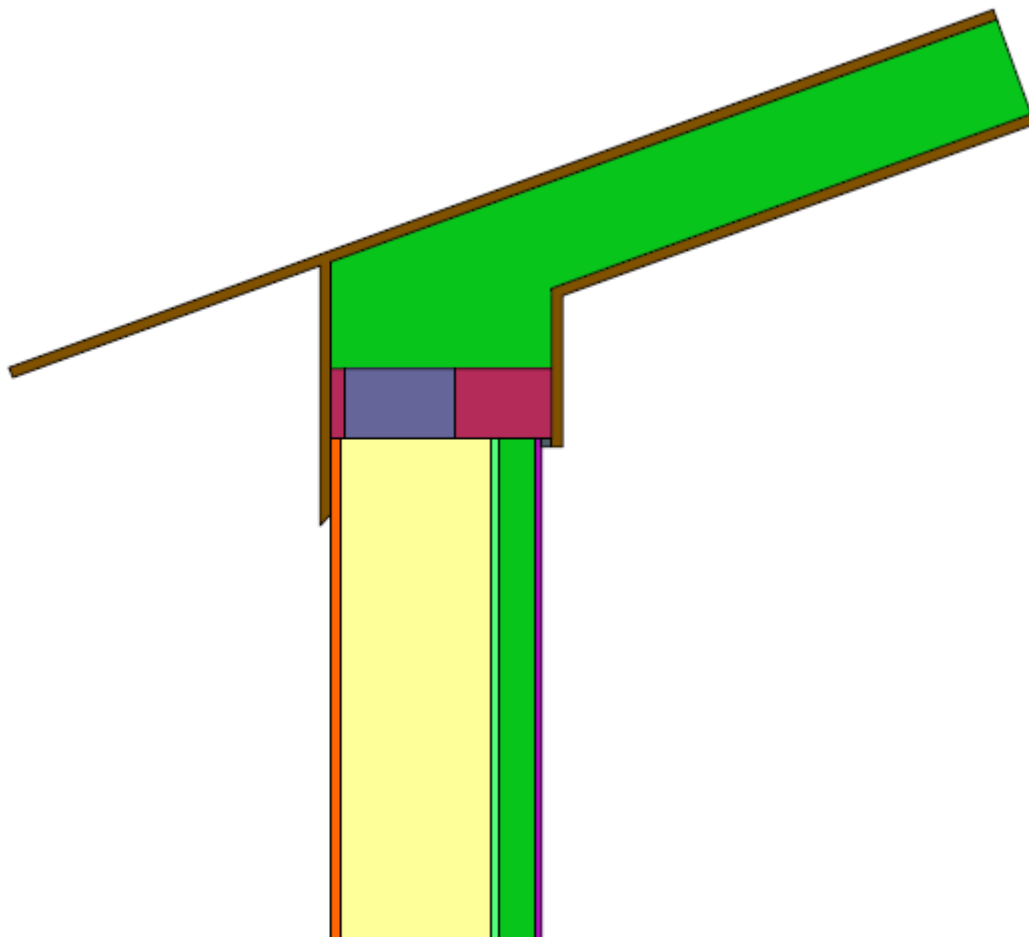


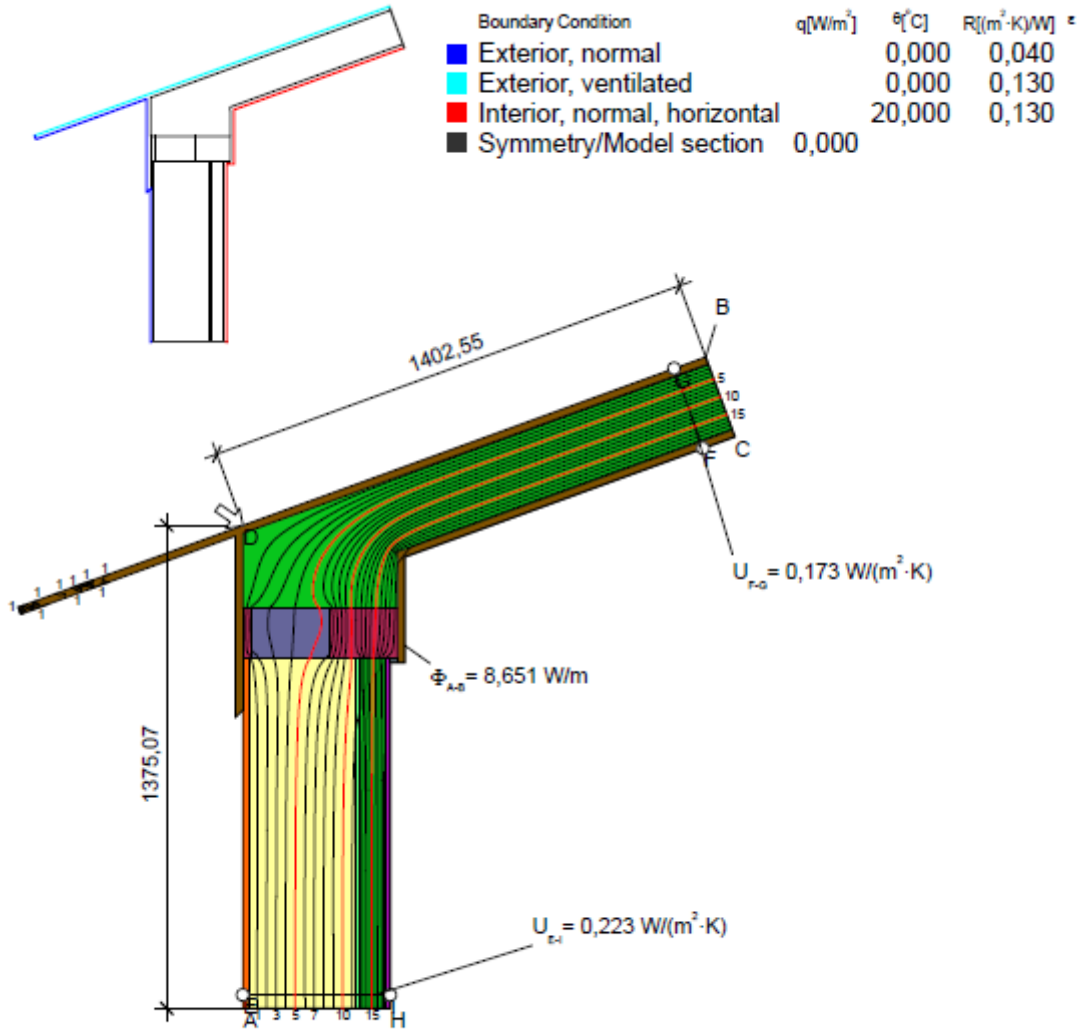
ANEXO 2

i) Peto de cubierta inclinada



Material	λ [W/(m·K)]	ϵ
Gypsum plasterboard (1)	0,250	
Gypsum plastering 1000 kg/m ³	0,400	
Mineral Wool (0,037)	0,037	
Plaster, cement, sand LAMBA 1,4	1,400	
Plywood 500 kg/m ³ (0.15*2.2)	0,330	
Plywood 500 kg/m ³ (1.14*2.2)	0,308	
Timber 500 kg/m ³ (0.13*2.2)	0,268	
WWW (0.11 + 0.13)	0,110, 0,130	
puren diffusionsoffen (PIR) 0.026	0,026	

Figura 1: geometría y materiales



$$\psi_{A-B} = \frac{\Phi}{\Delta T} - U_1 \cdot b_1 - U_2 \cdot b_2 = \frac{8,651}{20,000} - 0,218 \cdot 1,375 - 0,173 \cdot 1,403 = -0,109 \text{ W/(m} \cdot \text{K)}$$

