Input Data-Sheet

Short report | Based on ISO 10077-2 | Performed by: Passive House Institute Dr. Wolfgang Feist, Author: Dr.-Ing. Benjamin Krick

On behalf of: Moralt AG, Hausham, GERMANY
Project/Product: FERRO PASSIV Klima

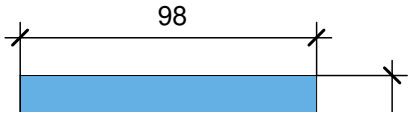
Description	Door leaf / Glazing		Uf value [W/(m²K)]				Frame Width [m]				Glazing Edge Ψ-value [W/(m²K)]				Temperature factor (min)	Overall U-value
	U_{dl}-value [W/(m²K)]	U_g-value [W/(m²K)]	Lock s.	Hinge s.	Sill	Head	Lock s.	Hinge s.	Sill	Head	Lock s.	Hinge s.	Sill	Head	$f_{Rsi=0,25}$ [-]	[W/(m²K)]
FERRO PASSIV Klima	1,00		1,07	1,08	1,81	1,08	0,199	0,099	0,065	0,099	0,000	0,001	0,001	0,001	0,46	**1,05**
Glass insert	1,00	0,60									0,037				0,69	

Drawings and material data were provided by the manufacturer. The sole responibility for the provided information lies with the manufacturer.

