

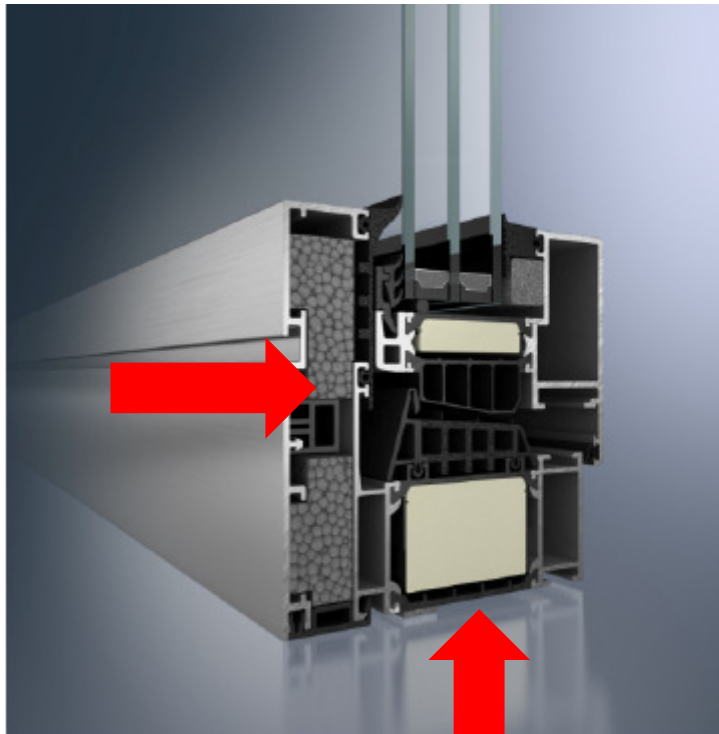


**I sistemi in alluminio ad elevato isolamento  
certificati/livello Passivhaus**

**Giorgio Nobile - Direttore Tecnico**

**SCHÜCO**

AWS 112.IC Costruzione per finestre certificata Passivhaus



Finestra AWS 112.IC

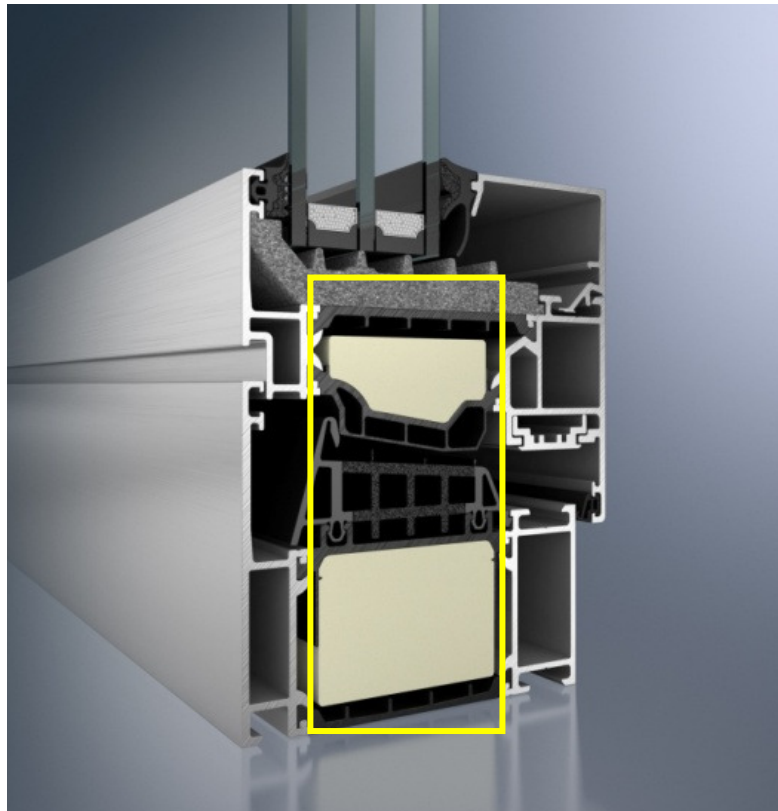
**AWS 112.IC**

**$U_w \leq 0,8 \text{ W/m}^2\text{k}$**   
 **$U_g = 0,7 \text{ W/m}^2\text{k}$**   
 **$U_w \text{ installata} \leq 0,85 \text{ W/m}^2\text{k}$**



