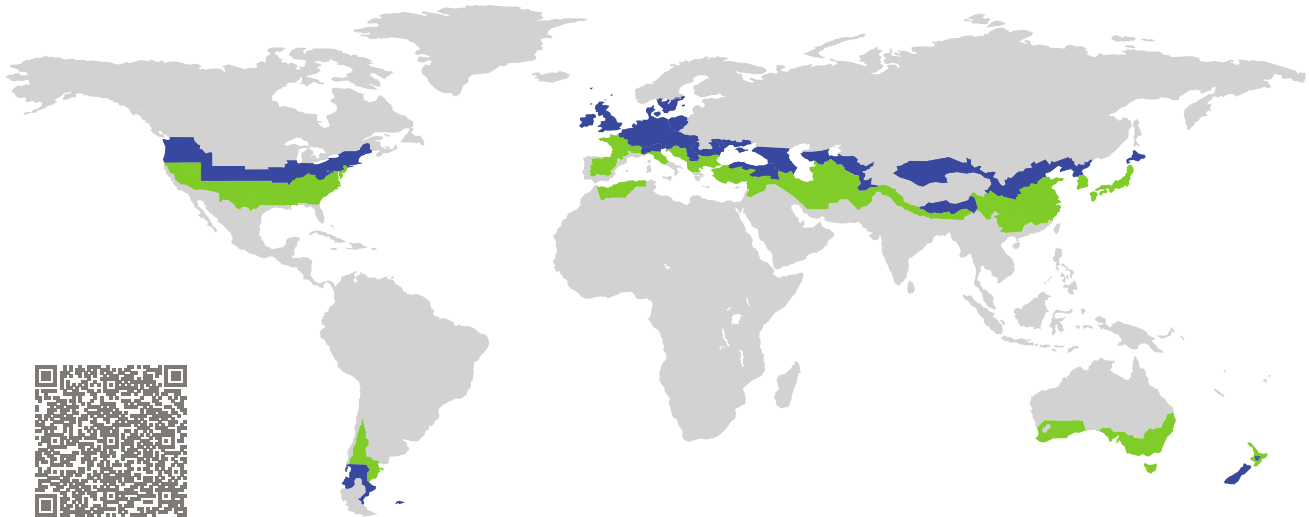


CERTIFICATE

Certified Passive House Component

Component-ID 1224cw03 valid until 31st December 2020

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

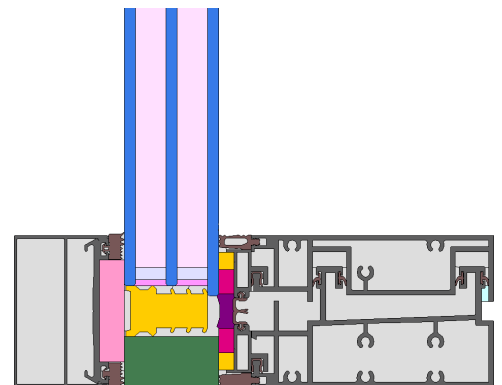


Category: **Curtain Wall**
Manufacturer: **Hebei Xinhua Curtain Wall Co., Ltd.,
Zhuozhou, Hebei Provinz, China,
China**
Product name: **HM-ACW**

