CERTIFICATE

Certified Passive House Component

Component-ID 0991cw03 valid until 31st December 2026

Passive House Institute
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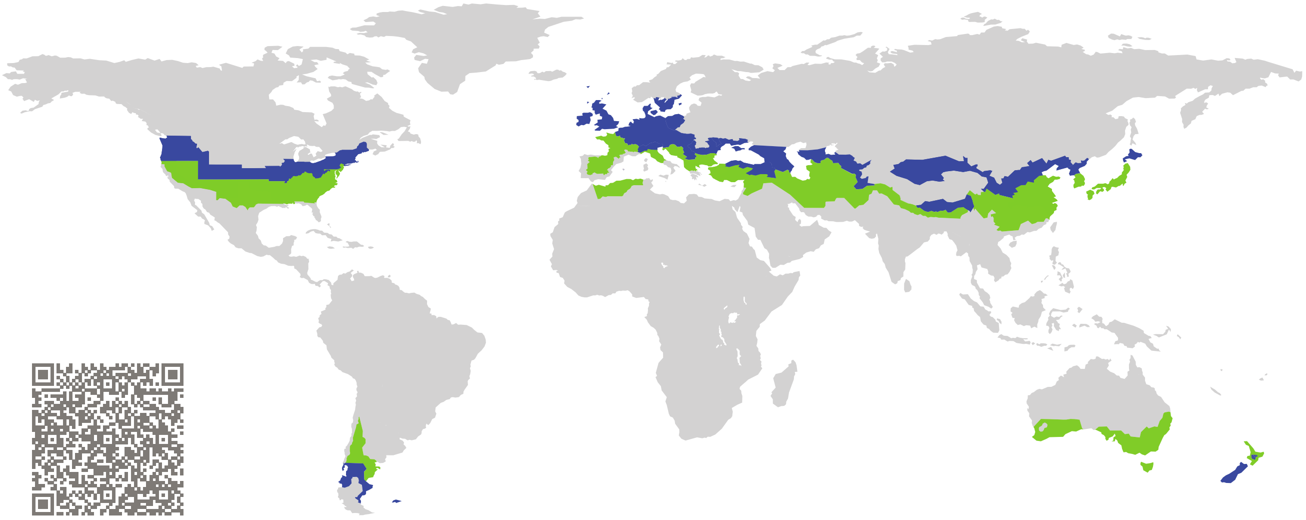


Category:	**Curtain Wall**
Manufacturer:	**Forster Profilsysteme AG, Romanshorn, Switzerland**
Product name:	**forster thermfix® vario Hi 60 mm**

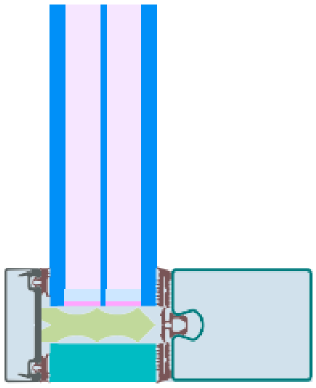
This certificate was awarded based on the following criteria for the cool, temperate climate zone

Comfort $U_{CW} = 0.80 \leq 0.80\ \mathrm{W/(m^2\,K)}$

$U_{CW,\mathrm{installed}} \leq 0.85\ \mathrm{W/(m^2\,K)}$

with $U_g = 0.70\ \mathrm{W/(m^2\,K)}$

Hygiene $f_{Rsi=0.25} \geq 0.70$



cool, temperate climate

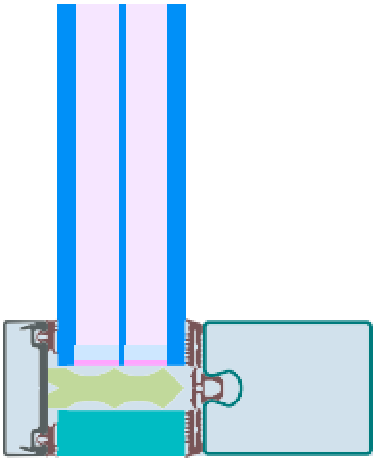
phA

CERTIFIED COMPONENT

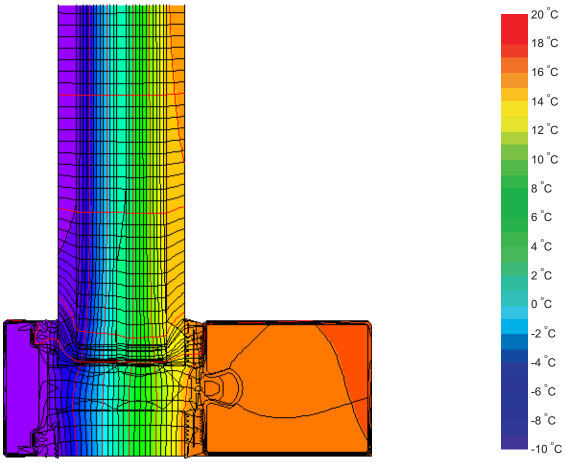
Passive House Institute

Passive House efficiency class	phE	phD	phC	phB	phA

www.passivehouse.com



Calculation model



Isothermal

Description

Steel facade with exterior aluminum cladding and internal screwing duct. Glass carrier and screw-losses determined by simulation (PHI). PE-foam rebate insulation (0,038 W/(mK)). Pane thickness: 56 mm (8/18/4/18/8), rebate depth: 14 mm, spacer: SWISSPACER Ultimate. The glazing was calculated with a 3 mm secondary seal. As it is often the case that this is thicker, today the calculation is carried out with a 6 mm secondary seal. This leads to a higher glazing edge thermal bridge, which can also be estimated by way of the spacer certificates: www.passivhauskomponenten.org / glazing edge bonds. The higher rates of heat loss can be compensated for by using e. g. improved glazing.