comfort criterion for warm climate zone achieved

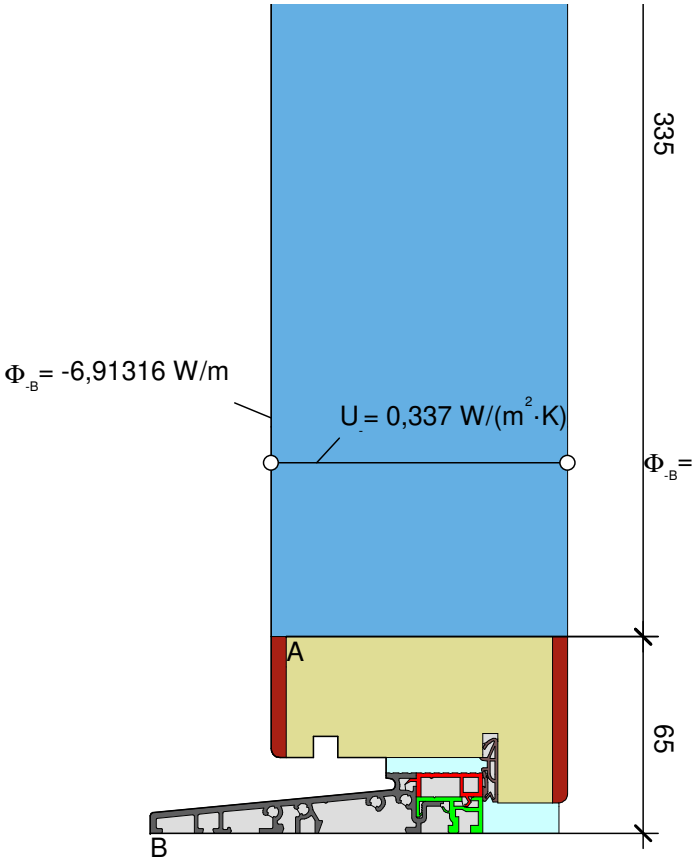
Recommended for climate zone

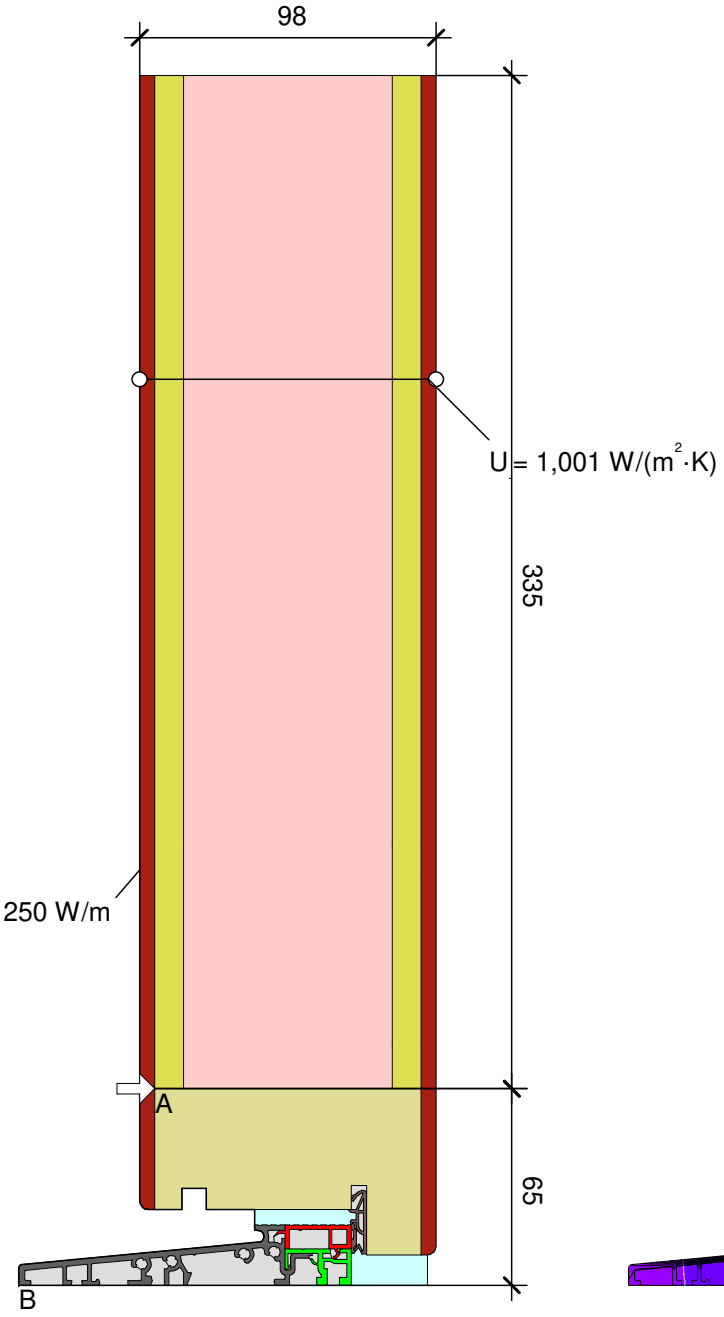
arctic	cold	cool-temperate	warm-temperate	warm ✓	hot ✓	very hot

