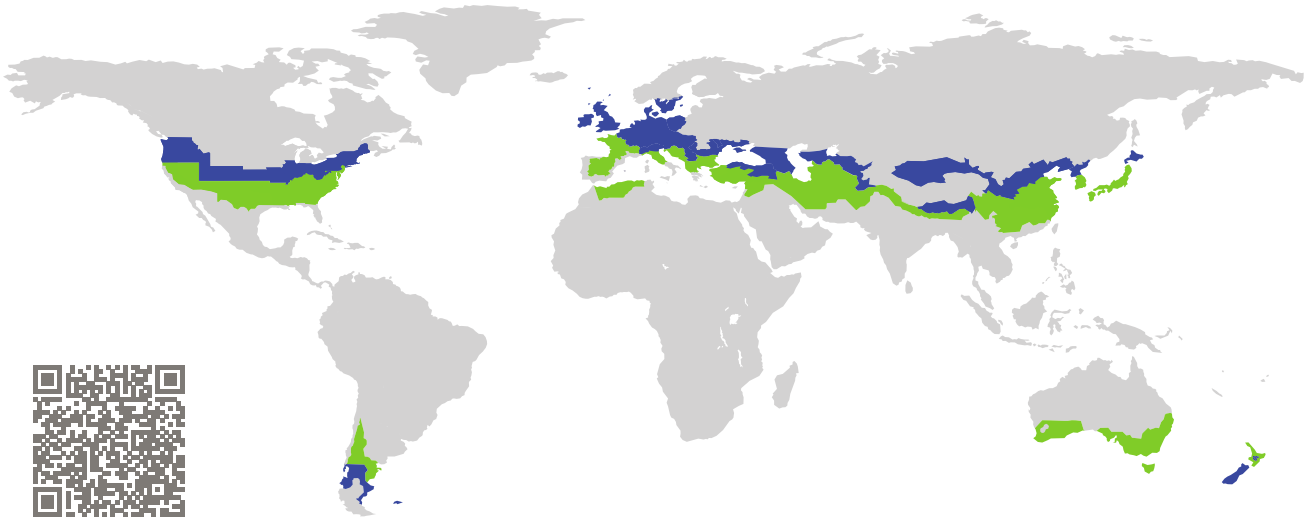
CERTIFICATE

Certified Passive House Component

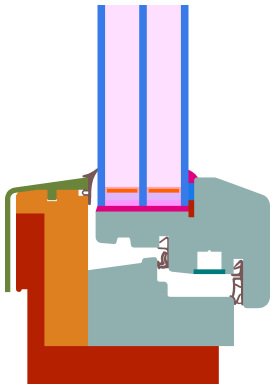
Component-ID 0087wi03 valid until 31st December 2016

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Window frame**
Manufacturer:	**SLAVONA, s.r.o., Slavonice, Czech Republic**
Product name:	**Progression**

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



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

cool, temperate climate

phA

CERTIFIED COMPONENT

Passive House Institute

Passive House efficiency class	phE	phD	phC	phB	phA

www.passivehouse.com

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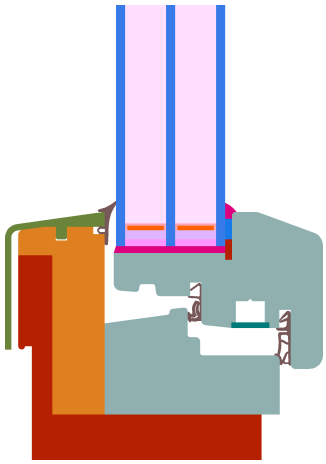
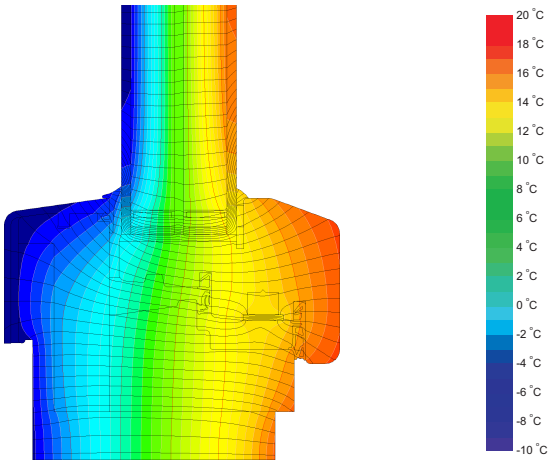


Calculation model



Isothermal

Description

Timber frame (Spruce and Thermowood) with insulation 0,058 (W/mK). Used Pane: 48 mm (4/18/4/18/4), intersection of the Glass: 18 mm.

Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with U_g = 0.70 W/(m² K). If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	U_g =	0.70	8.00	0.60	0.54	W/(m² K)
		↓	↓	↓	↓	
Window	U_W =	0.80	6.21	0.72	0.68	W/(m² K)

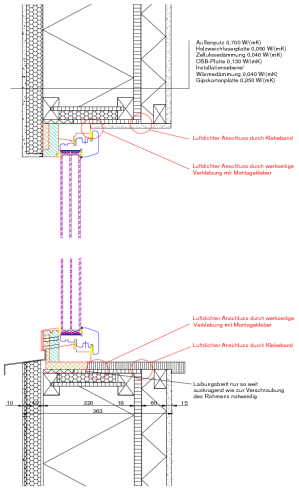
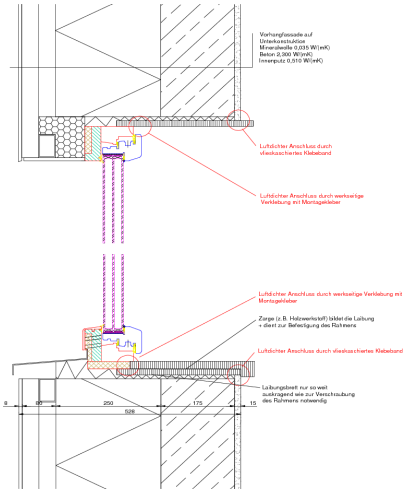
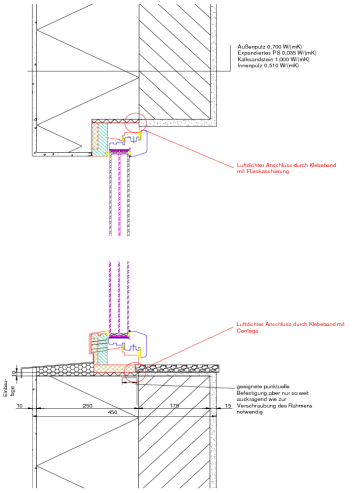
Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations 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 which have been certified for climate zones with higher 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 W/(m K)	Ψ-glass edge Ψ_g W/(m² K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Top	89	0.83	0.025	0.72
Left	89	0.83	0.025	0.72
Right	89	0.83	0.025	0.72
Bottom	109	0.81	0.026	0.72
Mullion	164	0.82	0.026	0.72
Spacer: SWISSPACER V		Secondary seal: Polysulfide		

Validated installations

Timber frame		Ventilated facade		EIFS	
					
$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)
Top	0.014	Top	0.000	Top	–0.005
Left	0.014	Left	0.000	Left	–0.005
Right	0.014	Right	0.000	Right	–0.005
Bottom	0.020	Bottom	0.008	Bottom	0.010
$U_{W,installed}$ = 0.84 W/(m² K)		$U_{W,installed}$ = 0.80 W/(m² K)		$U_{W,installed}$ = 0.78 W/(m² K)	