

# Certificate

## Certified Passive House Component

for arctic climate, valid until 31.12.2020

Passive House Institute  
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Category: **Attic staircase**  
 Manufacturer: **WIPPRO GmbH**  
**4191 Vorderweissenbach, AUSTRIA**  
 Product name: **KLIMATEC 160**

**This certificate was awarded based on the following criteria:**

A given component size of 1.40 m by 0.70 m results in:

$$U_D = 0.34 \text{ W/(m}^2\text{K)} \leq 0.60 \text{ W/(m}^2\text{K)}$$

Taking the installation situations into account, the component meets the following criterion.

$$U_{D,installed} \leq 0.60 \text{ W/(m}^2\text{K)}$$

Functional requirements of hygiene:

$$f_{Rsi} = 0,25 \text{ m}^2\text{K/W} \geq 0.80$$

Following thermal bridge coefficients  $\Psi$  [W/(mK)] have been determined:

	Wooden- beam ceiling	Concrete-ceiling	Concrete-ceiling with frame
<b>Thermal bridge coefficient <math>\Psi</math> [W/(mK)]</b>	0.04	0.08	0.05
<b><math>U_{D,installed}</math> [W/(m<sup>2</sup>K)]</b>	0.52	0.70	0.57

### Description

Attic stairs of wooden composite material. Trap door with insulation of extruded polystyrene ( $\lambda = 0.035 \text{ W/(mk)}$ ) and coating of sheet metal. 3 - level airtightness-sealing (EPDM, TPE) and surrounding insulation of mineral wool ( $\lambda = 0.035 \text{ W/(mk)}$ ). Installation in arctic climates requires installation frame for concrete-ceilings.

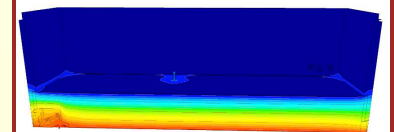
Please ask the manufacturer for a detailed report containing all calculations and results.

[www.passivehouse.com](http://www.passivehouse.com)

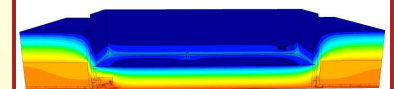
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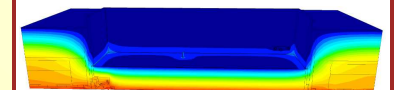
Representation of the Passive House Attic Stairs



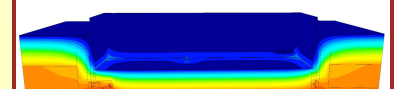
Isothermal map of the Passive House Attic Stairs



Isothermal map installation in concrete ceiling



Isothermal map installation in wooden-beam ceiling



Isothermal map installation in concrete ceiling with installation frame

arctic climate



**CERTIFIED COMPONENT**

Passive House Institute