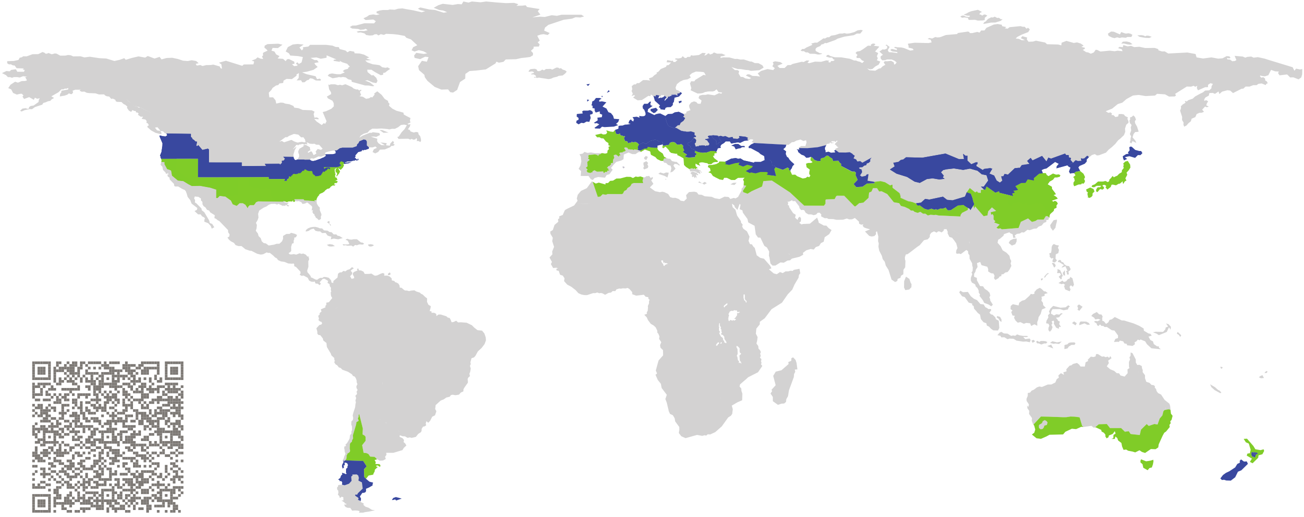
CERTIFICATE

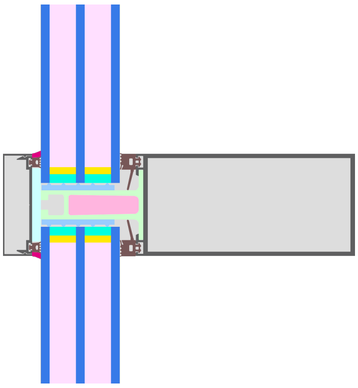
Certified Passive House Component

Component-ID 1838cw03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Curtain Wall**
Manufacturer:	**Shandong Tishman New Materials Co., Ltd., trading as Shandong Taixin Technology Group Co., Ltd, Taian, China**
Product name:	**TSM 70 Curtain Wall**



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

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

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

cool, temperate climate

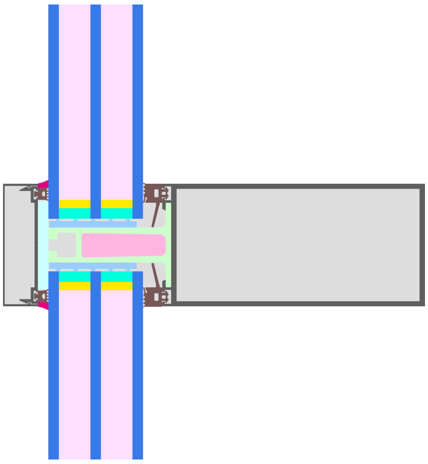
phA+

CERTIFIED COMPONENT

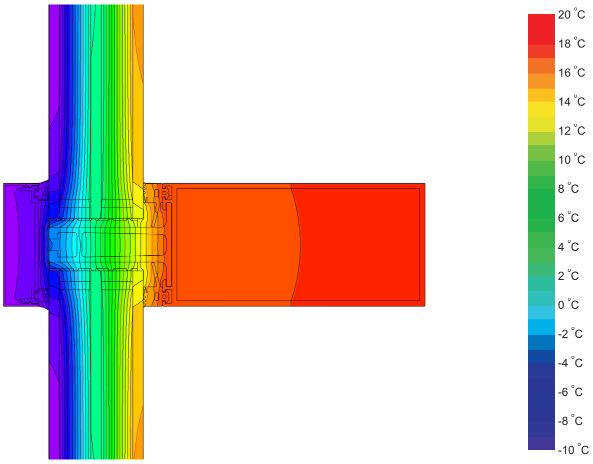
Passive House Institute

Passive House efficiency class	phE	phD	phC	phB	phA	phA+

www.passivehouse.com



Calculation model



Isothermal

Description

Aluminium and fibreglass-reinforced plastic (0,411 W/(mK)) curtain wall with aerogel (0,028 W/(mK)) and injected polyurethane (0,040 W/(mK)) insulation. Pane thickness: 54 mm (6/18/6/18/6), rebate depth: 20 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 W/(m^2 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	0.52	W/(m^2 K)
		↓	↓	↓	↓	
Element	U_{CW}	0.78	0.73	0.67	0.62	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)	70	0.88	0.029	0.81
Transom fixed	(0T1)	70	0.87	0.029	0.80
Bottom fixed	(FB1)	70	0.85	0.028	0.79
Top fixed	(FH1)	70	0.85	0.028	0.79
Lateral fixed	(FJ1)	70	0.86	0.029	0.80

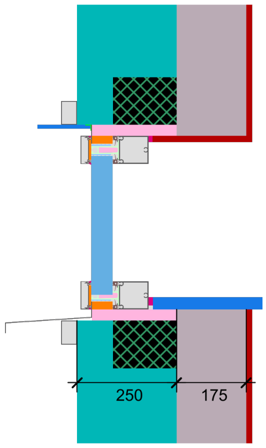
Spacer: Super Spacer® Premium Secondary seal: Butyl

Thermal glass carrier bridge[2] $\chi_{GT} = 0.000$ W/K

Validated installations

Ventilated facade (operable)

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

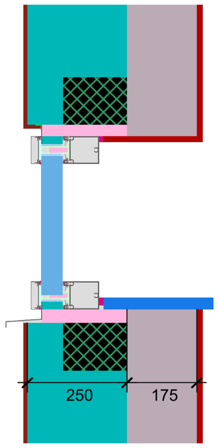


$\Psi_{install}$	W/(m K)
Top	0.027
Left	0.022
Right	0.022
Bottom	0.028

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

Exterior insulation and finishing system (EIFS) (operable)

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

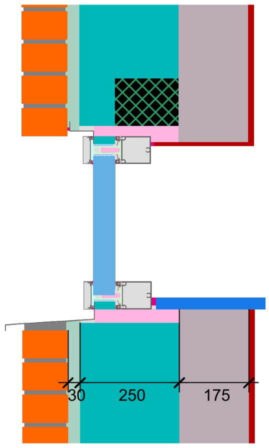


$\Psi_{install}$	W/(m K)
Top	0.027
Left	0.022
Right	0.022
Bottom	0.029

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

Cavity wall (operable)

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



$\Psi_{install}$	W/(m K)
Top	0.026
Left	0.023
Right	0.023
Bottom	0.024

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

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[1] Includes $\Delta U = 0.01$ W/(m^2 K). Determined through 3D FEM simulation

[2] Determined through 3D FEM simulation. Glass carrier type: Non-metallic