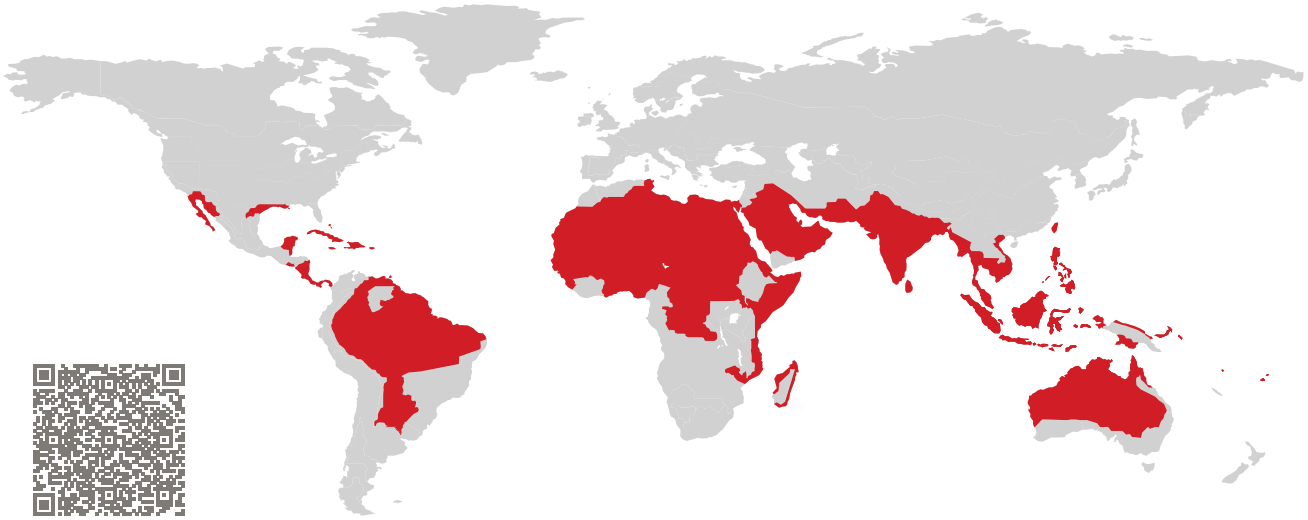
CERTIFICATE

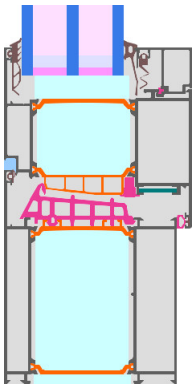
Certified Passive House Component

Component-ID 1673wi07 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Window Frame**
Manufacturer:	**Alumil Middle East DMCC, Dubai, United Arab Emirates**
Product name:	**S91 Hi (Pilot Certification for the Very Hot Climate)**



This certificate was awarded based on the following criteria for the very hot climate zone

Comfort	U_W = 0.82	≤	1.00 W/(m² K)
	$U_{W,installed}$	≤	1.05 W/(m² K)
	with U_g	=	0.90 W/(m² K)

very hot climate

phB

CERTIFIED COMPONENT

Passive House Institute

Passive House efficiency class	phE	phD	phC	phB	phA

www.passivehouse.com

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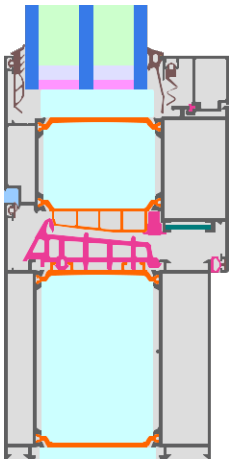
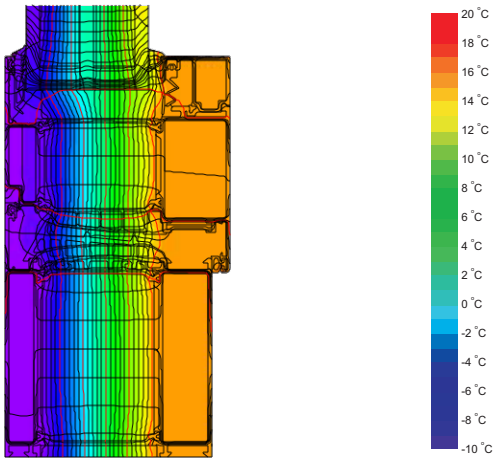


Calculation model



Isothermal

Description

Thermally separated aluminium frame with polyamide separators (Technoform Low Lambda PA 66 GF 25) and aerogel (Spaceloft, 0,016 W/(mK)). Pane thickness: 54 mm (6/18/6/18/6), rebate depth: 15 mm, spacer: SWISSPACER Ultimate with polysulfide secondary seal. Pilot certification for the very hot climate zone; due to the very recent introduction of the Passive House standard to this region the service life of such components is still to be fully demonstrated.

Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with U_g = 0.90 W/(m² K). If a higher quality glazing is used, the window U-values will improve as follows:

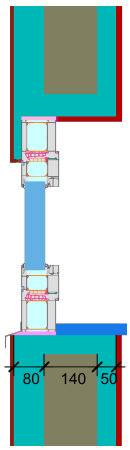
Glazing	U_g =	0.90	1.00	1.10	1.20	W/(m² K)
		↓	↓	↓	↓	
Window	U_W =	0.82	0.87	0.93	0.98	W/(m² K)

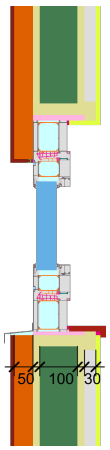
Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations performed in the context of certification is available from the manufacturer.

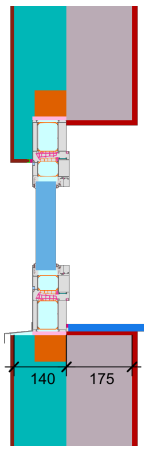
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense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

Formwork blocks (operable)	
U_{Wall} = 0.25 W/(m² K)	
	
$\Psi_{install}$	W/(m K)
Top	0.010
Side	0.010
Bottom	0.063
$U_{W,installed}$ = 0.88 W/(m² K)	

Lightweight timber (operable)	
U_{Wall} = 0.24 W/(m² K)	
	
$\Psi_{install}$	W/(m K)
Top	0.015
Side	0.015
Bottom	0.025
$U_{W,installed}$ = 0.87 W/(m² K)	

Exterior insulation and finishing system (EIFS) (operable)	
U_{Wall} = 0.23 W/(m² K)	
	
$\Psi_{install}$	W/(m K)
Top	0.007
Side	0.007
Bottom	0.015
$U_{W,installed}$ = 0.84 W/(m² K)	

Frame values		Frame width b_f mm	U-value frame U_f W/(m² K)	Ψ-glazing edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Flying Mullion	(FM1) 	268	0.60	0.030	0.75
Bottom	(OB1) 	178	0.57	0.032	0.76
Top	(OH1) 	178	0.57	0.032	0.76
Lateral	(OJ1) 	178	0.57	0.032	0.76
Spacer: SWISSPACER ULTIMATE				Secondary seal: Polysulfide	