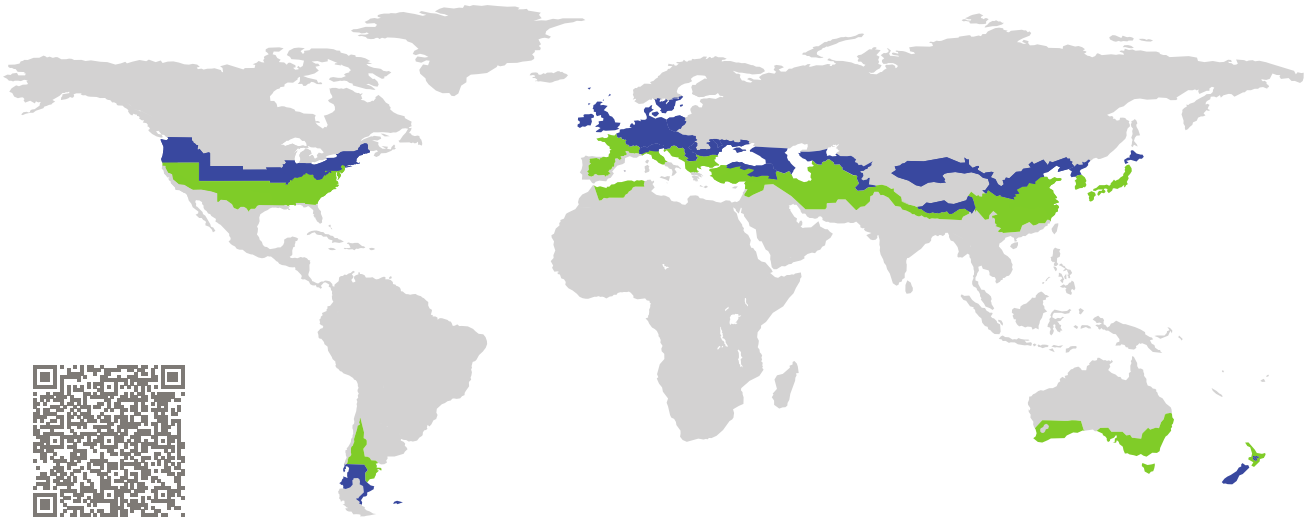
CERTIFICATE

Certified Passive House Component

Component-ID 1518cw03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



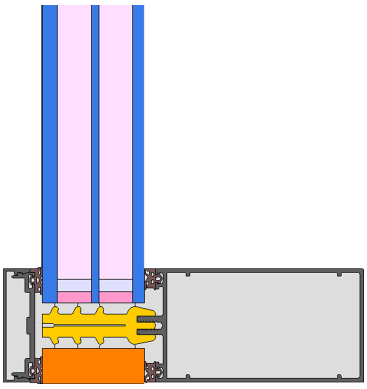
Category: **Curtain Wall**

Manufacturer: **HUECK System GmbH & Co. KG, Lüdenscheid, Germany**

Product name: **FS 060 pro**

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

Comfort	U_{CW}= 0.80	≤	0.80 W/(m² K)
	$U_{CW,installed}$	≤	0.85 W/(m² K)
	with U_g	=	0.70 W/(m² K)
Hygiene	$f_{Rsi=0.25}$	≥	0.70



cool, temperate climate

phB

CERTIFIED COMPONENT

Passive House Institute

Passive House efficiency class	phE	phD	phC	phB	phA

www.passivehouse.com

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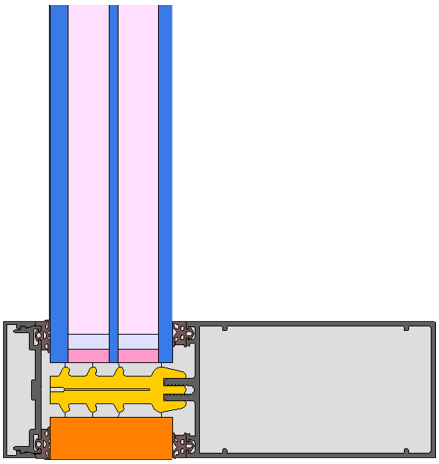
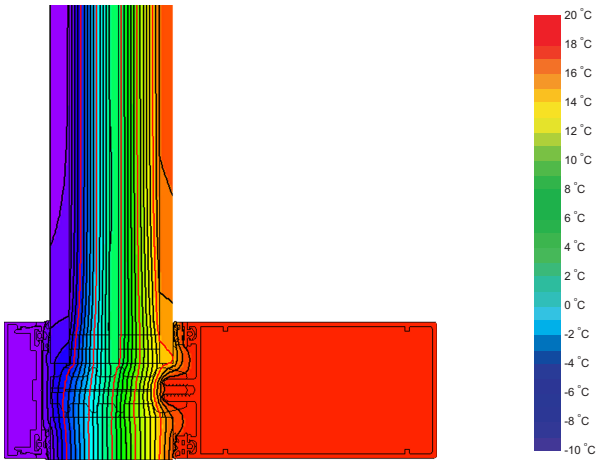