- Fenster: B x H = 1,23 m x 1,48 m

AWS 90.SI Costruzione per finestre livello Passivhaus



AWS 90.SI  $U_f$  1,0 W/m<sup>2</sup>k

**AWS90.SI**

**AWS 90.SI**

**$U_w \leq 0,8$  W/m<sup>2</sup>k**

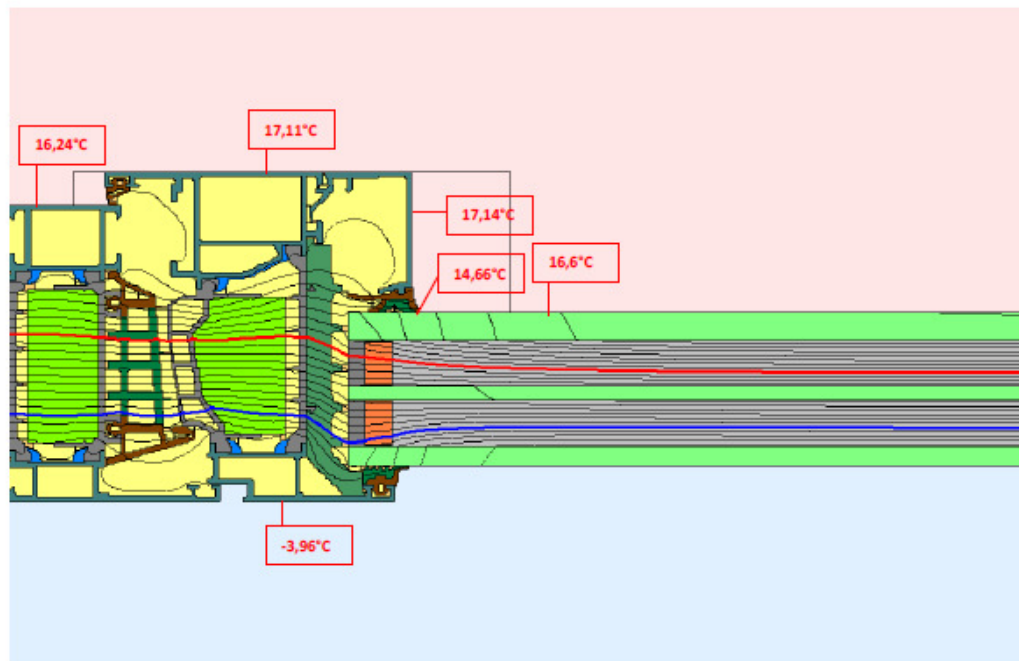
**$U_g = 0,6$  W/m<sup>2</sup>k**

**$U_w$  installata  $\leq 0,85$  W/m<sup>2</sup>k**

AWS112.IC-AWS 90.SI temperature superficiali

Isoterme – Calcolo eseguito secondo la UNI EN ISO 10077-2

Via del Progresso, 42 – 35127 – Padova  
Telefono +39 049-739 2000  
Telefax +39 049-739 2202



**Dati:** Ug vetro: 0,6 W/m²K  
Temperatura esterna: -5°C  
Temperatura interna: 20°C  
Umidità relativa: 50%

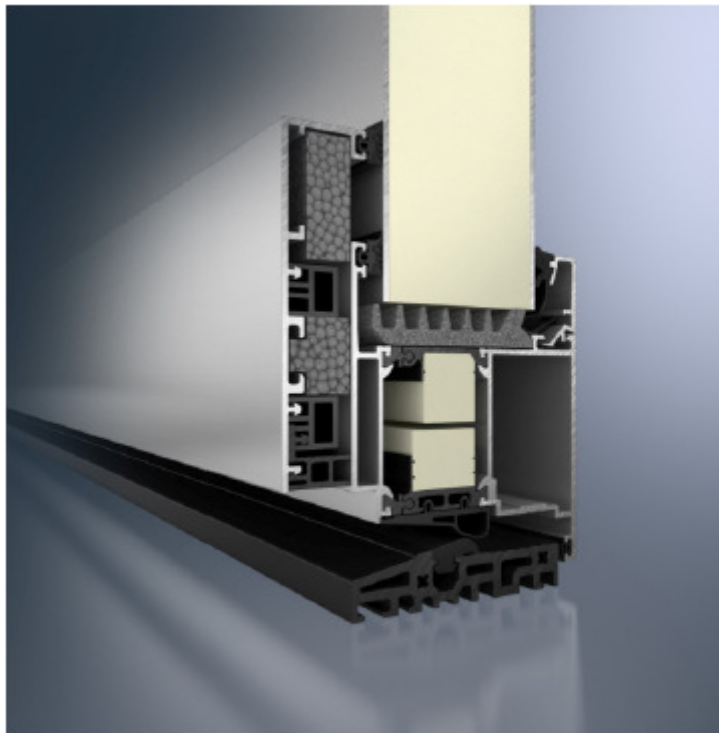
**Sistema:** AWS 90.SI  
**Nodo Laterale**

— Linea rossa 10°C  
— Linea blu 0°C

SCHÜCO International Italia  
Zanotto Mattia

Materiale	R (m²K/W)
boundary condition inside 0,13, 20°C, 50%	0,13
boundary condition inside 0,20, 20°C, 50%	0,20
boundary condition outside 0,04, -5°C, 80%	0,04
Aria 10077-2 (Auto)	
Luft 10077-2 (<=2mm)	
Materiale	L (W/mK)
EPDM	0,25
Aluminium (Si-Leg) e=0,3	160
Aluminium (Si-Leg) e=0,9	160
Butyl 0.24	0,24
Polyamid 25% GF	0,30
Float 10077	1,0
Polyethylschaum 040	0,04
Moosgummi 060	0,06
PUR Gießschaum in PASTeg 0.033	0,033
Polisolfuro	0,40
SAN 35%GF Swisspacermaterial	0,16
SZR L=0.0189	0,019

