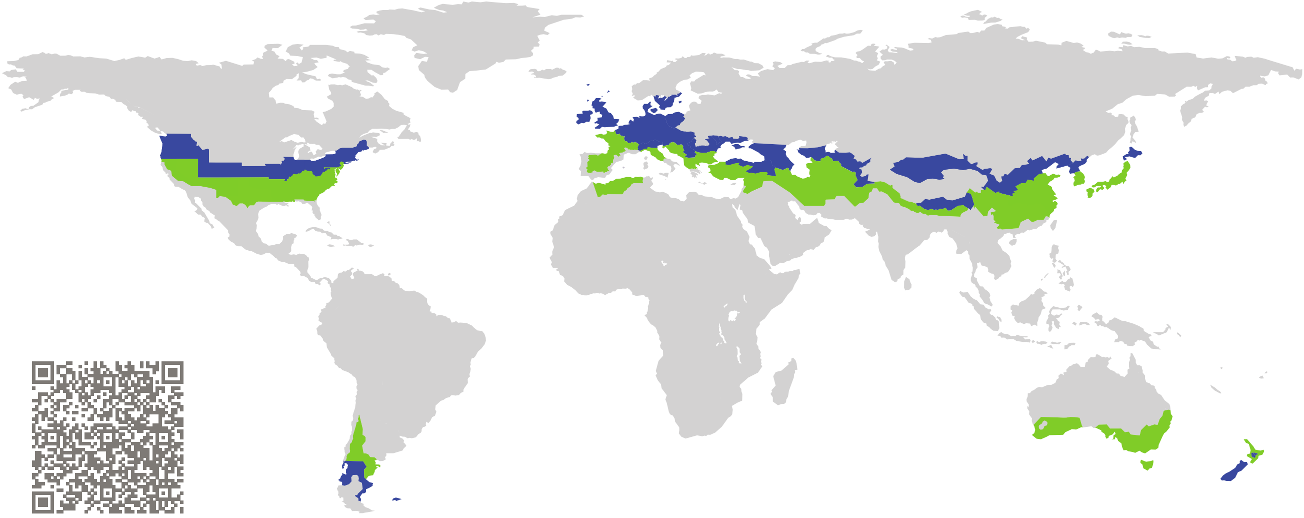
CERTIFICATE

Certified Passive House Component

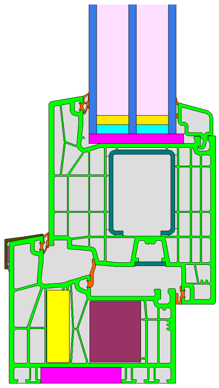
Component-ID 1767wi03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Window Frame**
Manufacturer:	**Innotech Windows & Doors, Inc., Langley, BC, Canada**
Product name:	**Defender 88PH+ Pro Terrace Door**

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



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

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

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

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

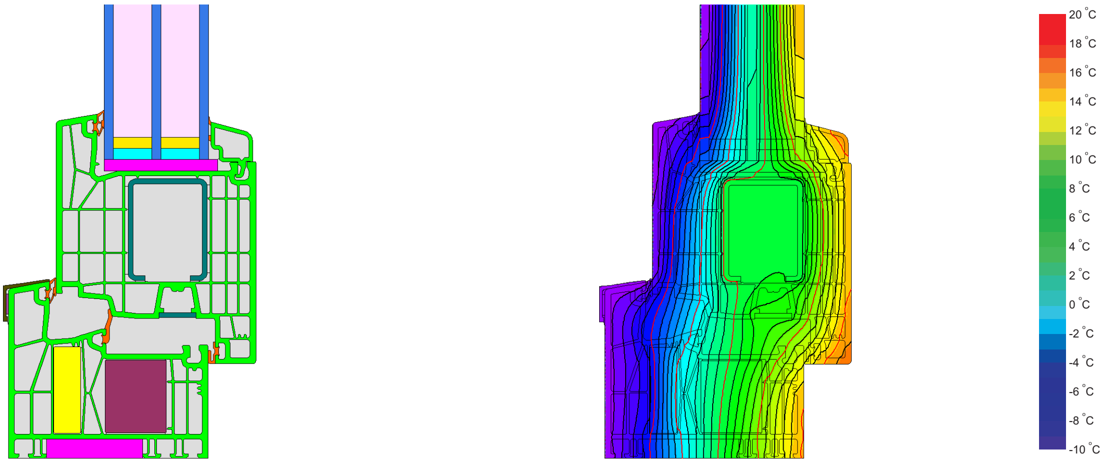
cool, temperate climate

phC

CERTIFIED COMPONENT

Passive House Institute

Passive House efficiency class	phE	phD	phC	phB	phA



Calculation model | Isothermal

Description

PVC frame with steel reinforcement and EPS insulation (Bach EPS F-040, 0,041 W/(mK) and EPS (0,032 W/(mK)) and Spaceloft insulation (0.016 W/(mK). The maximum size of the window with this reinforcement is 1,31 m x 2,60 m. Pane thickness 46 mm (4/17/4/17/4), rebate depth 20 mm. Spacer: SuperSpacer Premium with butyl secondary seal. There are no limitations on colour.

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/(m^2 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	0.54	W/(m^2 K)
		↓	↓	↓	↓	
Window	U_W =	0.80	0.76	0.73	0.71	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.

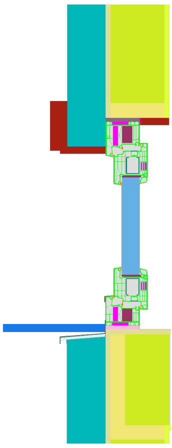
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense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

Lightweight timber (operable)

$U_{\mathrm{Wall}} = 0.14\ \mathrm{W/(m^2\,K)}$

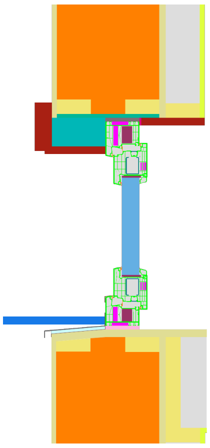


Ψ_{install}	W/(m K)
Top	0.003
Side	0.003
Bottom	0.037

$U_{W,\mathrm{installed}} = 0.83\ \mathrm{W/(m^2\,K)}$

Lightweight timber (operable) 2

$U_{\mathrm{Wall}} = 0.14\ \mathrm{W/(m^2\,K)}$

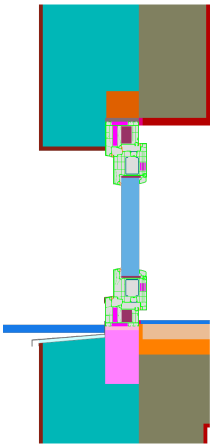


Ψ_{install}	W/(m K)
Top	0.010
Side	0.010
Bottom	0.035

$U_{W,\mathrm{installed}} = 0.84\ \mathrm{W/(m^2\,K)}$

Exterior insulation and finishing system (EIFS) (operable)

$U_{\mathrm{Wall}} = 0.14\ \mathrm{W/(m^2\,K)}$



Ψ_{install}	W/(m K)
Top	0.001
Side	0.001
Bottom	0.035

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

Frame values			Frame width b_f mm	U-value frame U_f $\mathrm{W/(m^2\,K)}$	Ψ-glazing edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Mullion 1 casement	(1M1)		261	0.83	0.022	0.74
Bottom	(OB1)		152	0.84	0.022	0.74
Top	(OH1)		166	0.80	0.022	0.74
Lateral	(OJ1)		166	0.80	0.022	0.74
Spacer: Super Spacer Premium				Secondary seal: Butyl		