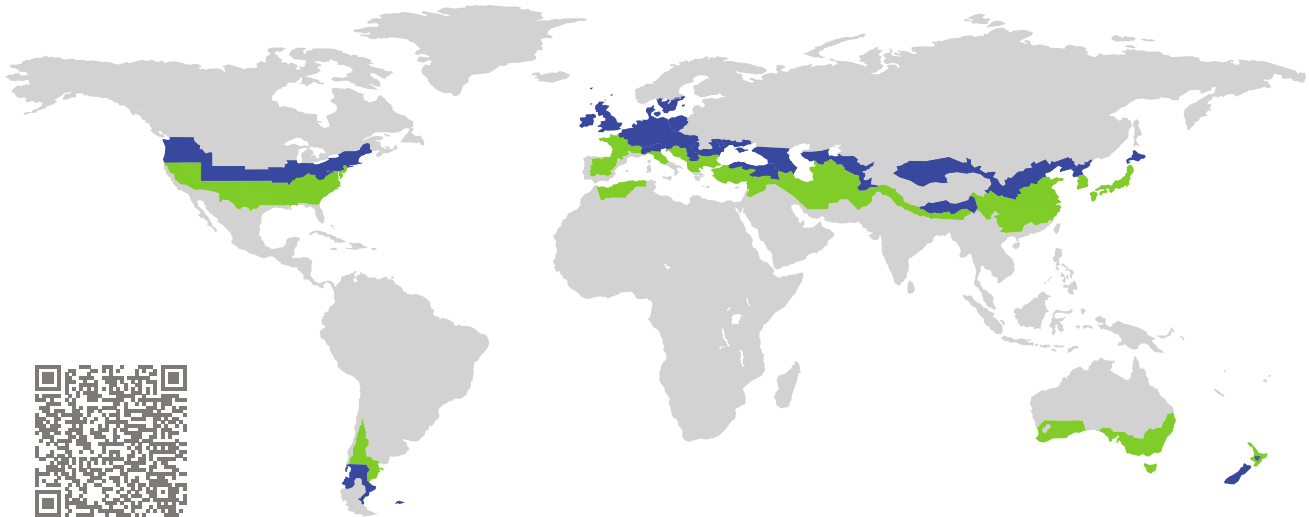


CERTIFICATE

Certified Passive House Component

Component-ID 1830ws03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

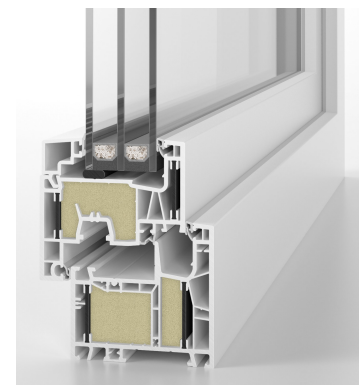


Category: **Window system**
Manufacturer: **aluplast GmbH,
Karlsruhe,
Germany**
Product name: **energeto neo**

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

Comfort $U_W = 0.80 \leq 0.80 \text{ W}/(\text{m}^2 \text{ K})$
 $U_{W, \text{installed}}$ $\leq 0.85 \text{ W}/(\text{m}^2 \text{ K})$
with $U_g = 0.70 \text{ W}/(\text{m}^2 \text{ K})$

Hygiene $f_{R_{si}=0.25} \geq 0.70$
Airtightness $Q_{100} = 0.22 \leq 0.25 \text{ m}^3/(\text{h m})$