ADS 112.SI Costruzione per porte livello Passivhaus



Porta ADS 112.IC

**ADS 112.IC**

**$U_d$  in opera  $\leq 0,80 \text{ W/m}^2\text{k}$**

**$U_p \leq 0,7 \text{ W/m}^2\text{k}$**  (possibile ad esempio con anta rivestita ed isolamento con  $\lambda 0,03$   $s=61 \text{ mm}$ )

**$B \times H = 1,1 \text{ m} \times 2,2 \text{ m}$**

**Caratteristiche supplementari**

Tenuta all'aria classe 3

$Q_{100} \leq 2,25 \text{ m}^3/\text{hm}$  (100) Pa

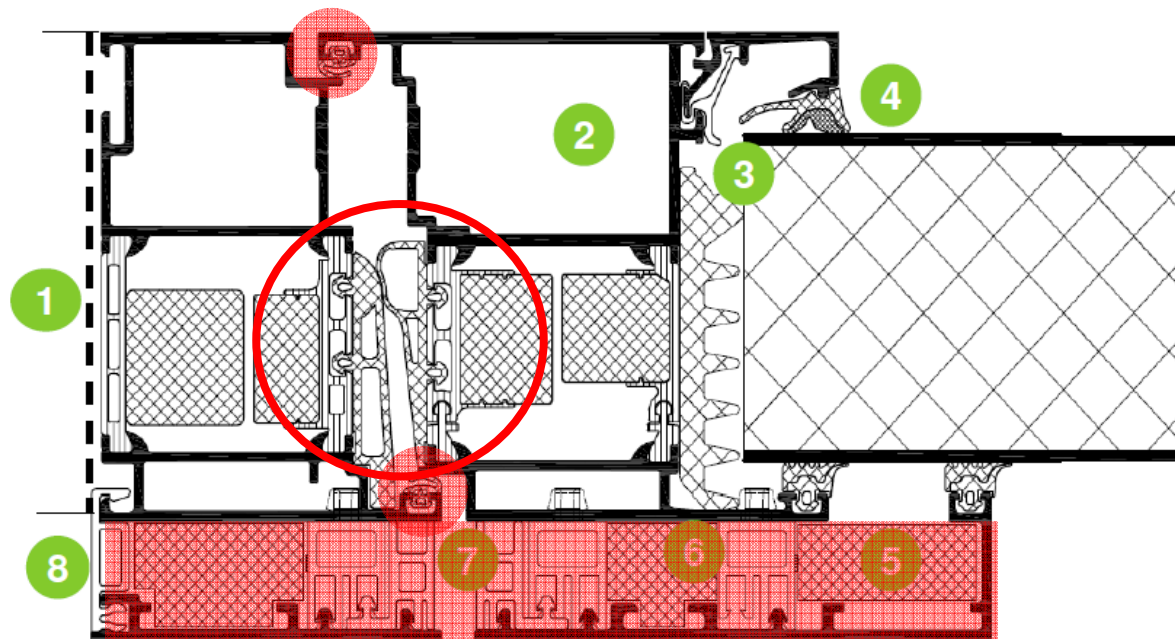
Secondo le condizioni

1. Condizioni di laboratorio

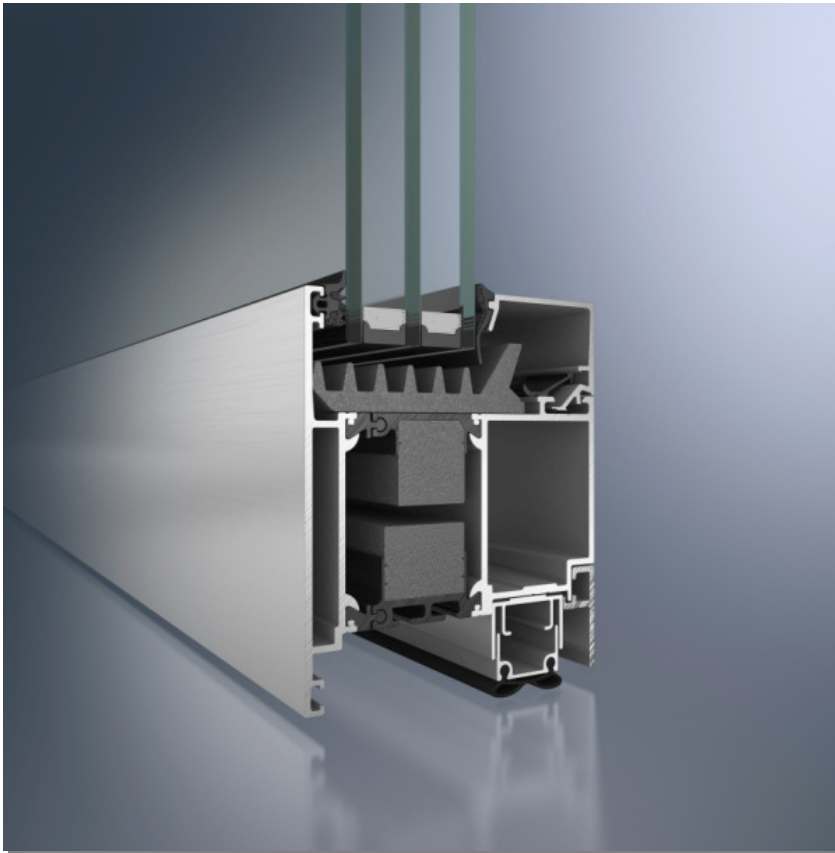
2. Condizioni climatiche interne  $23^\circ$ , esterne  $-15^\circ$