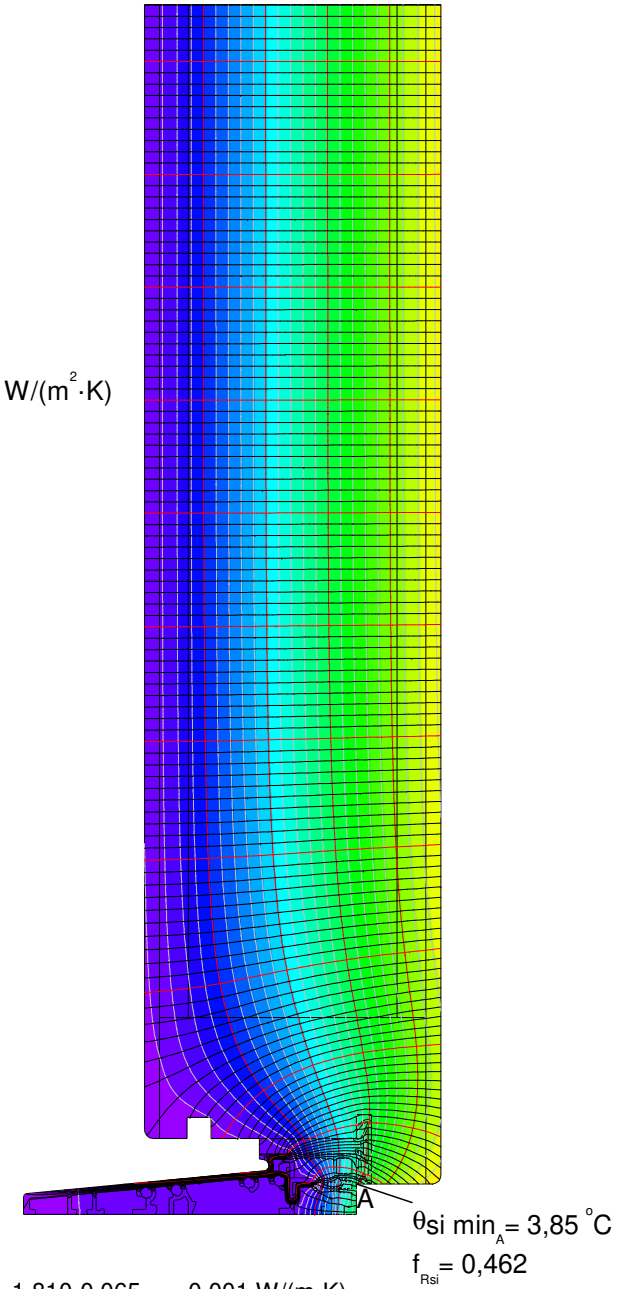


Material	λ[W/(m·K)]	ε
Aluminum I Aluminium 10456	160,000	0,900
Balsa qsenkrecht 0.11 W/(mK)	0,110	
EPDM	0,250	0,900
Polyamide 25% Glassfiber	0,300	0,900
Polyvinylchloride (PVC)	0,170	0,900
Softwood, OSB I Weichholz, OSB 10456	0,130	0,900
Unvent. cavity I unbel. Hohlr. **		
Wooden-based material I Holzwerkstoff 0.13	0,130	
slightly vent. cav. I leicht bel. Hohlr. **		
wooden-based material I Holzwerkstoff 0.18	0,180	0,900

