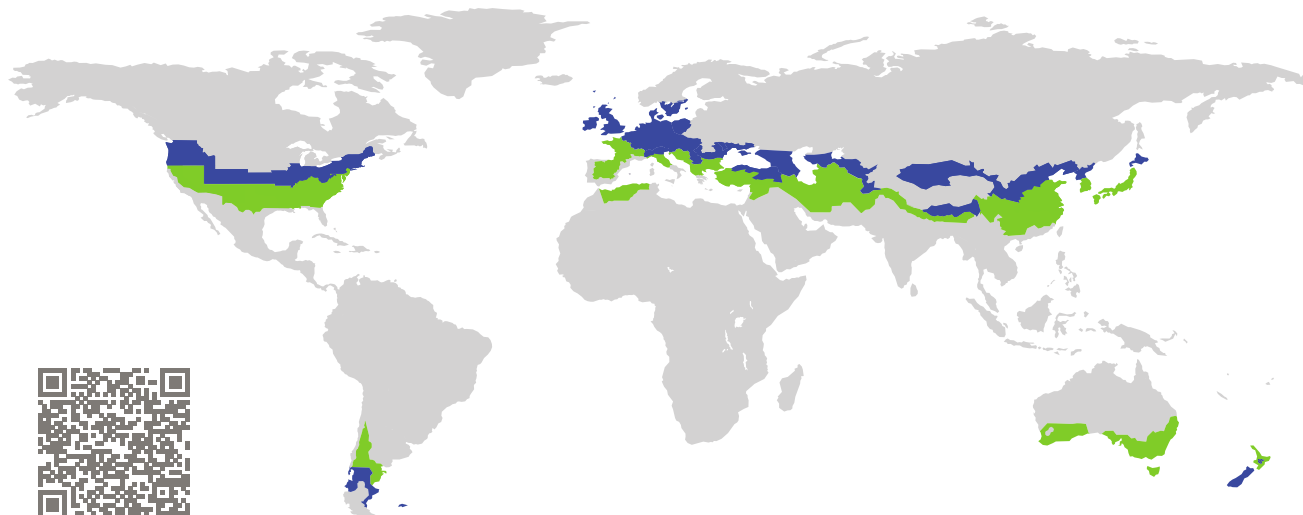


# CERTIFICATE

Certified Passive House Component

Component-ID 1023cw03 valid until 31st December 2017

Passive House Institute  
Dr. Wolfgang Feist  
64283 Darmstadt  
Germany

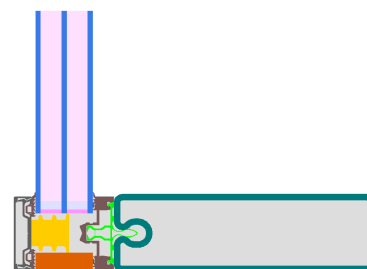


Category: **Curtain Wall**  
Manufacturer: **RAICO Bautechnik GmbH,  
Pfaffenhausen,  
Germany**  
Product name: **THERM+56 FS-I**

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

Comfort  $U_{CW} = 0.79 \leq 0.80 \text{ W}/(\text{m}^2 \text{ K})$   
 $U_{CW, \text{installed}} \leq 0.85 \text{ W}/(\text{m}^2 \text{ K})$   
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

phA+







cool, temperate climate



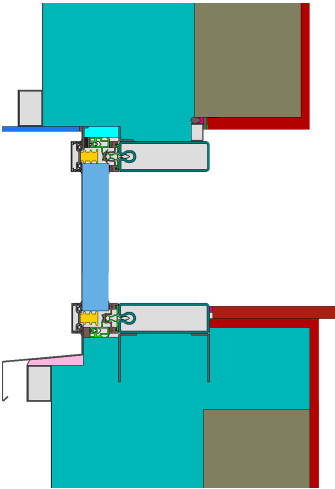
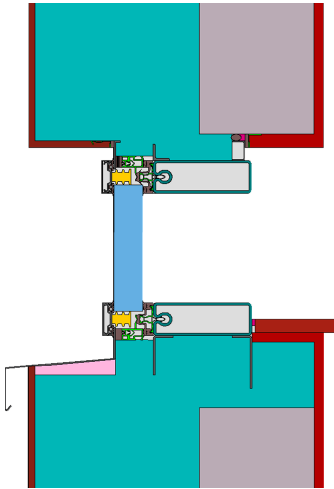
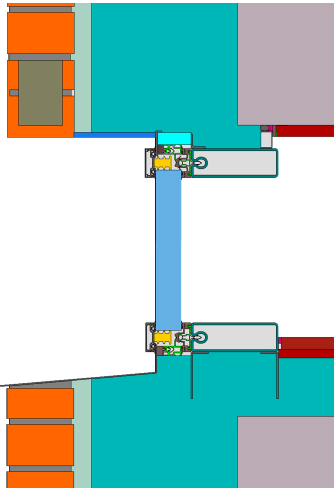
**CERTIFIED  
COMPONENT**

Passive House Institute



Frame values			Frame width $b_f$ mm	$U$ -value frame $U_f^1$ W/(m <sup>2</sup> K)	$\Psi$ -glass edge $\Psi_g$ W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Top fixed	(tof)		56	0.96	0.030	0.78
Side fixed	(sf)		56	0.93	0.031	0.78
Bottom fixed	(bof)		56	0.96	0.030	0.78
Mullion fixed	(m)		56	0.86	0.031	0.79
Transom fixed	(tf)		56	0.90	0.030	0.78
Transom 1 casement	(t1)		89	1.04	0.028	0.75
Spacer: SWISSPACER Ultimate			Secondary seal: Polysulfide			
Thermal glass carrier bridge <sup>2</sup> $\chi_{GT} = 0.004$ W/K						

### Validated installations

Ventilated facade (fixed glazing)	Exterior insulation and finishing system (EIFS) (fixed glazed)	Cavity wall (fixed glazing)
$U_{Wall} = 0.13$ W/(m <sup>2</sup> K)	$U_{Wall} = 0.13$ W/(m <sup>2</sup> K)	$U_{Wall} = 0.13$ W/(m <sup>2</sup> K)
		
$\Psi_{install}$ W/(m K)	$\Psi_{install}$ W/(m K)	$\Psi_{install}$ W/(m K)
Top 0.042	Top 0.044	Top 0.043
Left 0.042	Left 0.044	Left 0.043
Right 0.042	Right 0.044	Right 0.043
Bottom 0.054	Bottom 0.050	Bottom 0.054
$U_{W,installed} = 0.85$ W/(m <sup>2</sup> K)	$U_{W,installed} = 0.85$ W/(m <sup>2</sup> K)	$U_{W,installed} = 0.85$ W/(m <sup>2</sup> K)

<sup>1</sup> Includes  $\Delta U = 0.19$  W/(m<sup>2</sup> K). Determined through 3D - FEM Simulation

<sup>2</sup> Determined through 3D - FEM Simulation . Glas support type : Non-Metallic