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

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

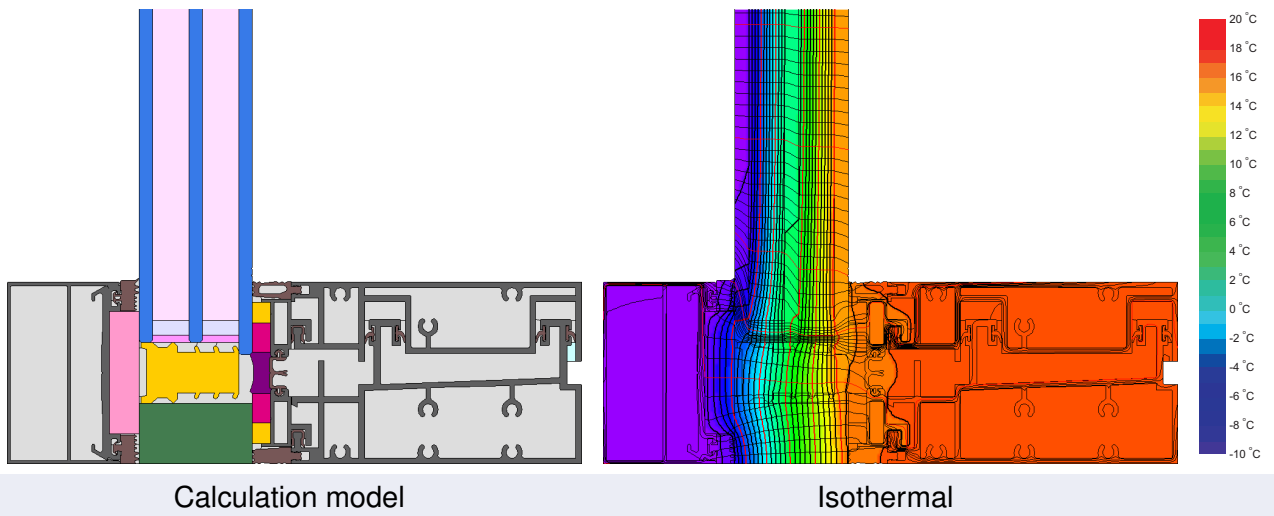
phA

cool, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute



Description

Aluminium curtain wall. Insulation inside the rebate (0.032) and in front of the pressure plate (0,031). Thermal bridges determined via 3D FEM simulation. Pane thickness: 50 mm (6/16/6/16/6), rebate depth: 27 mm, spacer: SWISSPACER Ultimate

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	0.52	W/(m ² K)
		↓	↓	↓	↓	
Element	U_{CW}	0.78	0.72	0.67	0.61	W/(m ² K)

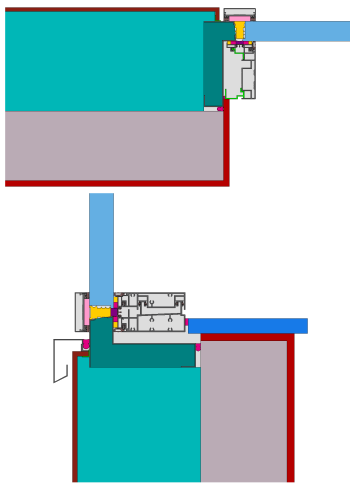
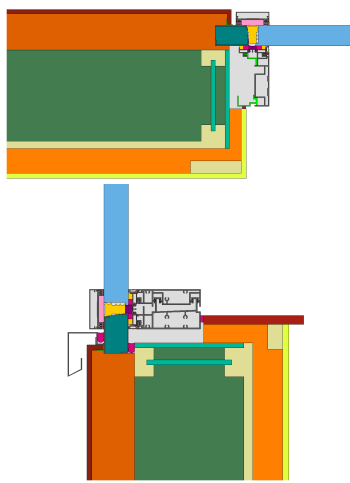
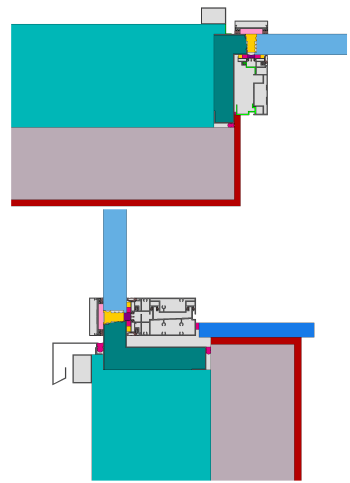
Transparent building components are sorted into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations performed 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 -panel edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Top fixed	(tof)		80	0.65	0.034	0.84
Side fixed	(sf)		80	0.65	0.034	0.84
Bottom fixed	(bof)		80	0.65	0.034	0.84
Mullion fixed	(m)		80	0.61	0.035	0.84
Transom fixed	(tf)		80	0.62	0.035	0.84
Transom 1 casement	(t1)		144	0.77	0.034	0.81
Spacer: SWISSPACER Ultimate			Secondary seal: Polysulfid			
Thermal glass carrier bridge ² $\chi_{GT} = 0.003$ W/K						

Validated installations

Exterior insulation and finishing system		Timber frame		Ventilated facade	
$U_{Wall} = 0.13$ W/(m ² K)		$U_{Wall} = 0.15$ 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	0.035	Top	0.066	Top	0.033
Left	0.021	Left	0.051	Left	0.019
Right	0.021	Right	0.051	Right	0.019
Bottom	0.035	Bottom	0.066	Bottom	0.033
$U_{W,installed} = 0.80$ W/(m ² K)		$U_{W,installed} = 0.84$ W/(m ² K)		$U_{W,installed} = 0.80$ W/(m ² K)	

¹ Includes $\Delta U = 0.04$ W/(m² K). Determined through 3D - FEM Simulation

² Standard value . Glass carrier type : Non-Metallic