** EN ISO 10077-2:2017, 6.4.3



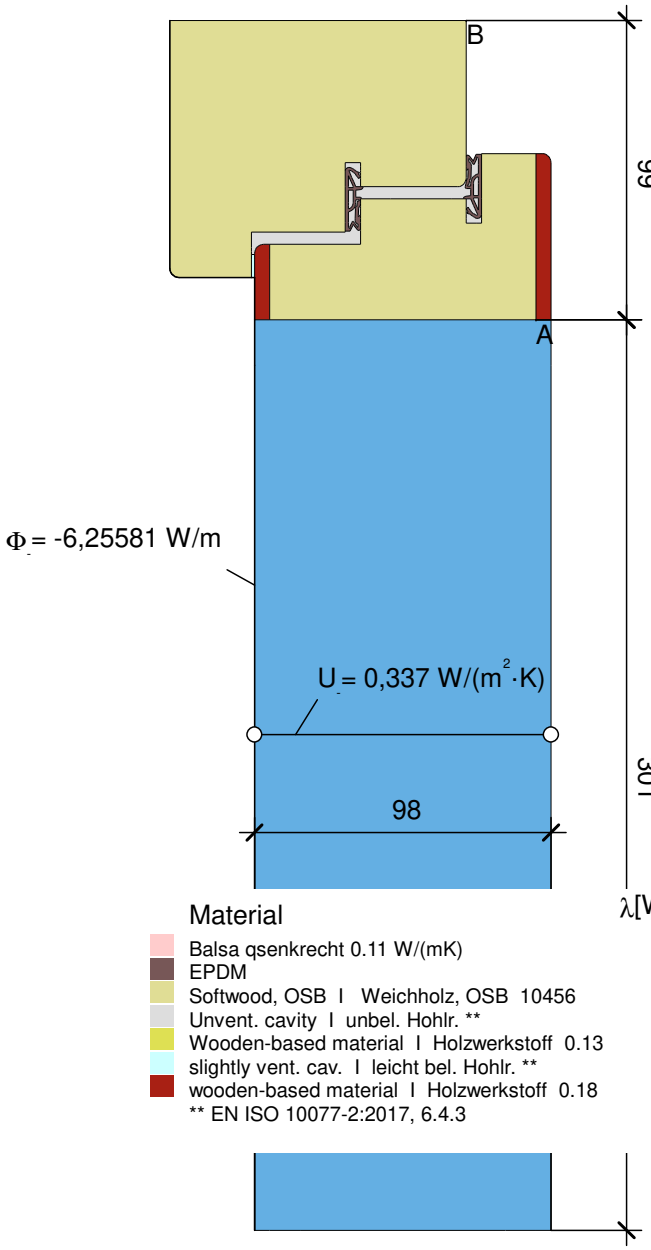


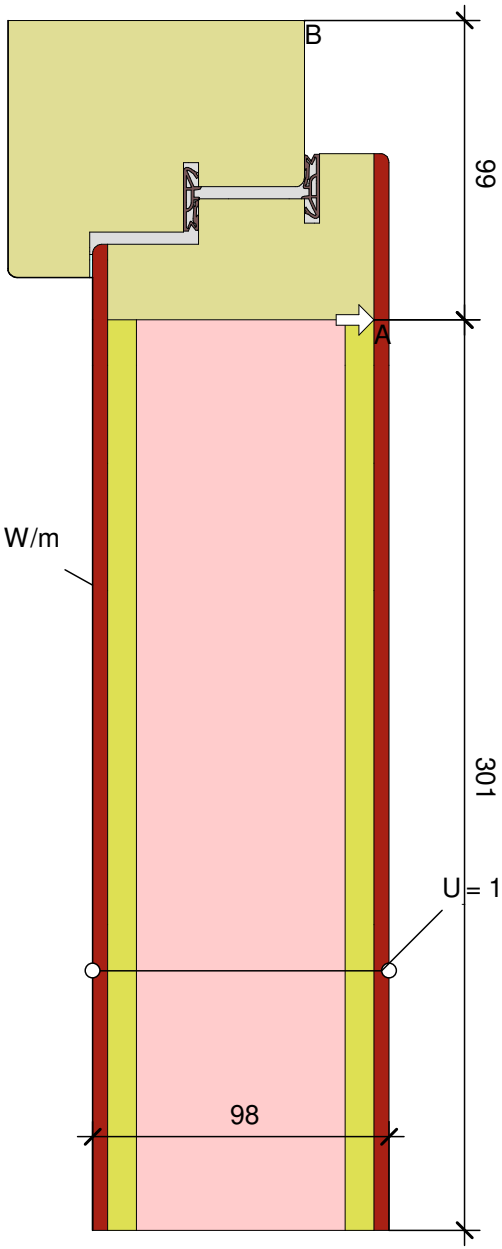


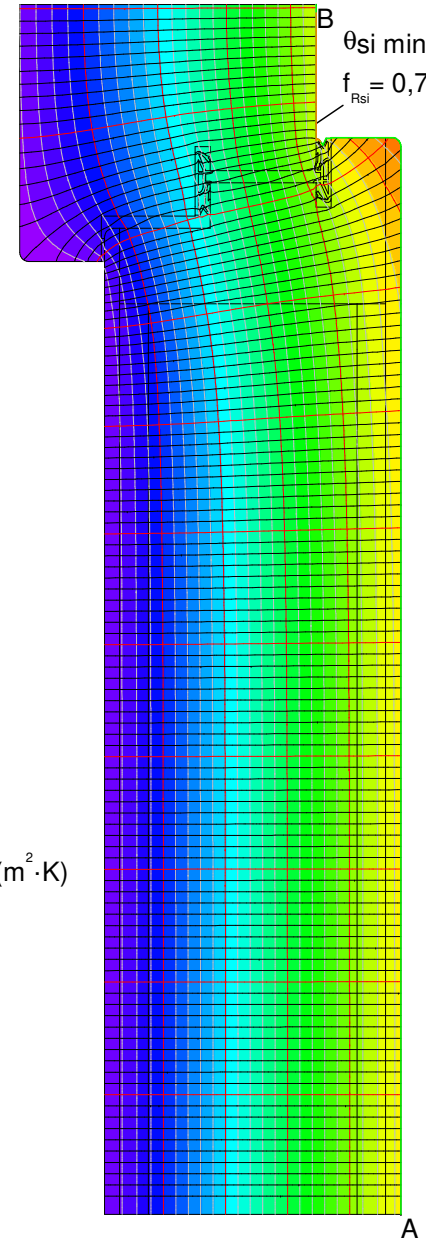
$$U_{f\,A,B} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_f} = \frac{\frac{6{,}913}{30{,}000} - 0{,}337 \cdot 0{,}335}{0{,}065} = 1{,}810\ \text{W/(m}^2\cdot\text{K)}$$

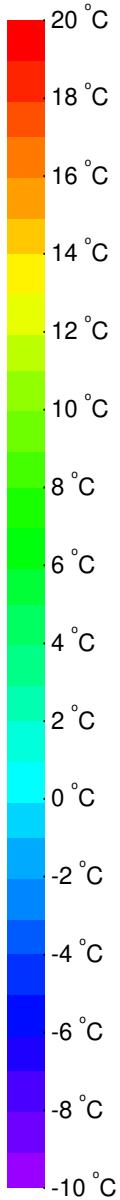
$$\psi_A = \frac{\Phi}{\Delta T} - U_g \cdot b_g - U_f \cdot b_f = \frac{13{,}613}{30{,}000} - 1{,}001 \cdot 0{,}335 - 1{,}810 \cdot 0{,}065 = 0{,}001\ \text{W/(m·K)}$$

th - THRESHOLD I SCHWELLE









Material	λ[W/(m·K)]	ε
Balsa qsenkrecht 0.11 W/(mK)	0,110	
EPDM	0,250	0,900
Softwood, OSB I Weichholz, OSB 10456	0,130	0,900
Unvent. cavity I unbel. Hohlr. **		
Wooden-based material I Holzwerkstoff 0.13	0,130	
slightly vent. cav. I leicht bel. Hohlr. **		
wooden-based material I Holzwerkstoff 0.18	0,180	0,900

