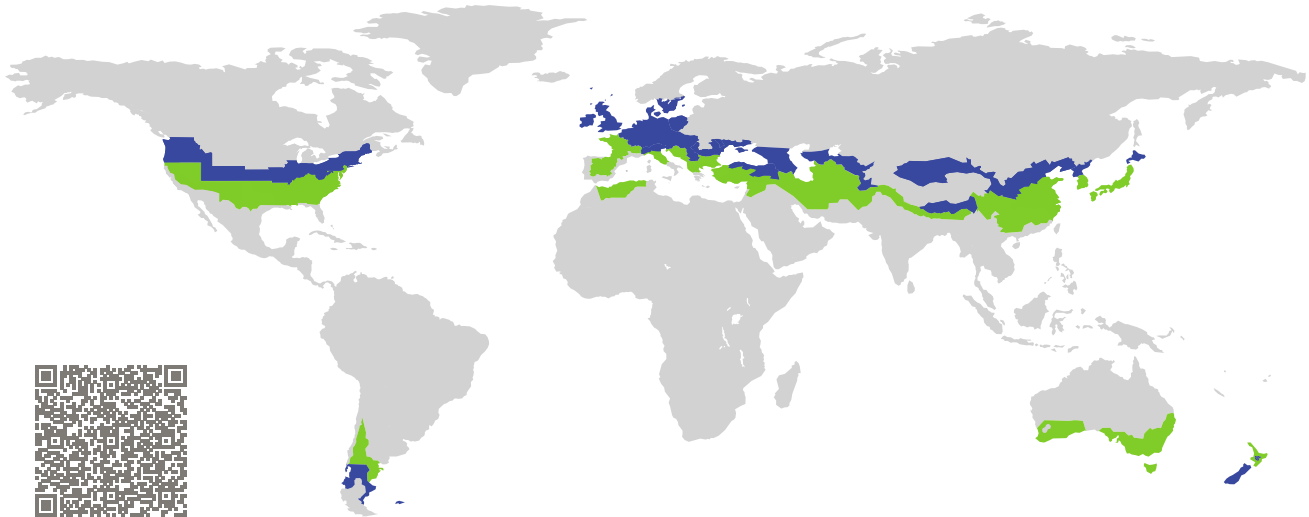


CERTIFICATE

Certified Passive House Component

Component-ID 1905cw03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

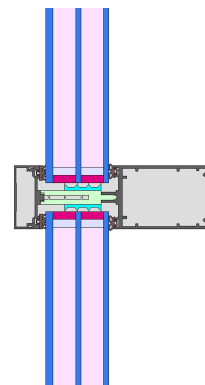


Category: **Curtain Wall**
Manufacturer: **Hydro Building Systems Sweden AB,
Vetlanda,
Sweden**
Product name: **SAPA TENTAL 50**

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

Comfort $U_{CW} = 0.80 \leq 0.80 \text{ W}/(\text{m}^2 \text{ K})$
 $U_{CW, \text{installed}} \leq 0.85 \text{ W}/(\text{m}^2 \text{ K})$
with $U_g = 0.70 \text{ W}/(\text{m}^2 \text{ K})$

