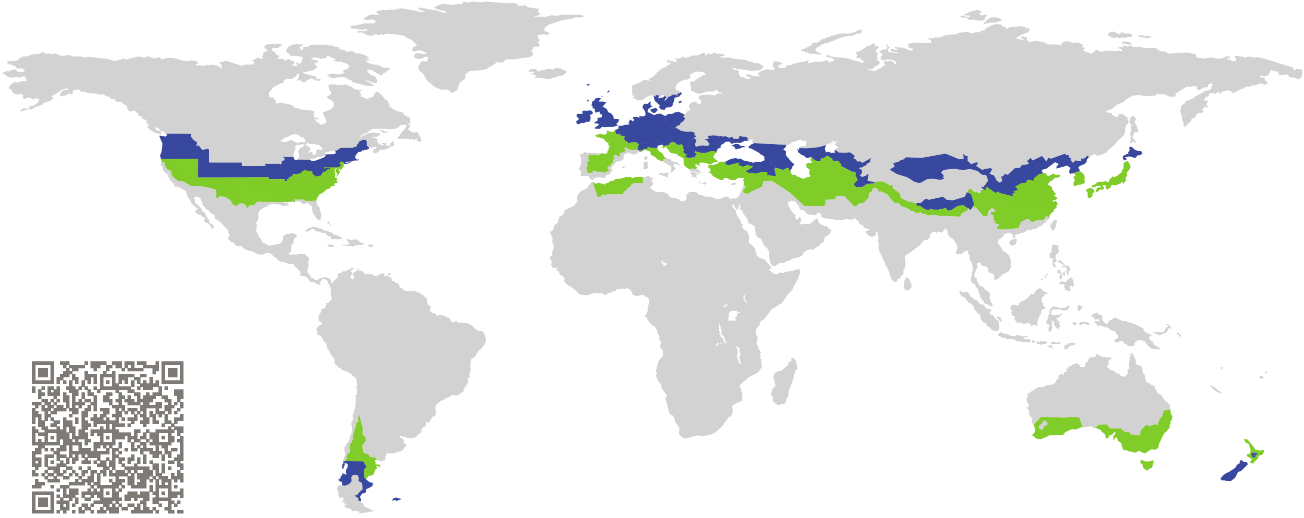
CERTIFICATE

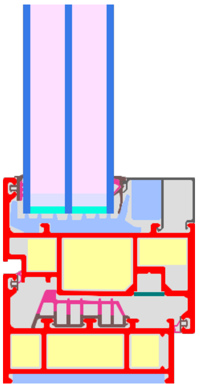
Certified Passive House Component

Component-ID 2491wi03 valid until 31st December 2026

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Window Frame**
Manufacturer:	**Chongqing Xianju New Material Co., Ltd., Chongqing, China**
Product name:	**Fengdu Passive GFRP 90 Series**



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

Comfort	$U_W = 0.78$	$\leq$	$0.80\,\mathrm{W/(m^2\,K)}$
	$U_{W,\text{installed}}$	$\leq$	$0.85\,\mathrm{W/(m^2\,K)}$
	with U_g	$=$	$0.70\,\mathrm{W/(m^2\,K)}$
Hygiene	$f_{Rsi=0.25}$	$\geq$	0.70

