



RAICO

The Professionals' Profile.

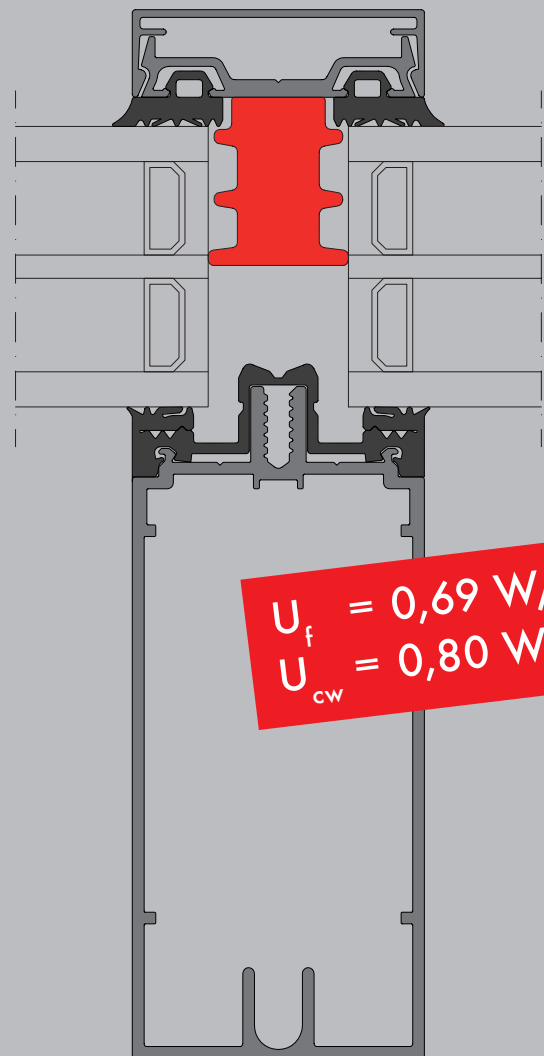
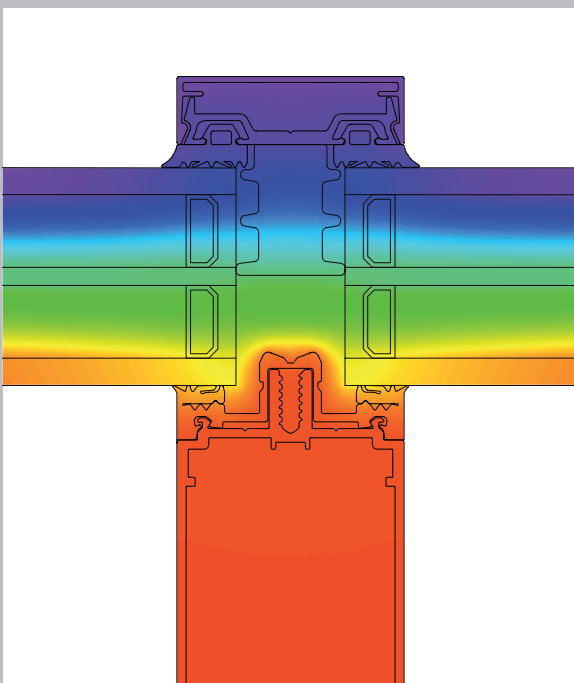
Passive-house certified curtain walls in aluminium, steel and timber.

THERM⁺ Passive-house certified curtain walls

- Certificated for aluminium, steel and timber
- Usage of standard screws for pressure profile
- Usage of RAICO-specific plastic glass carrier

Available in the following varieties

- THERM⁺ A-V System widths 50 and 56 mm
- THERM⁺ S-I System widths 50 and 56 mm
- THERM⁺ H-V System widths 50, 56 and 76 mm



*excluding screw influences

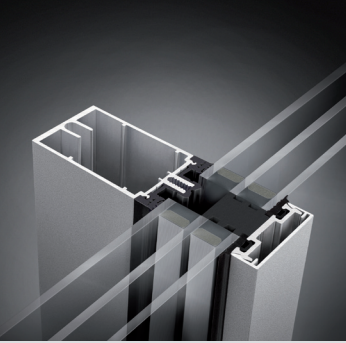
PASSIVE-HOUSE CURTAIN WALLS

THERM⁺

Saving energy and protecting our planet's climate are both a crucial challenge and a great opportunity to the building industry in the coming years. State-of-the-art technologies and modern systems contribute decisively to reach the ambitious mandatory goals of climate protection.

Even today, RAICO Bautechnik is able to meet these demands. A consistent, optimized design and the use of innovative components result in maximum energy savings.

RAICO first system provider to offer curtain walls in aluminium, wood, and steel certified according to passive house criteria. RAICO is setting a new market standard for climate protection and sustainability.