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



Passive House
efficiency class

phE

phD

phC

phB

phA

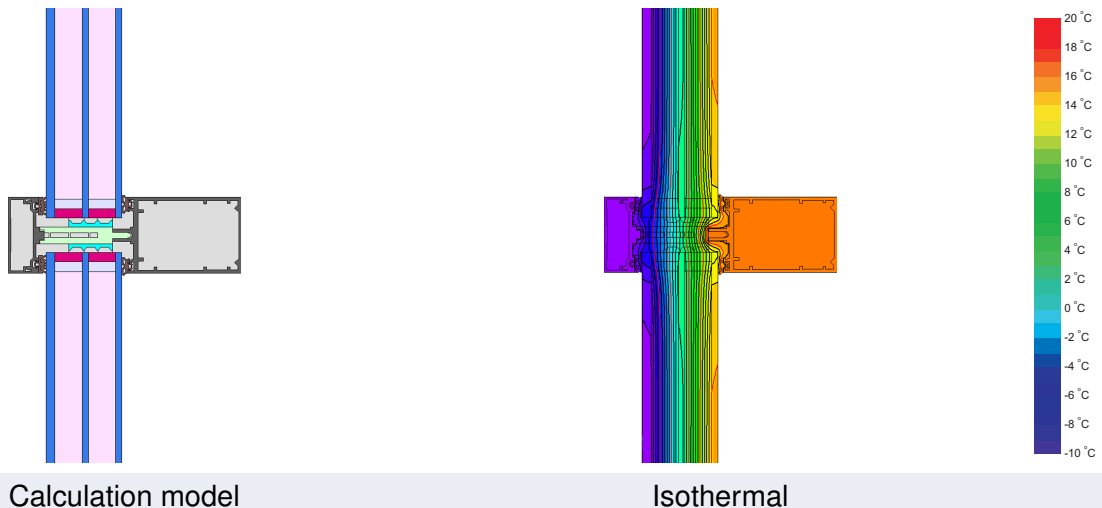
www.passivehouse.com

cool, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute



Description

Curtain wall facade with insulation inlay of XPET (0.029 W/(mK) and polyethylene foam (0.038 W/(mK)). Thermal bridge values of glass support and fastener determined via measurement (ift). Silicone secondary sealant. Pane thickness: 50 mm (6/18/4/18/4), rebate depth: 13.5 mm.

Explanation






The element U-values were calculated for the test element size of 1.20 m × 2.50 m with $U_g = 0.70 \text{ W}/(\text{m}^2 \text{ K})$. 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/(m ² K)
		↓	↓	↓	↓	
Element	U_{CW}	0.80	0.75	0.69	0.65	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.

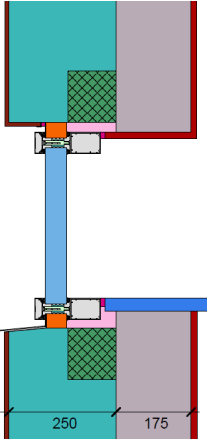
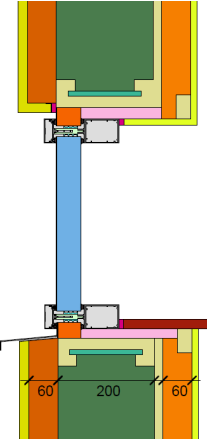
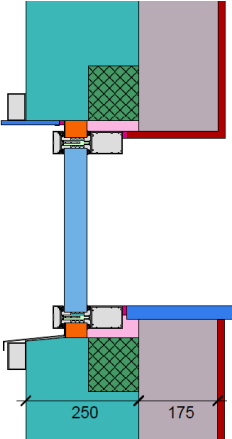
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components that have been certified for climate zones with higher thermal requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make 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 fixed	(0M1) 	50	0.68	0.041	0.77
Transom fixed	(0T1) 	50	0.68	0.043	0.79
Bottom fixed	(FB1) 	50	0.71	0.042	0.79
Top fixed	(FH1) 	50	0.71	0.042	0.79
Lateral fixed	(FJ1) 	50	0.70	0.040	0.77
Spacer: Swisspacer Ultimate			Secondary seal: Silicone		

Thermal glass carrier bridge² $\chi_{GT} = 0.007$ W/K

Validated installations

Exterior insulation and finishing system (EIFS) (fixed glazed)		Lightweight timber (fixed glazed)		Ventilated facade (fixed glazed)	
$U_{Wall} = 0.13$ W/(m ² K)		$U_{Wall} = 0.13$ W/(m ² K)		$U_{Wall} = 0.13$ W/(m ² K)	
					
$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)
Top	0.023	Top	0.044	Top	0.023
Left	0.019	Left	0.043	Left	0.020
Right	0.019	Right	0.043	Right	0.020
Bottom	0.022	Bottom	0.042	Bottom	0.023
$U_{W,installed} = 0.82$ W/(m ² K)		$U_{W,installed} = 0.85$ W/(m ² K)		$U_{W,installed} = 0.83$ W/(m ² K)	

¹ Includes $\Delta U = 0.20$ W/(m² K). Determined through measurement

² Determined through measurement. Glass carrier type: Aluminium