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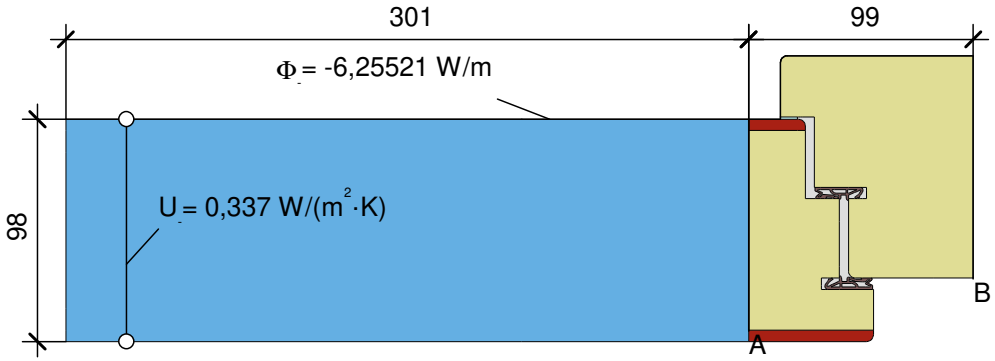
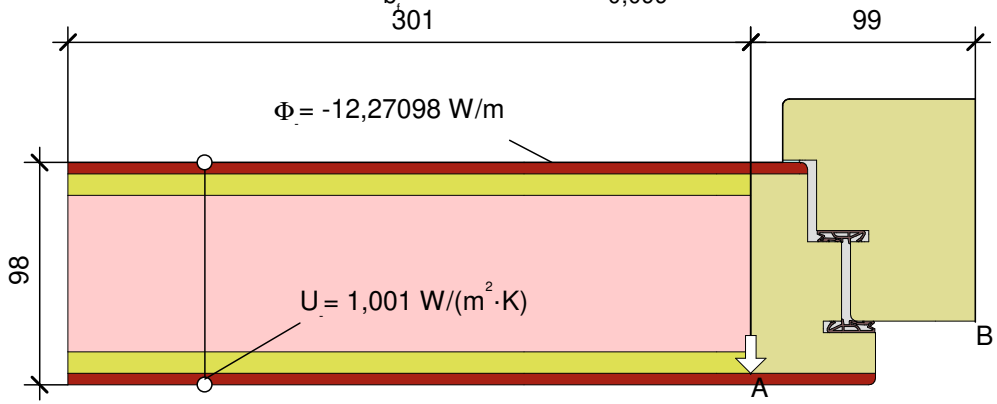
$$U_{f\,A,B} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_f} = \frac{\frac{6,256}{30,000} - 0,337 \cdot 0,301}{0,099} = 1,083\ W/(m^2 \cdot K)$$

$$\psi_A = \frac{\Phi}{\Delta T} - U_g \cdot b_g - U_f \cdot b_f = \frac{12,271}{30,000} - 1,001 \cdot 0,301 - 1,083 \cdot 0,099 = 0,001\ W/(m \cdot K)$$

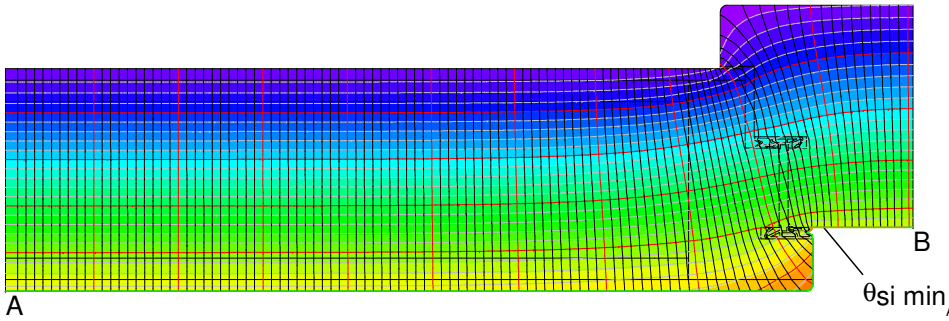
to - TOP I OBEN



$$U_{f\,A,B} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_f} = \frac{\frac{6{,}255}{30{,}000} - 0{,}337 \cdot 0{,}301}{0{,}099} = 1{,}082\ \mathrm{W/(m^2 \cdot K)}$$



$$\psi_A = \frac{\Phi}{\Delta T} - U_g \cdot b_g - U_f \cdot b_f = \frac{12{,}271}{30{,}000} - 1{,}001 \cdot 0{,}301 - 1{,}082 \cdot 0{,}099 = 0{,}001\ \mathrm{W/(m \cdot K)}$$