3. Condizioni climatiche interne  $25^\circ$ , esterne  $+80^\circ$

ADS 112.SI La porta con la tenuta di una finestra

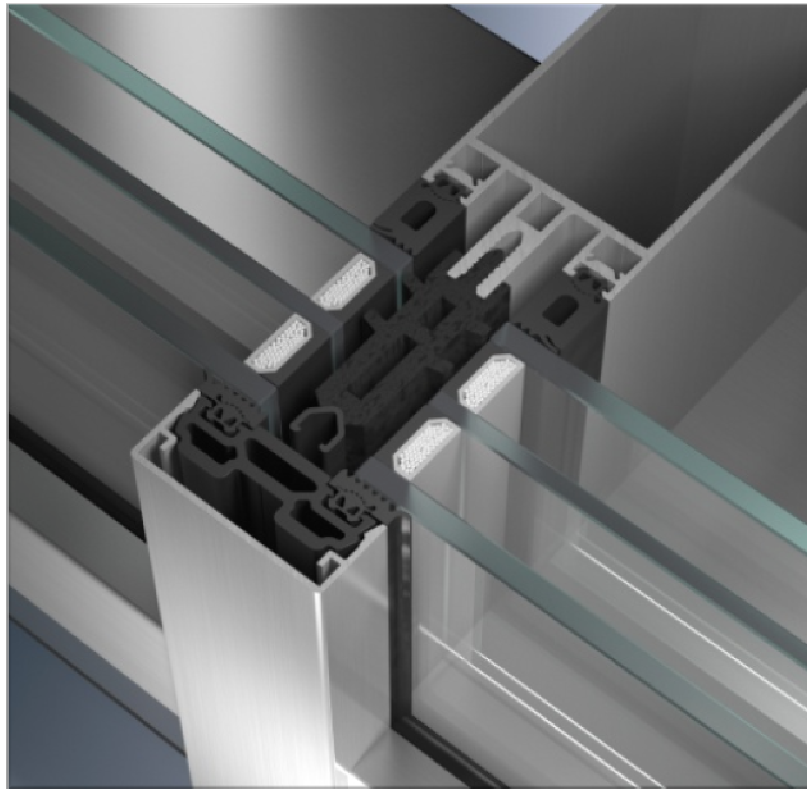


ADS 90.SI Costruzione per porte ad elevato isolamento termico



ADS 90 PL.SI  $U_f$  1,4 W/m<sup>2</sup>K

La facciata a montanti e traversi certificata Passivhaus



Facciata a montanti e traversi FW50/60+

**Data Sheet** Schüco International KG, FW 60+.SI PH zert. (Alu Anpressl.)

**Manufacturer** Schüco International KG  
33609 Bielefeld, GERMANY  
Tel.: +49 (0) 521 783 0  
www.schueco.de

**Description**  
Aluminium construction, Aluminium covering-strip. Alu ressure-strip, inside covered by reflecting Aluminium foil. PE-foam insulator in the glazing rebate, stainless steel glass-carrier. Used Pane: 48 mm (6/16/4/16/6), intersection of the Glass: 18 mm. Used spacer: Swisspacer V

**Thermal data**

	U <sub>F</sub> -value [W/(m²K)]	Width [mm]	Ψ <sub>g</sub> [W/(mK)]	f <sub>Rsi=0.20</sub> [-]
Spacer			Swisspacer V*	
Transom (t)	0.82	60	0.036	0.83
Mullion (m)	0.83	60	0.035	
Opening element				
-				
Thermal glass carrier bridge λ <sub>GCT</sub> [W/K]:				0.015
1: Includes ΔU = 0.17 W/(m²K). Determined by measurement (ift)				
2: Determined by 3D thermal flux simul. (PHI)				

Depending on the thermal losses through opaque elements, windows are categorised in to efficiency classes. These thermal losses include the losses through the frame, multiplied by its width, the thermal bridge at the edge bond as well as the length of the edge bond. Please ask the manufacturer for a detailed report.