Explanation

The element U-values were calculated for the test element size of 1.20 m × 2.50 m with U_g = 0.70 W/(m^2 K). If a higher quality glazing is used, the element U-values will improve as follows:

Glazing	U_g =	0.70	0.64	0.58	0.52	W/(m^2 K)
		↓	↓	↓	↓	
Element	U_{CW}	0.80	0.74	0.69	0.63	W/(m^2 K)

Transparent building components are sorted into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations performed in the context of certification is available from the manufacturer.

The Passive House Institute has defined international component criteria for seven climate zones. In principle, components that have been certified for climate zones with higher thermal requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense to use a component of a higher thermal quality which has been certified for a climate zone with more stringent requirements.

Further information relating to certification
can be found on www.passivehouse.com and passipedia.org.

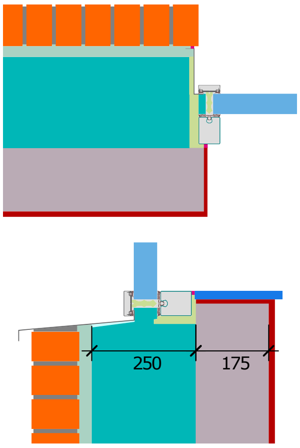
Frame values	Frame width b_f mm	U-value frame U_f [1] W/(m^2 K)	Ψ-glazing edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Mullion (0M1) fixed	60	0.79	0.032	0.81
Transom (0T1) fixed	60	0.79	0.032	0.81
Transom (1T1) 1 casement	121	1.80	0.028	0.72
Bottom (FB1) fixed	60	0.79	0.031	0.81
Top (FH1) fixed glazing	60	0.79	0.031	0.81
Jamb (FJ1) fixed glazing	60	0.79	0.031	0.81
Spacer: SWISSPACER Ultimate			Secondary seal: Polysulfide	

Thermal glass carrier bridge[2] $\chi_{GT} = 0.024$ W/K

Validated installations

Cavity wall (fixed glazing)

$U_{Wall} = 0.13$ W/(m^2 K)

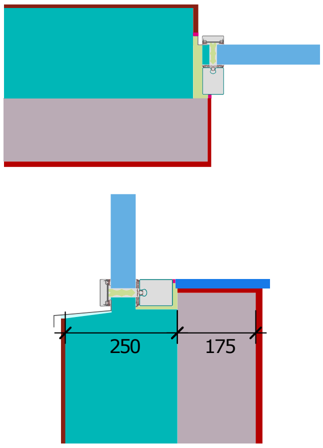


$\Psi_{install}$	W/(m K)
Top	0.016
Left	0.016
Right	0.016
Bottom	0.015

$U_{W,installed} = 0.82$ W/(m^2 K)

Exterior insulation and finishing system (EIFS) (fixed glazed)

$U_{Wall} = 0.13$ W/(m^2 K)

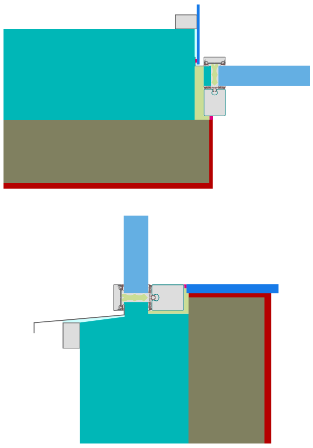


$\Psi_{install}$	W/(m K)
Top	0.015
Left	0.015
Right	0.015
Bottom	0.015

$U_{W,installed} = 0.82$ W/(m^2 K)

Ventilated facade (fixed glazing)

$U_{Wall} = 0.13$ W/(m^2 K)



$\Psi_{install}$	W/(m K)
Top	0.017
Left	0.017
Right	0.017
Bottom	0.015

$U_{W,installed} = 0.82$ W/(m^2 K)

Disclaimer: The Passive House Institute GmbH (PHI) conducts heat-transfer analyses in accordance with the standards set out in Criteria and Algorithms for Certified Passive House Components: Transparent Building Components and Opening Elements in the Building Envelope, based on information provided by the manufacturer. PHI does not verify on-site implementation. It is the responsibility of the project leader to ensure that installed components match the certified specifications in terms of geometry, configuration, and materials. Manufacturers must make full product information available upon request to parties involved in a construction project. These parties may compare the provided information with project documentation and perform on-site inspections as part of the quality-assurance process.

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[1] Includes $\Delta U = 0.23$ W/(m^2 K) – Determined through 3D FEM simulation

[2] Determined through 3D FEM simulation. Glass carrier type: Stainless steel