$\theta si\ min_{A\text{-}B} = 11{,}83\ ^{\circ}C$

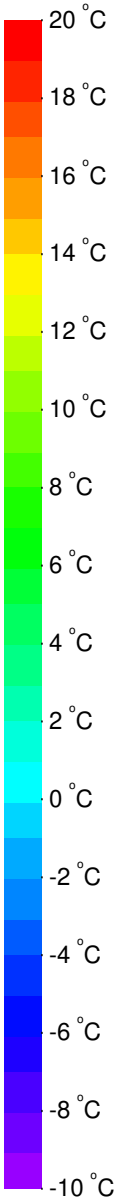
$f_{Rsi} = 0{,}728$

Material	λ[W/(m·K)]	ε
Balsa qsenkrecht 0.11 W/(mK)	0,110	
EPDM	0,250	0,900
Softwood, OSB I Weichholz, OSB 10456	0,130	0,900
Unvent. cavity I unbel. Hohlr. **		
Wooden-based material I Holzwerkstoff 0.13	0,130	
slightly vent. cav. I leicht bel. Hohlr. **		
wooden-based material I Holzwerkstoff 0.18	0,180	0,900

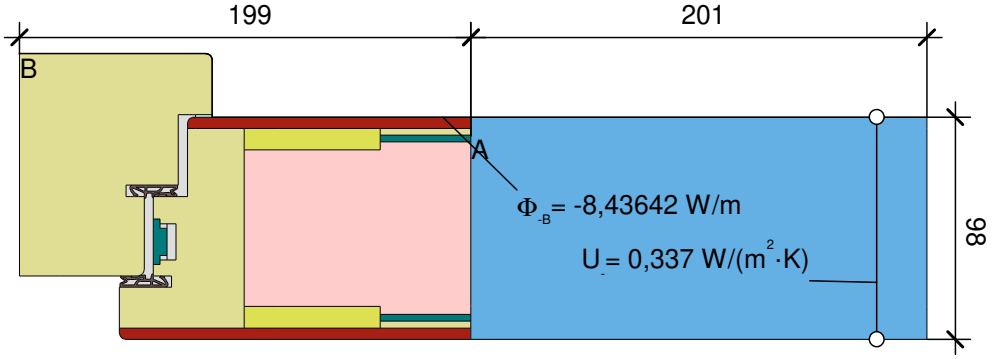
** EN ISO 10077-2:2017, 6.4.3

Randbedingung	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Adiabatic | Adiabat	0,000			
Exterior | Außen		-10,000	0,040	
Interior, frame, normal		20,000	0,130	
Interior, frame, reduced		20,000	0,200	
e 0,9 Cavity I Hohlraum				0,900

Randbedingung	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Adiabatic | Adiabat	0,000			
Exterior | Außen		-10,000	0,040	
e 0,9 Cavity I Hohlraum				0,900
fRsi: Interior | Innen		20,000	0,250	



si HINGE SIDE I BANDSEITE



$$U_{f\,A,B} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_f} = \frac{\frac{8{,}436}{30{,}000} - 0{,}337 \cdot 0{,}201}{0{,}199} = 1{,}073\ W/(m^2 \cdot K)$$

Material	λ[W/(m·K)]	ε
Balsa qsenkrecht 0.11 W/(mK)	0,110	
EPDM	0,250	0,900
Softwood, OSB | Weichholz, OSB 10456	0,130	0,900
Steel | Stahl	50,000	0,900
Unvent. cavity | unbel. Hohlr. **		
Wooden-based material | Holzwerkstoff 0.13	0,130	
slightly vent. cav. | leicht bel. Hohlr. **		
wooden-based material | Holzwerkstoff 0.18	0,180	0,900