Certificate
valid until Dec 31st, 2010

Passivhaus Institut
Dr. Wolfgang Feist
Rheinstraße 44/46
D-64283 Darmstadt
www.passiv.de

Component suitable for Passive Houses: **Curtain-wall-facade**
Manufacturer: **RAICO Bautechnik GmbH, D-87772 Pfaffenhausen**
Name of product: **THERM+ 50 A-V**

The following criteria have been verified to award the certificate:
Passive House comfort criterion:
Under standard conditions (use of glazing with $g_{gl} = 0.70$ (70%)), curtain-wall-gld: 1.20m x 2.50m, the U-value of the curtain-wall-facade fulfils the following condition: $U_{CW} = 0.80 \leq 0.80 \text{ W/(m}^2\text{K)}$

Installing the window suitable for Passive Houses:
Provided that the thermal quality of the installation is equivalent to that of the detailed drawings given in the appendix, or better, the curtain wall module, including all thermal bridge effects, fulfils the following condition: $U_{CW,installed} \leq 0.85 \text{ W/(m}^2\text{K)}$

Characteristic frame values:

Construction	U-Value [W/(m ² K)]	Width [mm]	Spacer	W [%] [W/(m ² K)]	Glass brackets	g _{gl} [WIK]
mullion (L)	0.87	50	Swisspacer V	0.038	PVC, metal screwed	0.005
transom (L)	0.86	50				

This construction is made of aluminium. The suitability for Passive Houses was checked only with the spacer denoted above. Thermally insulating spacers, especially those made of aluminium, lead to significantly higher thermal losses. The same is true for the glass brackets. This certificate is only valid with the data sheet. The criteria are valid for the cool temperate climate.

Curtain-wall-facade:
 $U_{CW} / U_{gl} = 0.87 / 0.86 \text{ W/(m}^2\text{K)}$
 $W_{gl} = 0.038 \text{ W/(m}^2\text{K)}$
 $g_{gl} = 0.005 \text{ WIK}$
Width = 50 mm

Component suitable for Passive Houses
Dr. Wolfgang Feist

Certificate
valid until Dec 31st, 2010

Passivhaus Institut
Dr. Wolfgang Feist
Rheinstraße 44/46
D-64283 Darmstadt
www.passiv.de

Component suitable for Passive Houses: **Curtain-wall-facade**
Manufacturer: **RAICO Bautechnik GmbH, D-87772 Pfaffenhausen**
Name of product: **THERM+ 56 A-V**

The following criteria have been verified to award the certificate:
Passive House comfort criterion:
Under standard conditions (use of glazing with $g_{gl} = 0.70$ (70%)), curtain-wall-gld: 1.20m x 2.50m, the U-value of the curtain-wall-facade fulfils the following condition: $U_{CW} = 0.80 \leq 0.80 \text{ W/(m}^2\text{K)}$

Installing the window suitable for Passive Houses:
Provided that the thermal quality of the installation is equivalent to that of the detailed drawings given in the appendix, or better, the curtain wall module, including all thermal bridge effects, fulfils the following condition: $U_{CW,installed} \leq 0.85 \text{ W/(m}^2\text{K)}$

Characteristic frame values:

Construction	U-Value [W/(m ² K)]	Width [mm]	Spacer	W [%] [W/(m ² K)]	Glass brackets	g _{gl} [WIK]
mullion (L)	0.85	56	Swisspacer V	0.038	PVC, metal screwed	0.005
transom (L)	0.85	56				

This construction is made of aluminium. The suitability for Passive Houses was checked only with the spacer denoted above. Thermally insulating spacers, especially those made of aluminium, lead to significantly higher thermal losses. The same is true for the glass brackets. This certificate is only valid with the data sheet. The criteria are valid for the cool temperate climate.

Curtain-wall-facade:
 $U_{CW} / U_{gl} = 0.85 / 0.85 \text{ W/(m}^2\text{K)}$
 $W_{gl} = 0.038 \text{ W/(m}^2\text{K)}$
 $g_{gl} = 0.005 \text{ WIK}$
Width = 56 mm

Component suitable for Passive Houses
Dr. Wolfgang Feist

Certificate
valid until Dec 31st, 2010

Passivhaus Institut
Dr. Wolfgang Feist
Rheinstraße 44/46
D-64283 Darmstadt
www.passiv.de

Component suitable for Passive Houses: **Curtain-wall-facade**
Manufacturer: **RAICO Bautechnik GmbH, D-87772 Pfaffenhausen**
Name of product: **THERM+ 50 S-I**

The following criteria have been verified to award the certificate:
Passive House comfort criterion:
Under standard conditions (use of glazing with $g_{gl} = 0.70$ (70%)), curtain-wall-gld: 1.20m x 2.50m, the U-value of the curtain-wall-facade fulfils the following condition: $U_{CW} = 0.80 \leq 0.80 \text{ W/(m}^2\text{K)}$

Installing the window suitable for Passive Houses:
Provided that the thermal quality of the installation is equivalent to that of the detailed drawings given in the appendix, or better, the curtain wall module, including all thermal bridge effects, fulfils the following condition: $U_{CW,installed} \leq 0.85 \text{ W/(m}^2\text{K)}$

Characteristic frame values:

Construction	U-Value [W/(m ² K)]	Width [mm]	Spacer	W [%] [W/(m ² K)]	Glass brackets	g _{gl} [WIK]
mullion (L)	0.87	50	Swisspacer V	0.038	PVC, metal screwed	0.005
transom (L)	0.86	50				

This construction is made of aluminium. The suitability for Passive Houses was checked only with the spacer denoted above. Thermally insulating spacers, especially those made of aluminium, lead to significantly higher thermal losses. The same is true for the glass brackets. This certificate is only valid with the data sheet. The criteria are valid for the cool temperate climate.

Curtain-wall-facade:
 $U_{CW} / U_{gl} = 0.87 / 0.86 \text{ W/(m}^2\text{K)}$
 $W_{gl} = 0.038 \text{ W/(m}^2\text{K)}$
 $g_{gl} = 0.005 \text{ WIK}$
Width = 50 mm

Component suitable for Passive Houses
Dr. Wolfgang Feist