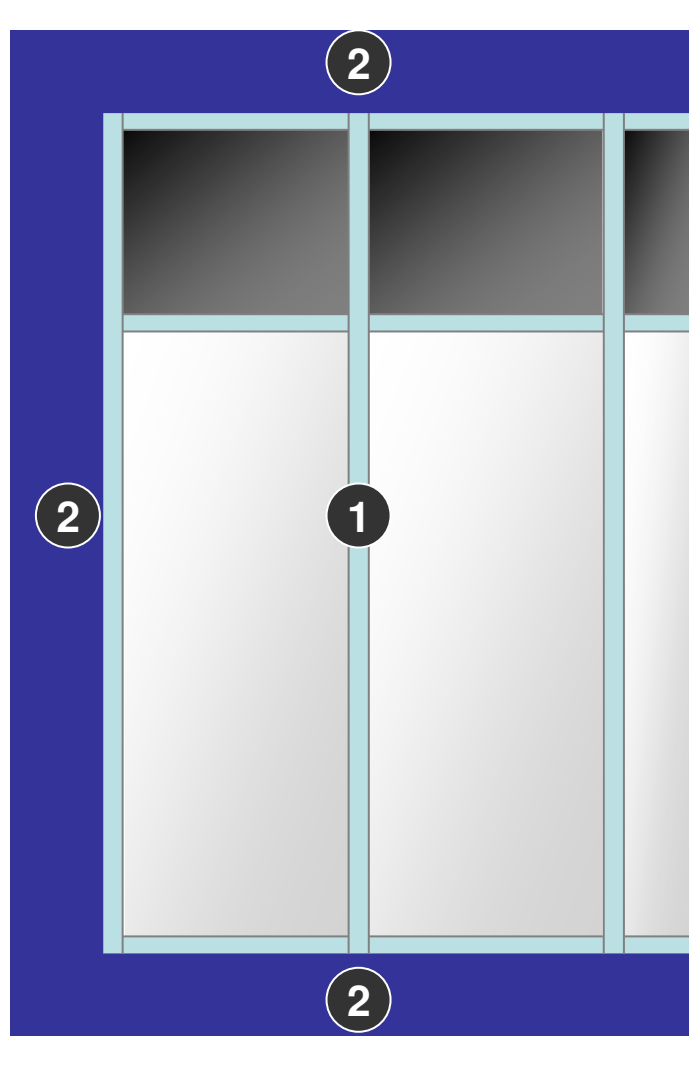
\* Spacers of lower thermal quality leading to higher thermal losses and lower temperatures.

[www.passivehouse.com](http://www.passivehouse.com)

Passive House Institute Page 1/1



Le caratteristiche della facciata

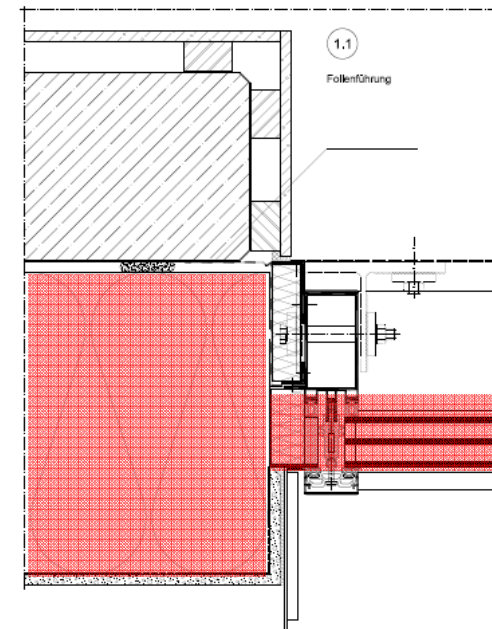


- 1 Criteri di comfort Passivhaus:

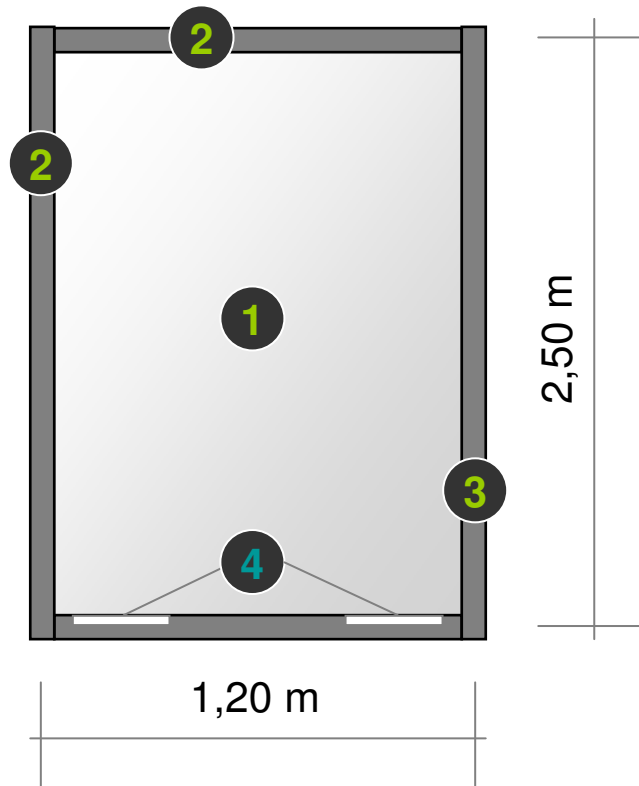
$$U_{cw} \leq 0,80 \text{ W/m}^2\text{K}$$