cool, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute

Passive House
efficiency class

phE

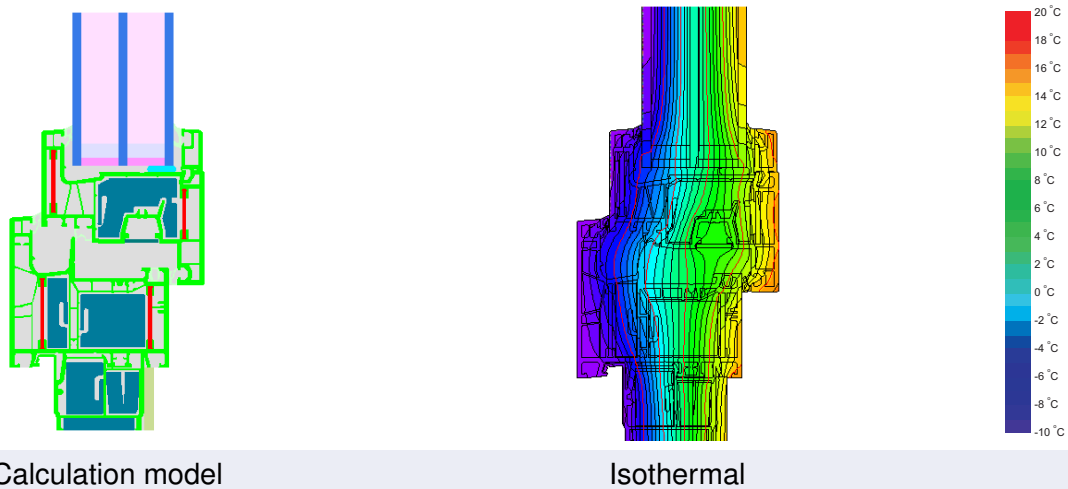
phD

phC

phB

phA

www.passivehouse.com



Description

Vinyl window frame, insulated by EPS-foam 0,031 W/(mK)), reinforced by Polyamide with 25% glassfibre (0,30 W/(mK)). With the tested combination, sash sizes of 1m * 2.25m and with coloured profiles 1m * 2.05m are possible. For larger elements, the aluplast GmbH processing guidelines must be followed. The dewpoint-criteriom of the threshold is achieved in combination with the installation situation. Note: At some additional not installed frame sections the temperature factor 0.7 is not achieved. Change to other profiles, if necessary. Pane thickness: 48 mm (4/18/4/18/4), rebate depth: 18 mm. Spacer: SWISSPACER Ultimate.

Explanation




















The window U-values were calculated for the test window size of 2.46 m × 1.48 m with $U_g = 0.70 \text{ W}/(\text{m}^2 \text{ K})$. If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	$U_g =$	0.70	0.64	0.58	0.52	W/(m ² K)
		↓	↓	↓	↓	
Window	$U_W =$	0.80	0.76	0.72	0.68	W/(m ² 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.

Frame values			Frame width b_f mm	U -value frame U_f W/(m ² K)	Ψ -glazing edge Ψ_g W/(m K)	Temp. Factor $f_{RSI=0.25}$ [-]
Mullion fixed	(0M1)		94	1.13	0.026	0.72
Transom fixed	(0T1)		94	1.13	0.026	0.72
Mullion 1 casement	(1M1)		136	0.88	0.026	0.71
Mullion 1 casement	(1M2)		136	1.05	0.025	0.66
Transom 1 casement	(1T1)		136	0.88	0.026	0.71
Transom 1 casement	(1T2)		137	1.05	0.026	0.66
Mullion 2 casements	(2M1)		178	0.89	0.026	0.72
Mullion 2 casements	(2M2)		178	0.99	0.026	0.65
Transom 2 casements	(2T1)		178	0.89	0.026	0.72
Transom 2 casements	(2T2)		178	0.99	0.025	0.65
Corner	(CO1)		316	0.52	0.022	0.74
Bottom fixed	(FB1)		103	0.78	0.026	0.74
Top fixed	(FH1)		73	0.70	0.026	0.74
Lateral fixed	(FJ1)		73	0.70	0.026	0.74
Flying Mullion	(FM1)		138	0.88	0.026	0.71
Flying Mullion	(FM2)		138	0.98	0.025	0.65
Bottom	(OB1)		145	0.84	0.026	0.72
Top	(OH1)		115	0.82	0.026	0.74
Lateral	(OJ1)		115	0.82	0.026	0.74