cool, temperate climate

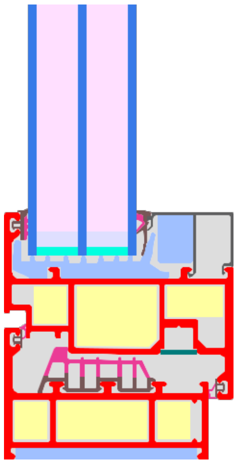
ph B

CERTIFIED COMPONENT

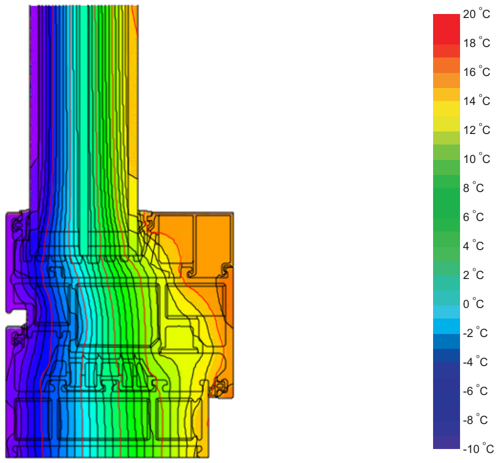
Passive House Institute

Passive House efficiency class	phE	phD	phC	phB	phA

www.passivehouse.com



Calculation model



Isothermal

Description

Fiberglass reinforced frame (0.30 W/(mK)) insulated by Kooltherm (0.022 W/(mK)) and PE foam (0.038 W/(mK)). Edge bond: Swisspacer Ultimate with butyl secondary seal. Pane thickness: 48 mm (4/18/4/18/4), rebate depth: 19 mm.

Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with $U_g = 0.70\,\mathrm{W/(m^2\,K)}$. If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	U_g =	0.70	0.64	0.58	0.52	$\mathrm{W/(m^2\,K)}$
		↓	↓	↓	↓	
Window	U_W =	0.78	0.74	0.70	0.65	$\mathrm{W/(m^2\,K)}$

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.

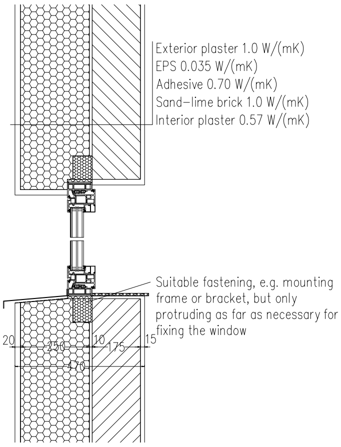
Frame values		Frame width b_f mm	U-value frame U_f W/(m^2 K)	Ψ-glazing edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Flying Mullion	(FM1)	133	0.78	0.023	0.77
Bottom	(OB1)	109	0.78	0.023	0.78
Head	(OH1)	109	0.78	0.023	0.78
Jamb	(OJ1)	109	0.78	0.023	0.78

Spacer: Swisspacer Ultimate Secondary seal: Butyl

Validated installations

Exterior insulation and finishing system (EIFS) (operable)

U_{Wall} = 0.13 W/(m^2 K)

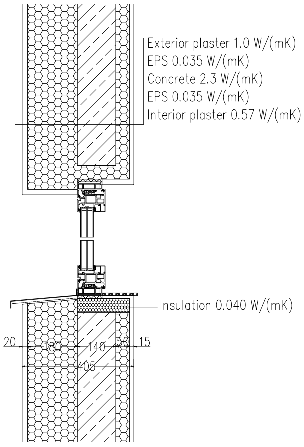


Ψ_{install}	W/(m K)
Top	0.011
Side	0.011
Bottom	0.023

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

Formwork blocks (operable)

U_{Wall} = 0.15 W/(m^2 K)

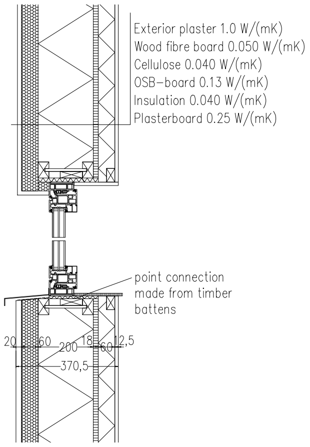


Ψ_{install}	W/(m K)
Top	0.014
Side	0.014
Bottom	0.030

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

Lightweight timber (operable)

U_{Wall} = 0.14 W/(m^2 K)



Ψ_{install}	W/(m K)
Top	0.017
Side	0.017
Bottom	0.028

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