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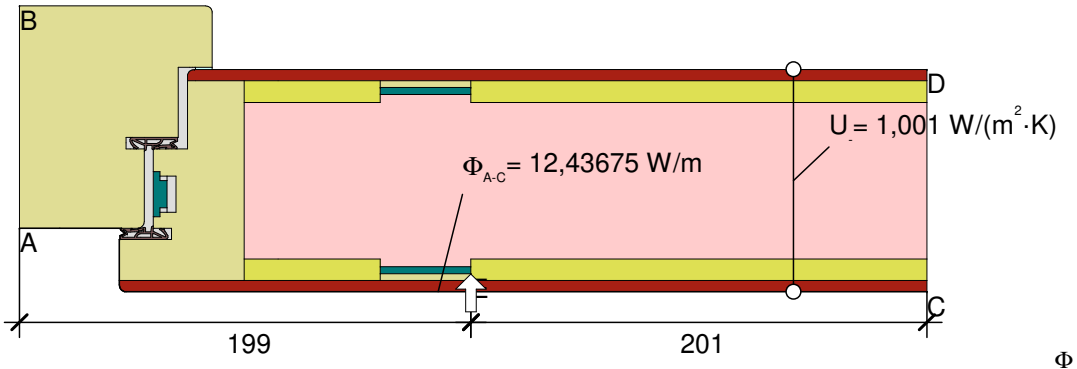
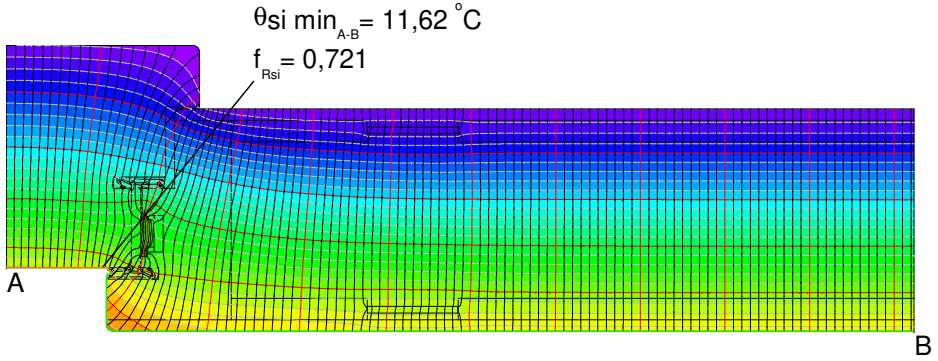
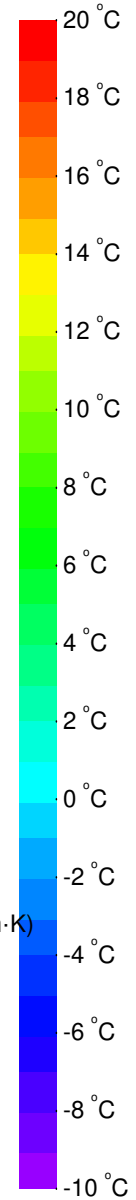


Randbedingung	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Adiabatic | Adiabat	0,000			
Exterior | Außen		-10,000	0,040	
Interior, frame, normal		20,000	0,130	
Interior, frame, reduced		20,000	0,200	
e 0,9 Cavity | Hohlraum				0,900

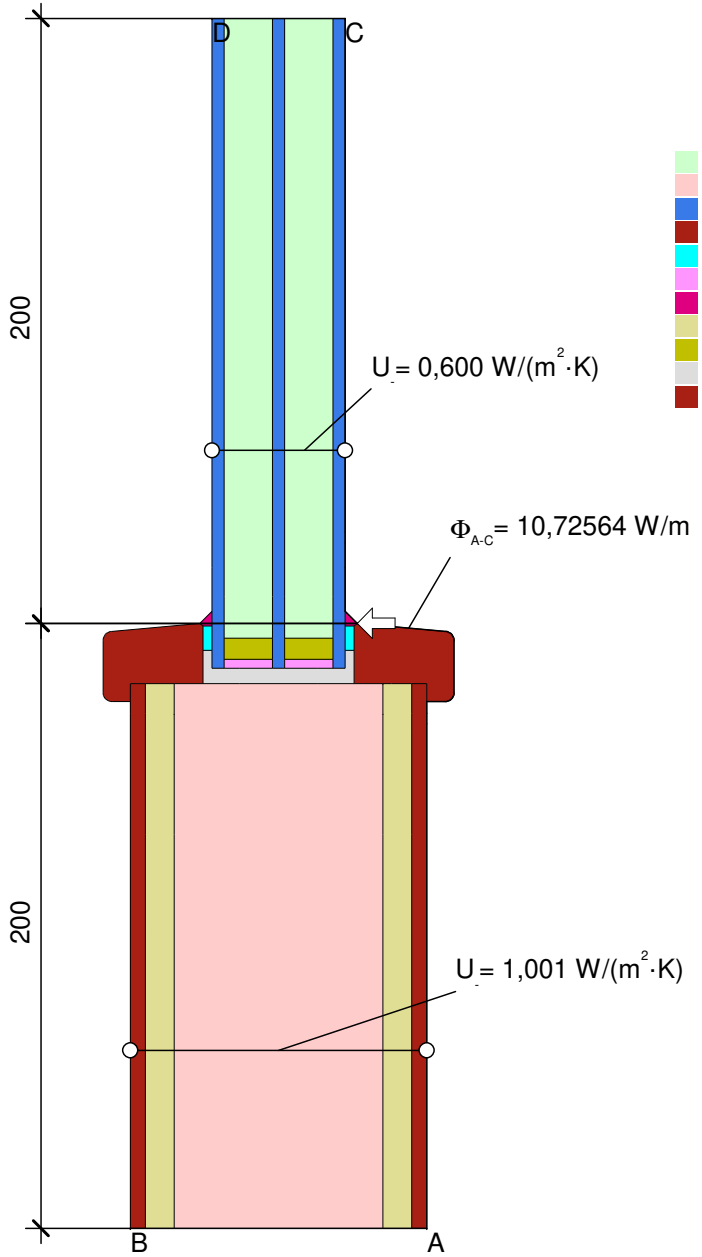
$$\psi_{A\text{-}E\text{-}C,\,*} = \frac{\Phi}{\Delta T} - U_1 \cdot b_1 - U_2 \cdot b_2 = \frac{12{,}437}{30{,}000} - 1{,}073 \cdot 0{,}199 - 1{,}001 \cdot 0{,}201 = 0{,}000\ W/(m \cdot K)$$