Spacer: SWISSPACER ULTIMATE


Secondary seal: Polysulfide

Frame values	Frame width b_f mm	U-value frame U_f W/(m ² K)	Ψ -glazing edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Threshold (OT1) 	85	1.42	0.026	0.63
Spacer: SWISSPACER ULTIMATE		Secondary seal: Polysulfide		


 **Mullion**
fixed


$b_f = 94 \text{ mm}$
 $U_f = 1.13 \text{ W/(m}^2 \text{ K)}$
 $\Psi_g = 0.026 \text{ W/(m K)}$
 $f_{Rsi} = 0.72$




 **Transom**
fixed


$b_f = 94 \text{ mm}$
 $U_f = 1.13 \text{ W/(m}^2 \text{ K)}$
 $\Psi_g = 0.026 \text{ W/(m K)}$
 $f_{Rsi} = 0.72$




 **Mullion**
1 casement

$b_f = 136 \text{ mm}$
 $U_f = 0.88 \text{ W/(m}^2 \text{ K)}$
 $\Psi_g = 0.026 \text{ W/(m K)}$
 $f_{Rsi} = 0.71$



 **Mullion**
1 casement

$b_f = 136 \text{ mm}$
 $U_f = 1.05 \text{ W/(m}^2 \text{ K)}$
 $\Psi_g = 0.025 \text{ W/(m K)}$
 $f_{Rsi} = 0.66$





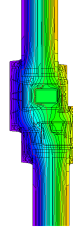
Transom
1 casement

$$b_f = 136 \text{ mm}$$

$$U_f = 0.88 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

$$f_{Rsi} = 0.71$$



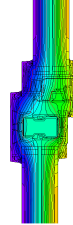
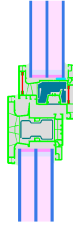
Transom
1 casement

$$b_f = 137 \text{ mm}$$

$$U_f = 1.05 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

$$f_{Rsi} = 0.66$$



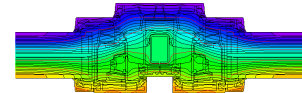
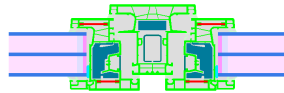
Mullion
2 casements

$$b_f = 178 \text{ mm}$$

$$U_f = 0.89 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

$$f_{Rsi} = 0.72$$



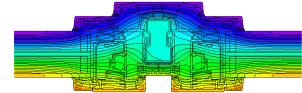
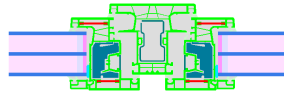
Mullion
2 casements

$$b_f = 178 \text{ mm}$$

$$U_f = 0.99 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

$$f_{Rsi} = 0.65$$



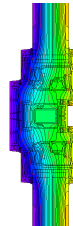
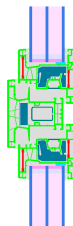
Transom
2 casements

$$b_f = 178 \text{ mm}$$

$$U_f = 0.89 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

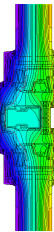
$$f_{Rsi} = 0.72$$





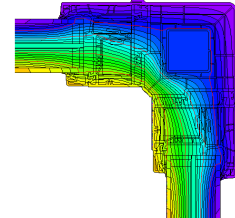
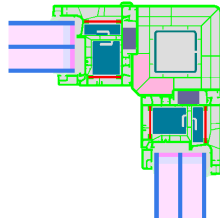
Transom 2 casements

$$b_f = 178 \text{ mm}$$
$$U_f = 0.99 \text{ W}/(\text{m}^2 \text{ K})$$
$$\Psi_g = 0.025 \text{ W}/(\text{m K})$$
$$f_{Rsi} = 0.65$$



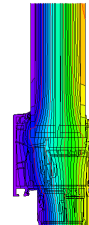
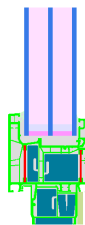
Corner

$$b_f = 316 \text{ mm}$$
$$U_f = 0.52 \text{ W}/(\text{m}^2 \text{ K})$$
$$\Psi_g = 0.022 \text{ W}/(\text{m K})$$
$$f_{Rsi} = 0.74$$



