 \text{ W/K}$	0.98	Anchor-screw trough external insulation



Category	<b>Roof system   Lightweigt timber Construction</b>
Manufacturer	<b>Braas GmbH Oberursel Deutschland</b>
Product name	<b>Braas Clima Comfort - Neubau Aufsparrendämmung</b>

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 roof windows is  $U_{RW,i} \leq 1.00 \text{ W/(m}^2\text{K)}$

### 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

For certification, a Sand-Lime stone wall with EPS-insulation was taken into account. The roof is insulated by Braas Clima Comfort insulation, applied on top of the rafters, 0.021 W/(m²K), 16 cm. Stainless steel screws, fitted in the rafters, providing protection against wind suction. The thermal bridge effects of these screws were de-termined by 3D thermal flux simulation.

### Windows

The certification was carried out with the roof window Velux GGU -K-008230 with a 3 + 2-glazing and the insulation-set BDX. This is installed in the roof together with an insulation and mounting frame made of PU-foam/- recycling sandwich panels.

### Airtightness concept

The airtight layer is formed by the plastic film DivoDämm membrane 2 2S. The adhesive tape Braas ClimaTape is used to glue the film webs together. Connections to other components as done also with this adhesive tape or the plasto-elastic adhesive DivoDämm Fix Typ A or by over-plastering in combination with a reinforcing steel mesh.

### 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