- 2 Passivhaus a facciata posata  
Comprensiva ponti termici da posa

$$U_{cw} \leq 0,85 \text{ W/m}^2\text{K}$$



## le caratteristiche dei componenti

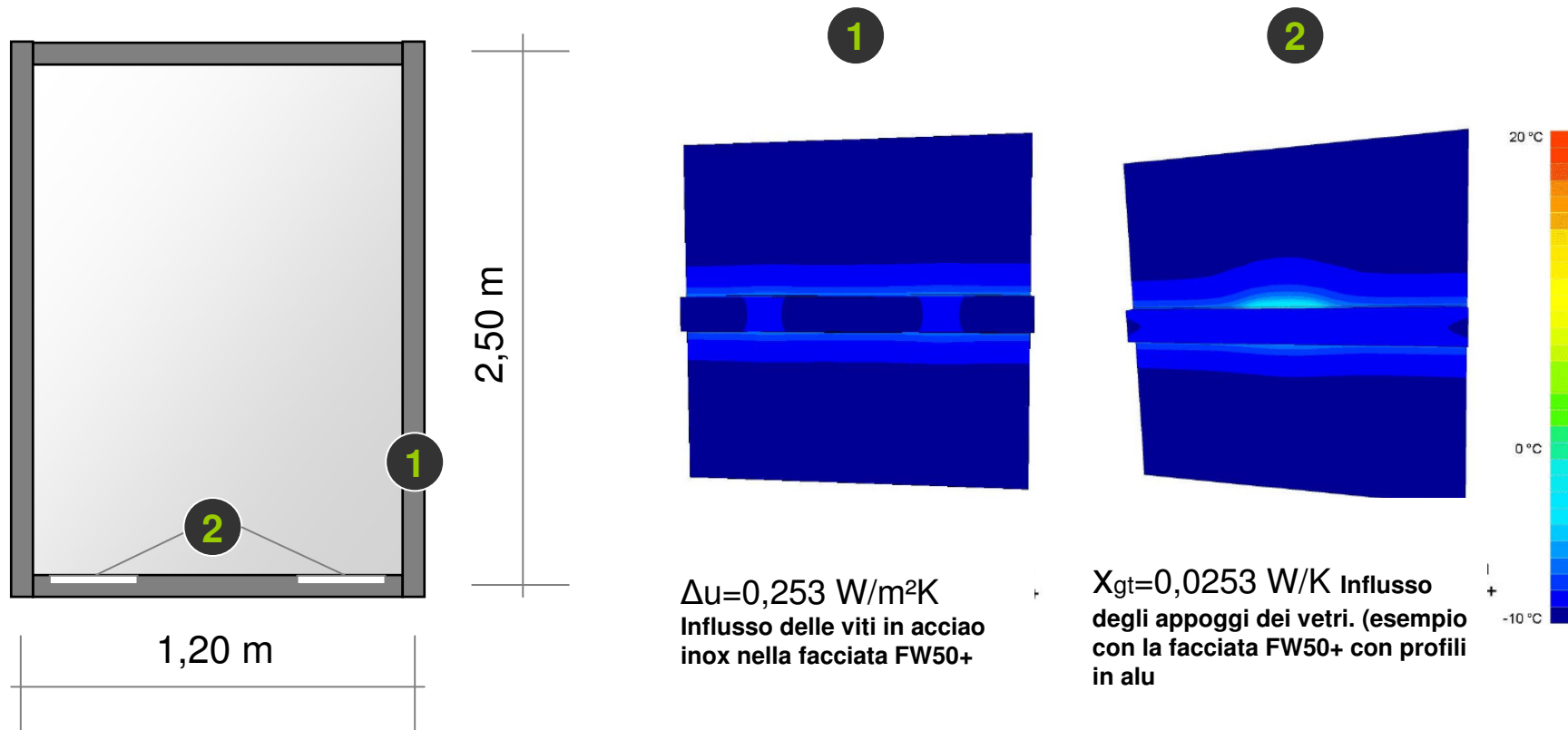


Dimensioni elemento standard 1,20 m x 2,50 m

- 1 Vetrocamera doppia intercapedine  $U_g = 0,70 \text{ W/m}^2\text{K}$
- 2 Valore U montanti e traversi
- 3 Valore delta U per l'influsso delle viti
- 4 Valore per l'influsso del supporto del vetro