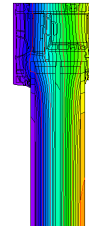
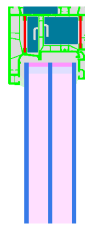
Bottom fixed

$$b_f = 103 \text{ mm}$$
$$U_f = 0.78 \text{ W}/(\text{m}^2 \text{ K})$$
$$\Psi_g = 0.026 \text{ W}/(\text{m K})$$
$$f_{Rsi} = 0.74$$



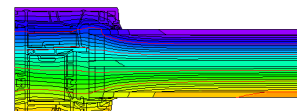
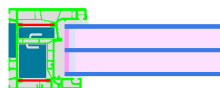
Top fixed

$$b_f = 73 \text{ mm}$$
$$U_f = 0.70 \text{ W}/(\text{m}^2 \text{ K})$$
$$\Psi_g = 0.026 \text{ W}/(\text{m K})$$
$$f_{Rsi} = 0.74$$



Lateral fixed

$$b_f = 73 \text{ mm}$$
$$U_f = 0.70 \text{ W}/(\text{m}^2 \text{ K})$$
$$\Psi_g = 0.026 \text{ W}/(\text{m K})$$
$$f_{Rsi} = 0.74$$





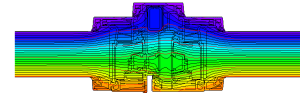
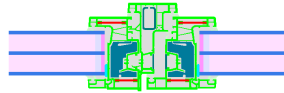
Flying Mullion

$$b_f = 138 \text{ mm}$$

$$U_f = 0.88 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

$$f_{Rsi} = 0.71$$



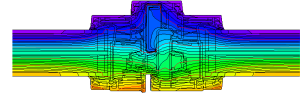
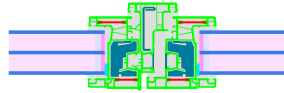
Flying Mullion

$$b_f = 138 \text{ mm}$$

$$U_f = 0.98 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.025 \text{ W/(m K)}$$

$$f_{Rsi} = 0.65$$



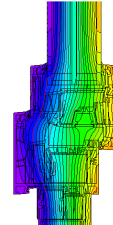
Bottom

$$b_f = 145 \text{ mm}$$

$$U_f = 0.84 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

$$f_{Rsi} = 0.72$$



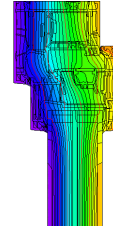
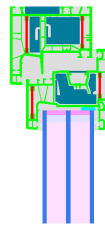
Top

$$b_f = 115 \text{ mm}$$

$$U_f = 0.82 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

$$f_{Rsi} = 0.74$$



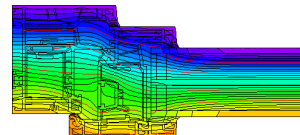
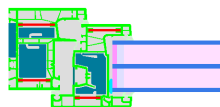
Lateral

$$b_f = 115 \text{ mm}$$

$$U_f = 0.82 \text{ W/(m}^2 \text{ K)}$$

$$\Psi_g = 0.026 \text{ W/(m K)}$$

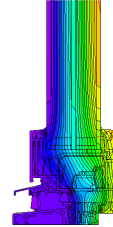
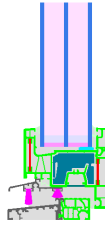
$$f_{Rsi} = 0.74$$