Calculation model



Isothermal

Description

Construction: Mullion and transom facade with flexible polyethylene-foam (0.038 W/mK) inside of the rebate. Pane thickness: 54 mm (8/18/4/18/6), glass inset: 18 mm, spacer: SWISSPACER Ultimate, Secondary sealing: DOWSIL 3364 Warm Edge IG Sealant

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/(m² 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	0.54	W/(m² K)
		↓	↓	↓	↓	
Element	U_{CW}	0.80	0.75	0.69	0.66	W/(m² 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.

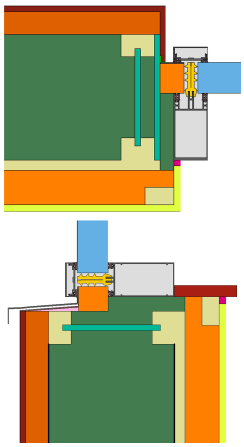
Frame values		Frame width b_f mm	U-value frame U_f [1] W/(m² K)	Ψ-glazing edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Mullion fixed	(0M1)	60	0.75	0.031	0.81
Mullion fixed	(0M2)	60	0.75	0.030	0.81
Transom fixed	(0T1)	60	0.76	0.031	0.82
Bottom fixed	(FB1)	60	0.79	0.032	0.83
Top fixed	(FH1)	60	0.79	0.032	0.83
Lateral fixed	(FJ1)	60	0.80	0.031	0.82
Spacer: SWISSPACER Ultimate			Secondary seal: DOWSIL ™ 3364 Warm Edge IG Sealant		

Thermal glass carrier bridge[2] χ_{GT} = 0.040 W/K

Validated installations

Lightweight timber (fixed glazed)

U_{Wall} = 0.13 W/(m² K)

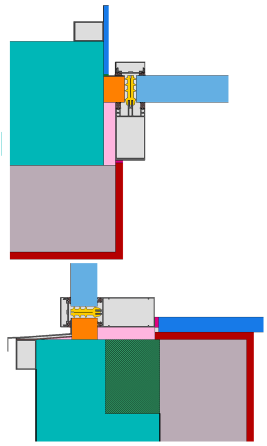


$\Psi_{install}$	W/(m K)
Top	0.026
Left	0.043
Right	0.043
Bottom	0.026

$U_{W,installed}$ = 0.85 W/(m² K)

Ventilated facade (fixed glazing)

U_{Wall} = 0.13 W/(m² K)

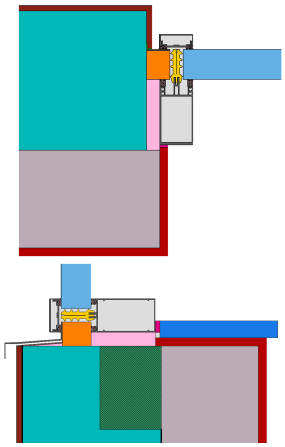


$\Psi_{install}$	W/(m K)
Top	0.020
Left	0.016
Right	0.016
Bottom	0.020

$U_{W,installed}$ = 0.83 W/(m² K)

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

U_{Wall} = 0.13 W/(m² K)



$\Psi_{install}$	W/(m K)
Top	0.020
Left	0.017
Right	0.017
Bottom	0.020

$U_{W,installed}$ = 0.83 W/(m² K)

[1] Includes ΔU = 0.14 W/(m² K). Determined through measurement
[2] Determined through 3D FEM simulation. Glass carrier type: Aluminium