Randbedingung	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Adiabatic | Adiabat	0,000			
Exterior | Außen		-10,000	0,040	
e 0,9 Cavity | Hohlraum				0,900
fRsi: Interior | Innen		20,000	0,250	

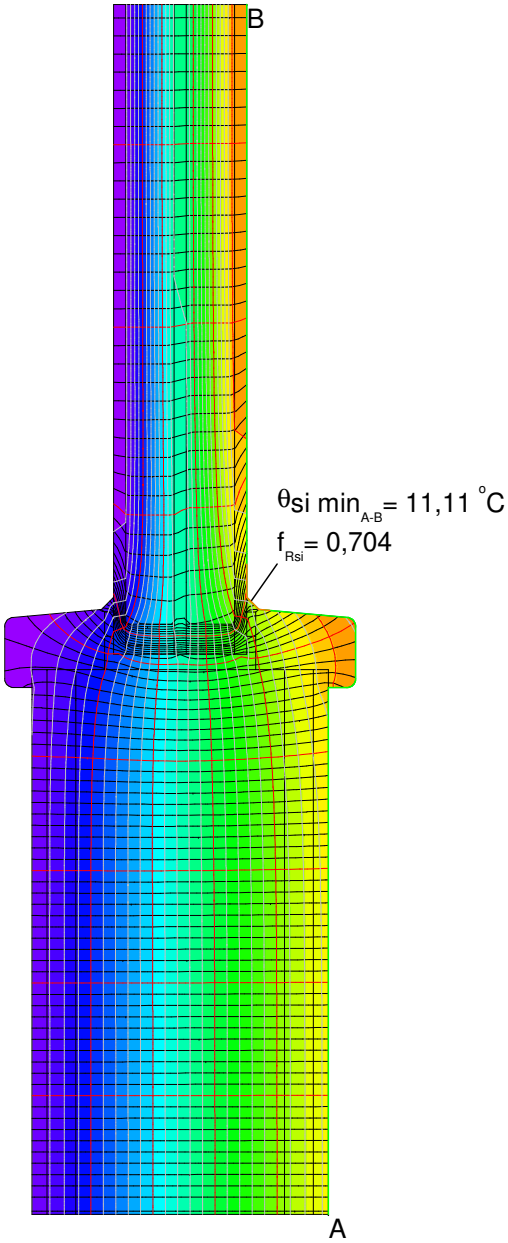


sh - LOCK SIDE | SCHLOSS SEITE



Material	λ[W/(m·K)]	ε
Ar16 in 44mm Ug 0,60	0,022	
Balsa qsenkrecht 0.11 W/(mK)	0,110	0,900
Glass I Glas	1,000	0,900
Hardwood I Hartholz 0.18 700 kg/m3 10456	0,180	0,900
Insulation tape | Vorlegeband	0,060	0,900
Polysulfide I Polysulfid	0,400	0,900
Silicone I Silikon	0,350	
Softwood, OSB I Weichholz, OSB 10456	0,130	
Thermix TX.N plus [cert]	0,320	
Unvent. cavity I unbel. Hohlr. **		
wooden-based material I Holzwerkstoff 0.18	0,180	

** EN ISO 10077-2:2017, 6.4.3



$$\psi_{A\text{-}E\text{-}C} = \frac{\Phi}{\Delta T} - U_1 \cdot b_1 - U_2 \cdot b_2 = \frac{10{,}726}{30{,}000} - 1{,}001 \cdot 0{,}200 - 0{,}600 \cdot 0{,}200 = 0{,}037 \text{ W/(m·K)}$$