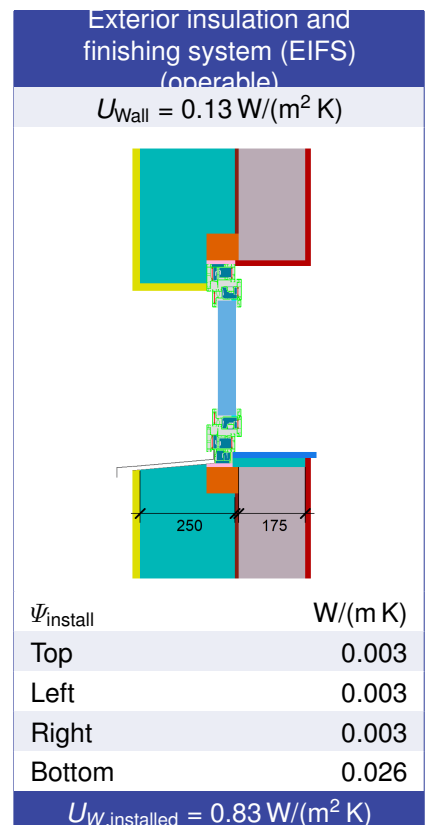
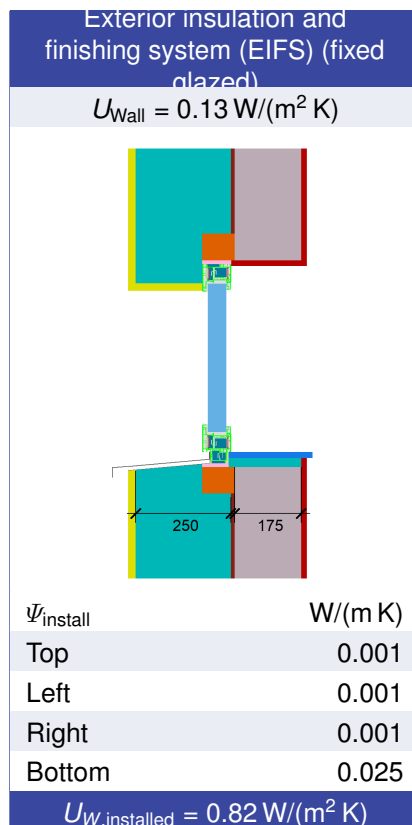
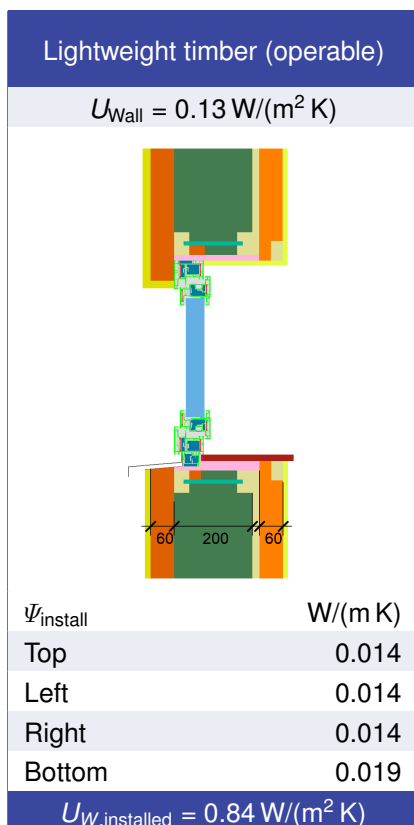
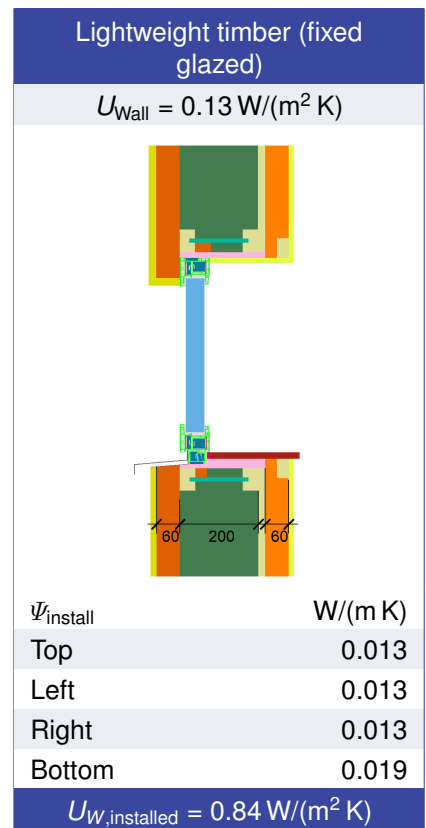
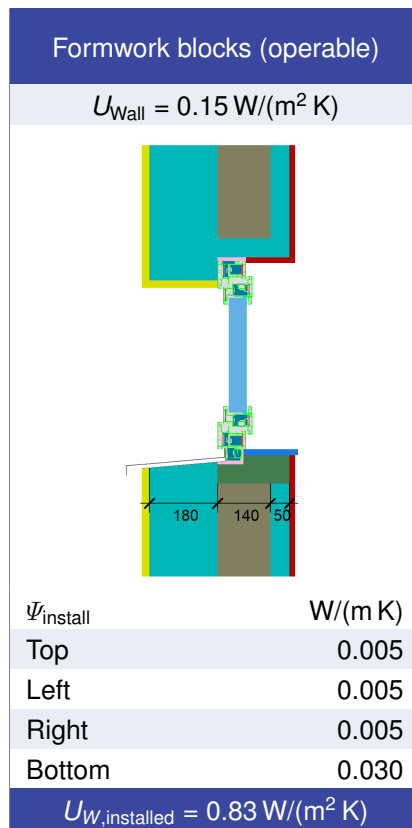
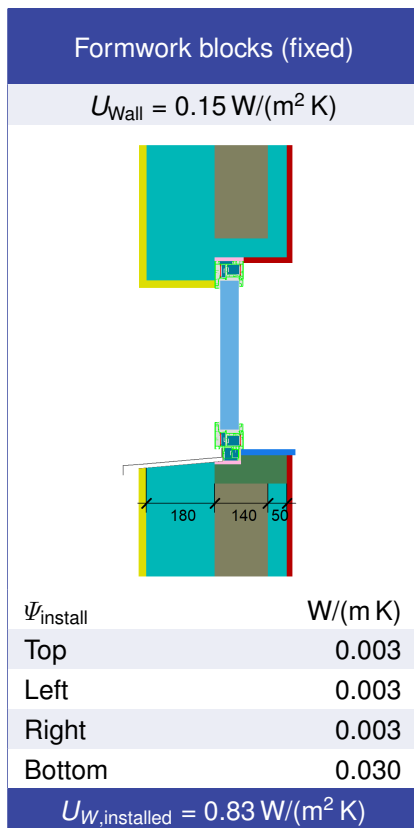


