CERTIFICATE

Certified Passive House Component

ID: 2340bc03 valid until 31. December 2025

Passive House Institute
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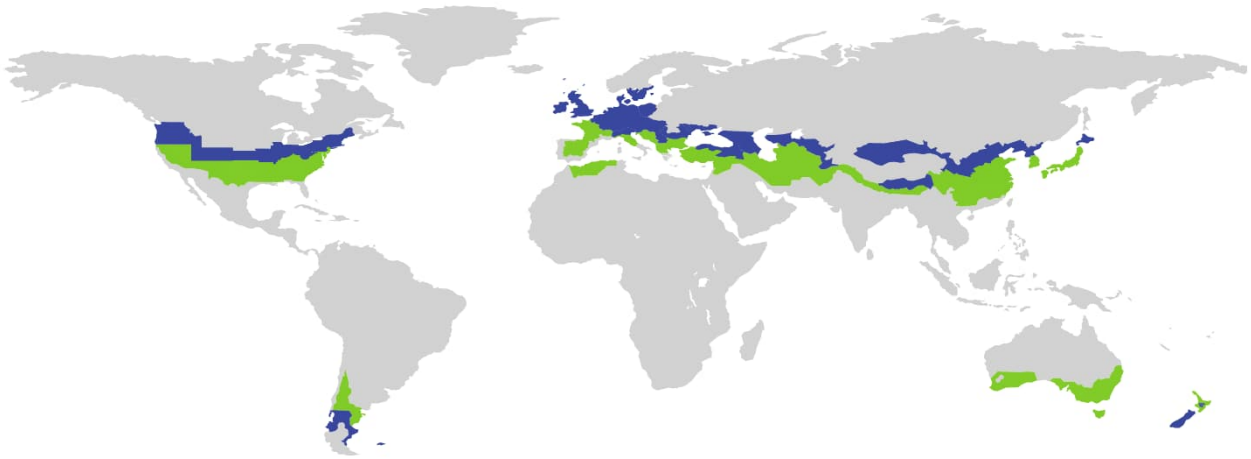
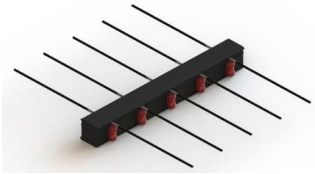
64342 Darmstadt
GERMANY



Category	**Balcony connection**
Type	**Cantilevered**
Manufacturer	**Avermann (Shenyang) Prefabrication Technology Co., Ltd** **110000 Shenyang (安夫曼（沈阳）装配式技术有限公司)** **CHINA**
Product name	**Overhanging structure thermal insulation connector**



This certificate was awarded based on the following criteria for the climate zone

Hygiene and comfort criterion

The minimum temperature factor of the internal surfaces is $f_{Rsi=0.25m^2K/W} \geq$ **0.86**

Energy criterion

The linear thermal bridge loss coefficient is $\Psi \leq$ **0.25** W/(mK)

Efficiency criterion

The heat losses depending on the possible load bearing do not exceed **Eff.t. ≤** **10.00**W/(kNmK)

cool temperate climate

CERTIFIED COMPONENT

Passive House Institute

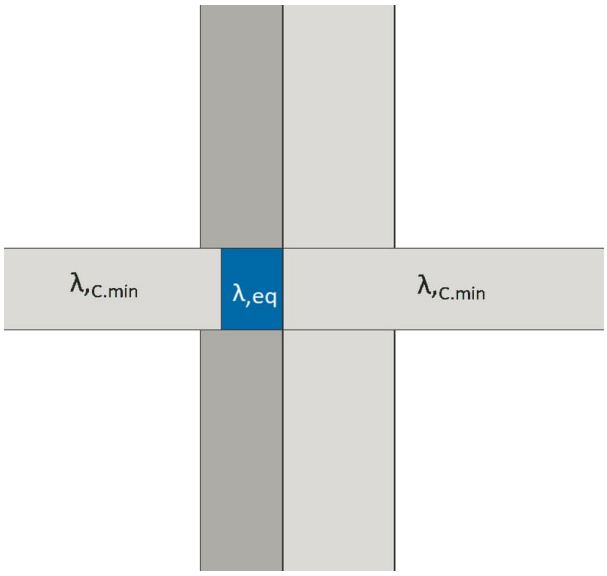
Avermann (Shenyang) Prefabrication Technology Co., Ltd
No. 10, West Zone 6, Headquarters Base, No. 888 Puhe Avenue, Shenbei New District 110000 Shenyang CHINA
＋86 024-66806566 |

Determined values

Product	h [mm]	d [mm]	$\lambda_{,C.min}$ [W/(mK)]	$\lambda_{,eq}$ [W/(mK)]	$\psi_{,WB}$ [W/(mK)]	M_{Rd} [kNm/m]	f_{Rsi} [-]	Eff.t. [W/(kNK)]	Efficiency - class
Overhanging structure thermal insulation connector * validated through 3D-FEM-Simulation	130	100	3.0	0.215	0.203	-21.5	0.93	8.85	phC

$\lambda_{,C.min}$ = Min. conductivity reinf. Concrete
$\lambda_{,eq}$ = Equivalent conductivity balcony connection
$\Psi_{,WB}$ = Linear thermal bridge coefficient
f_{Rsi} = Temperature-factor
Eff.t. = Efficiency-value
$m_{Rd,y}$ = Design resistance

Using the equivalent thermal conductivity λeq, linear thermal bridge loss coefficients can be determined for other connection situations using 2D FEM simulations. The minimum thermal conductivity of the reinforced concrete λC.min of the balcony is to be used for the cantilever slab and the false ceiling. The rectangular replacement geometry of the balcony connection element has the dimensions of height h and width d, as well as the thermal conductivity λeq.



Notice

The thermal bridge loss coefficients can be interpolated approximately linearly. Calculations and boundary conditions according to the criteria and algorithms “Certified Passive House Component – Balcony Connection, Version 2.1"