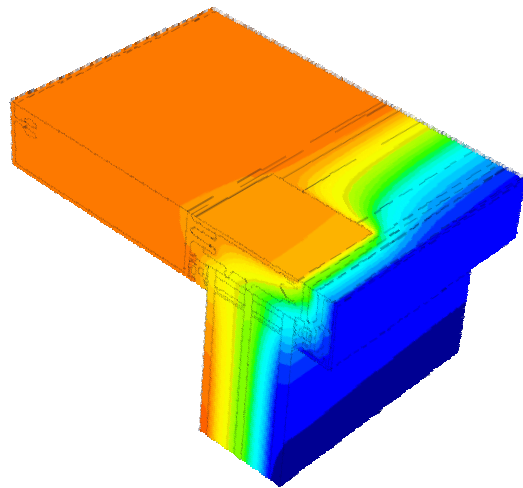
Facciata a montanti e traversi FW50/60+

L'analisi dei ponti termici

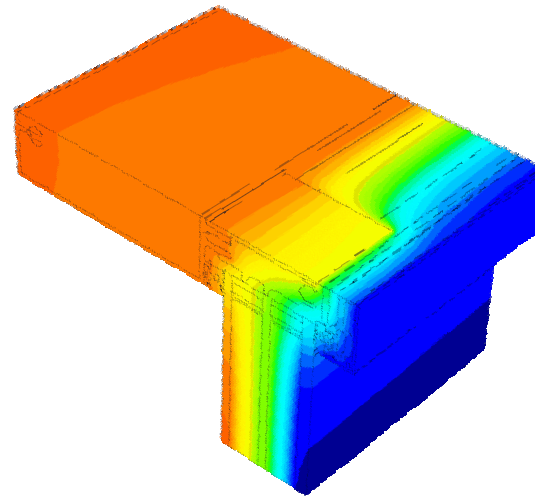


Facciata a montanti e traversi FW50/60+, i ponti termici

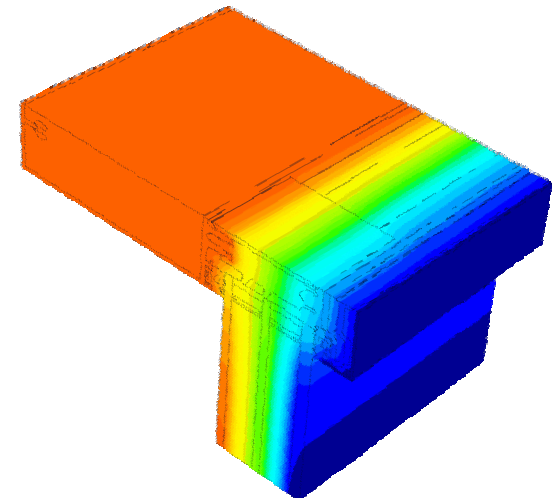
I componenti innovativi per ridurre i ponti termici