Threshold

$$b_f = 85 \text{ mm}$$
$$U_f = 1.42 \text{ W/(m}^2 \text{ K)}$$
$$\Psi_g = 0.026 \text{ W/(m K)}$$
$$f_{Rsi} = 0.63$$



Validated installations



Cavity wall (fixed glazing)

$U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \text{ K})$

$\Psi_{install}$	W/(m K)
Top	0.001
Left	0.001
Right	0.001
Bottom	0.027

$U_{W,installed} = 0.82 \text{ W}/(\text{m}^2 \text{ K})$

Cavity wall (operable)

$U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \text{ K})$

$\Psi_{install}$	W/(m K)
Top	0.033
Left	0.033
Right	0.033
Bottom	0.027

$U_{W,installed} = 0.87 \text{ W}/(\text{m}^2 \text{ K})$

Formwork blocks bottom 2 (fixed)

$U_1 = 0.15 \text{ [W}/(\text{m}^2 \text{ K})]$

$\Psi_{install} = 0.03 \text{ W}/(\text{m K})$

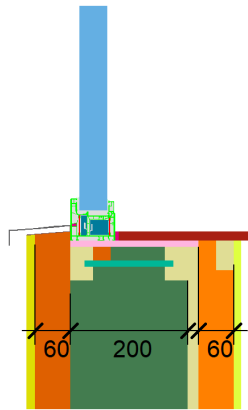
Formwork blocks bottom 2 (operable)

