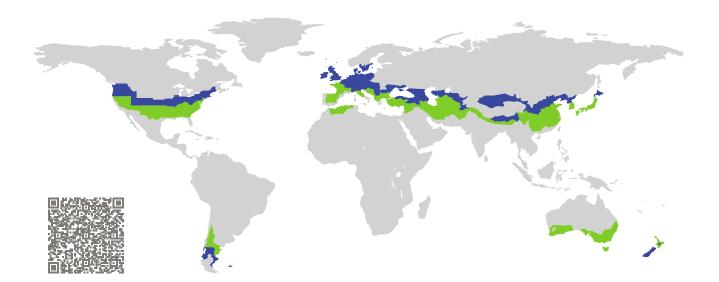
CERTIFICATE

Certified Passive House Component Component-ID 1152wi03 valid until 31st December 2025 Passive House Institute Dr. Wolfgang Feist 64283 Darmstadt Germany

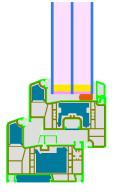


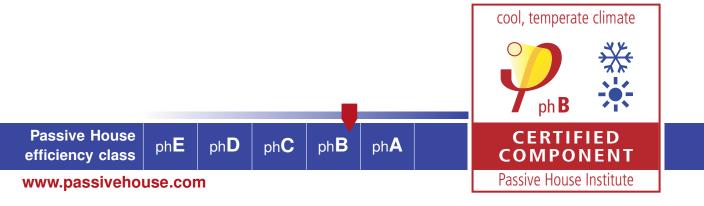
Category:	Window Frame
Manufacturer:	Alpen High Performance Products, Louisville, CO,
	United States of America
Product name:	Alpen Tyrol Tilt/Turn

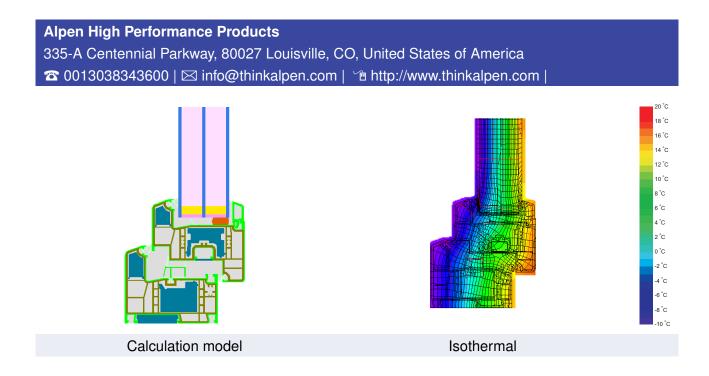
This certificate was awarded based on the following criteria for the cool, temperate climate zone

Comfort	$U_W = 0.78$	\leq	0.80 W/(m ² K)
	$U_{W,\text{installed}}$	\leq	0.85 W/(m ² K)
	with U_g	=	$0.70 W/(m^2 K)$

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







Description

PVC frame, insulated by EPS-foam inserts (0,031 W/(mK)). Pane thickness: 47,2 mm (3/19,1/3/19,1/3), rebate depth: 15 mm, spacer: SuperSpacer Tri-Seal with polyurethane as secondary seal.

Explanation

The window U-values were calculated for the test window size of 1.23 m \times 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:

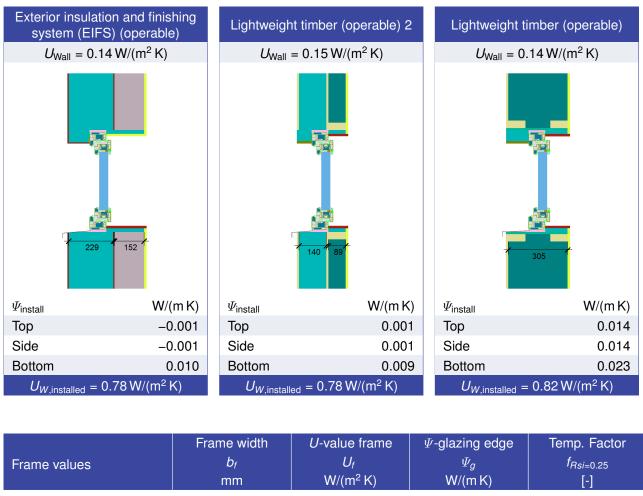
Glazing	$U_g =$	0.70	0.64	0.58	0.52	W/(m ² K)
		\downarrow	\downarrow	\downarrow	\downarrow	
Window	$U_W =$	0.78	0.73	0.69	0.65	W/(m ² K)

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.

Validated installations



Frame value	es		D _f mm	U _f W/(m ² K)	Ψ_g W/(m K)	T _{Rsi=} 0.25 [-]
Mullion 2 casements	(2M1)	4	184	0.80	0.023	0.75
Bottom	(OB1)	4	115	0.76	0.023	0.75
Тор	(OH1)	F	115	0.76	0.023	0.75
Lateral	(OJ1)	I -	115	0.76	0.023	0.75
Spacer: Super Spacer TriSeal / T-Spacer Premium Secondary seal: Polyurethan						

www.passivehouse.com