Supporto in alluminio  
 $\lambda = 160 \text{ W/(mK)}$

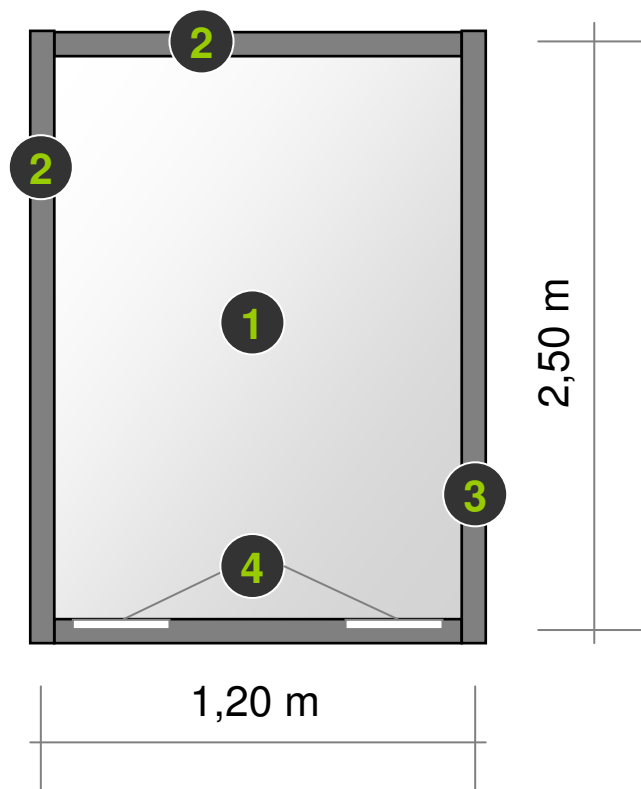


Supporto in acciaio inox  
 $\lambda = 17 \text{ W/(mK)}$



Supporto in GFK  
 $\lambda = 0,3 \text{ W/(mK)}$

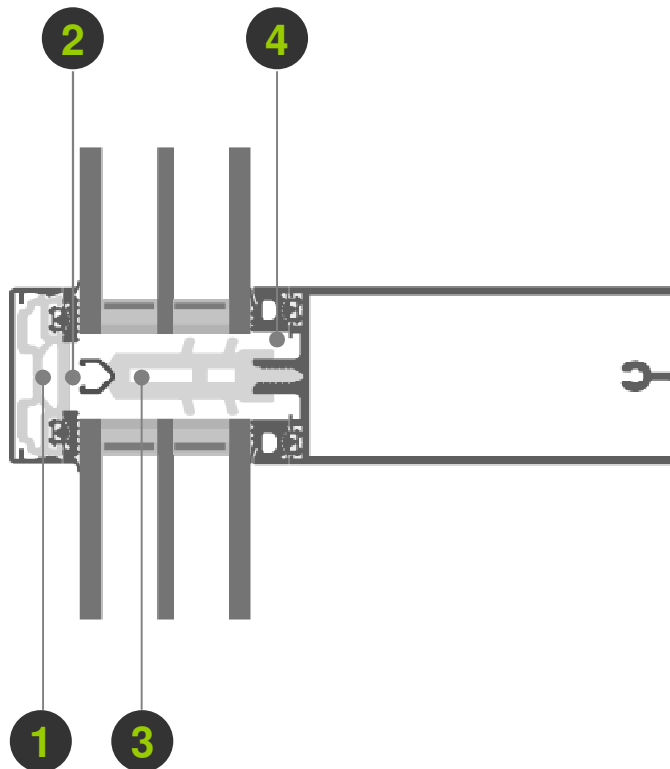
le caratteristiche dei componenti



- 1** Vetro a doppia intercapedine  $U_g = 0,70 \text{ W/m}^2\text{K}$   
 Distanziale:  
 Valore Psi Swisspacer V:  $0,035 \text{ W/mK}$
- 2** Valore U Montanti:  $0,68 \text{ W/m}^2\text{K}$   
 Valore U Traversi:  $0,67 \text{ W/m}^2\text{K}$
- 3** Valore Delta U:  
 (Influsso delle viti)  $0,17 \text{ W/m}^2\text{K}$
- 4** Valore Xgt:  
 (Influsso degli appoggi del vetro)  $0,014 \text{ W/K}$

**Valori riferiti alla costruzione FW 50+.SI con copertina in alluminio**

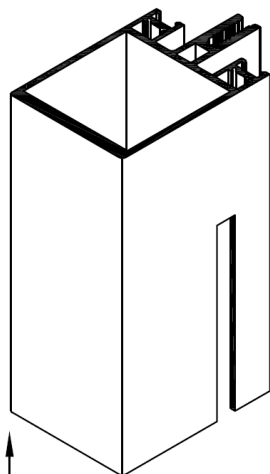
## le caratteristiche della zona di isolamento



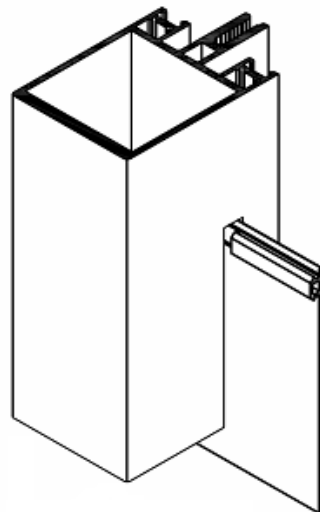
- 1 Copertine in GFK o alluminio con isolante**  
Per la riduzione delle dispersioni termiche dal bordo del vetro e dalle viti.
- 2 Strato riflettente interno**  
Per la riduzione dell'irraggiamento dalla sede del vetro
- 3 Innovativo listello isolante SI**  
Materiali ad elevato isolamento con valori lambda molto bassi consentono di raggiungere un elevato isolamento termico.
- 4 Supporti del vetro a bassa conducibilità**  
Supporti del vetro in acciaio con una conducibilità termica ridotta di 1,4 volte.

Gli accessori speciali per aumentare la tenuta

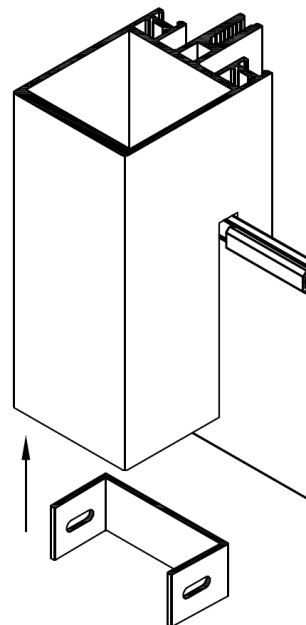
1



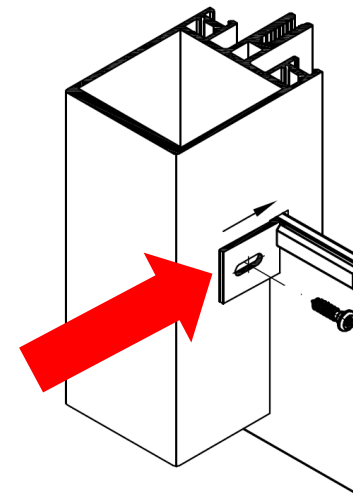
2



3



4



Guaina in EPDM

Particolare di chiusura



SCHÜCO

Grazie dell'attenzione