$U_1 = 0.15 \text{ [W}/(\text{m}^2 \text{ K})]$

$\Psi_{install} = 0.03 \text{ W}/(\text{m K})$

Lightweight timber bottom 2 (fixed)

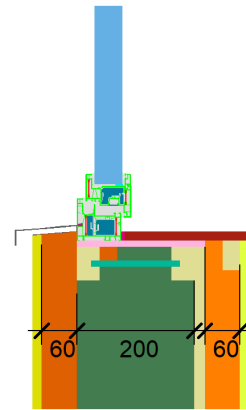
$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$



$\Psi_{\text{install}} = 0.02 \text{ W/(m K)}$

Lightweight timber bottom 2 (operable)

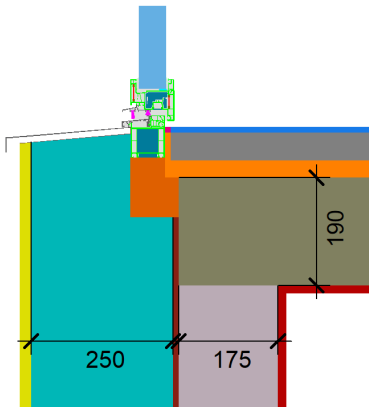
$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$



$\Psi_{\text{install}} = 0.02 \text{ W/(m K)}$

Ext insulation a. finish. s. (EIFS) threshold ceiling (operable)

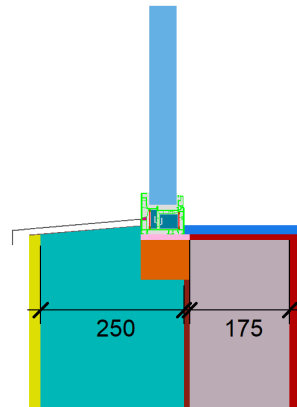
$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$



$\Psi_{\text{install}} = 0.05 \text{ W/(m K)}$

Exterior insulation and finishing system (EIFS) bottom (fixed)

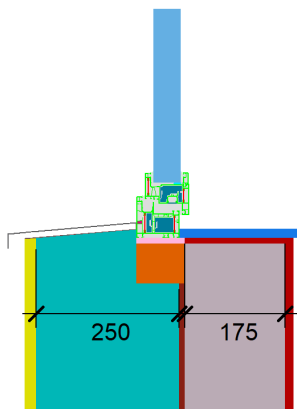
$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$



$\Psi_{\text{install}} = 0.02 \text{ W/(m K)}$

Exterior insulation and finishing s. (EIFS) bottom (operable)

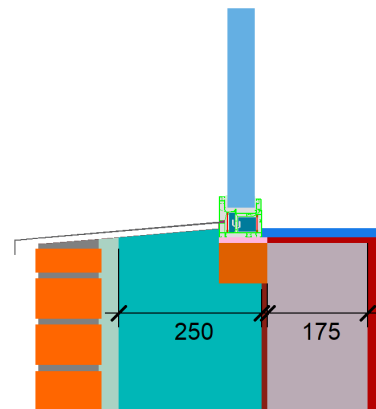
$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$



$\Psi_{\text{install}} = 0.02 \text{ W/(m K)}$

Cavity wall (fixed glazing)

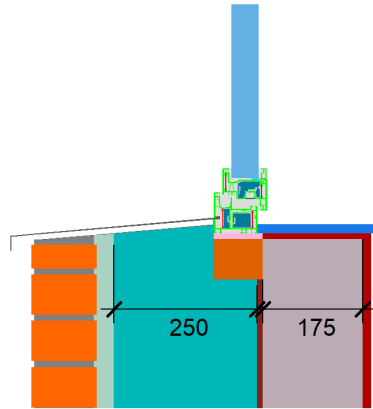
$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$



$\Psi_{\text{install}} = 0.02 \text{ W/(m K)}$

Cavity wall (operable)

$$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.02 \text{ W/(m K)}$$