Figura 2: cálculo del puente térmico

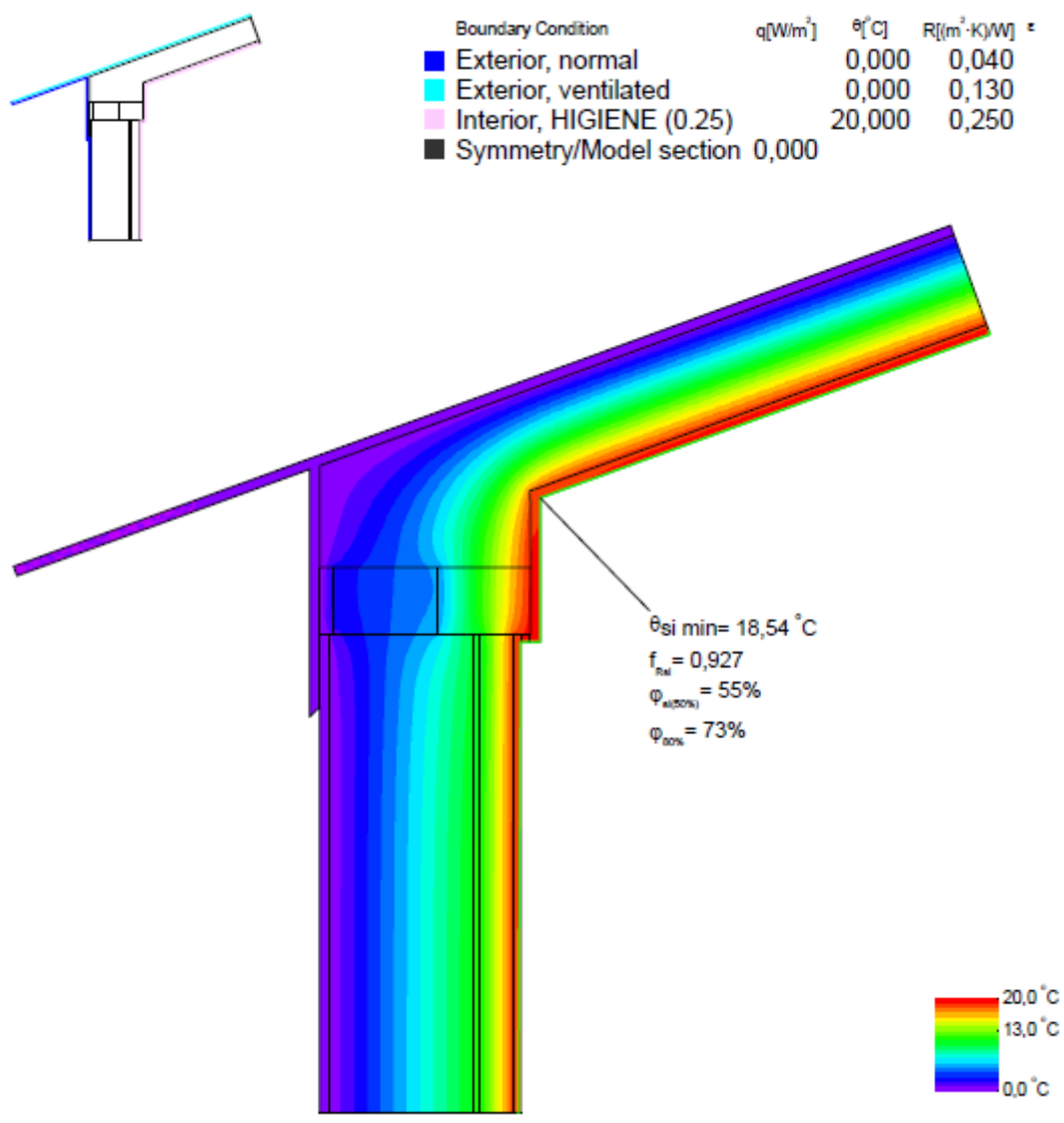
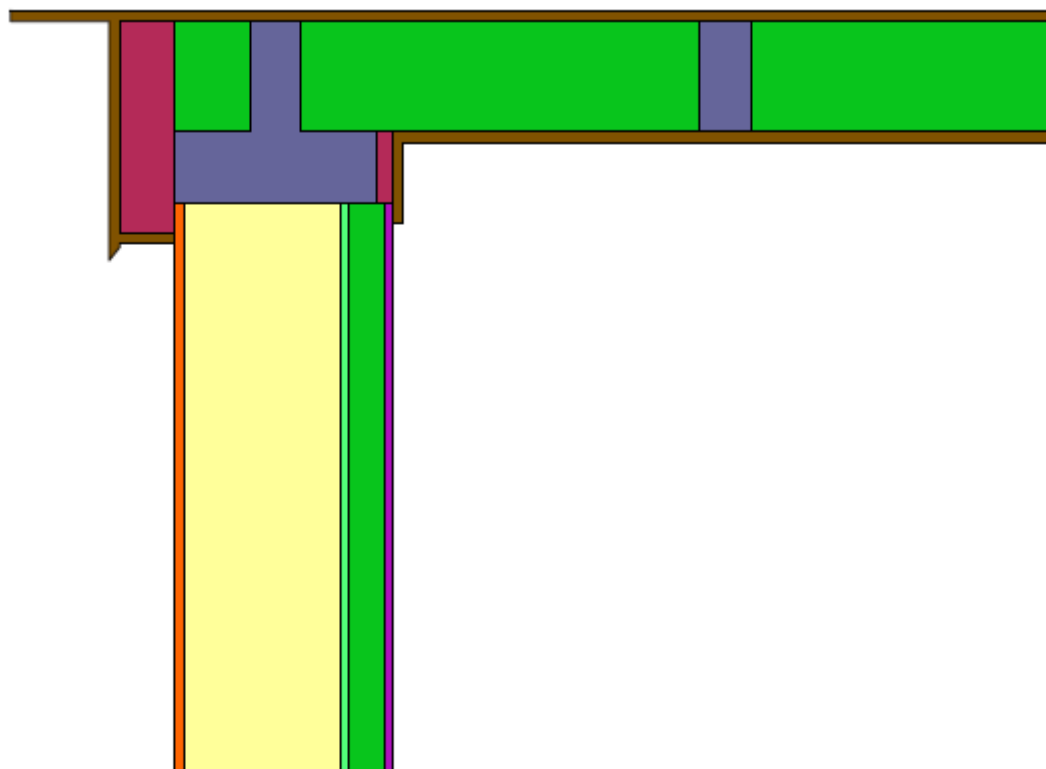


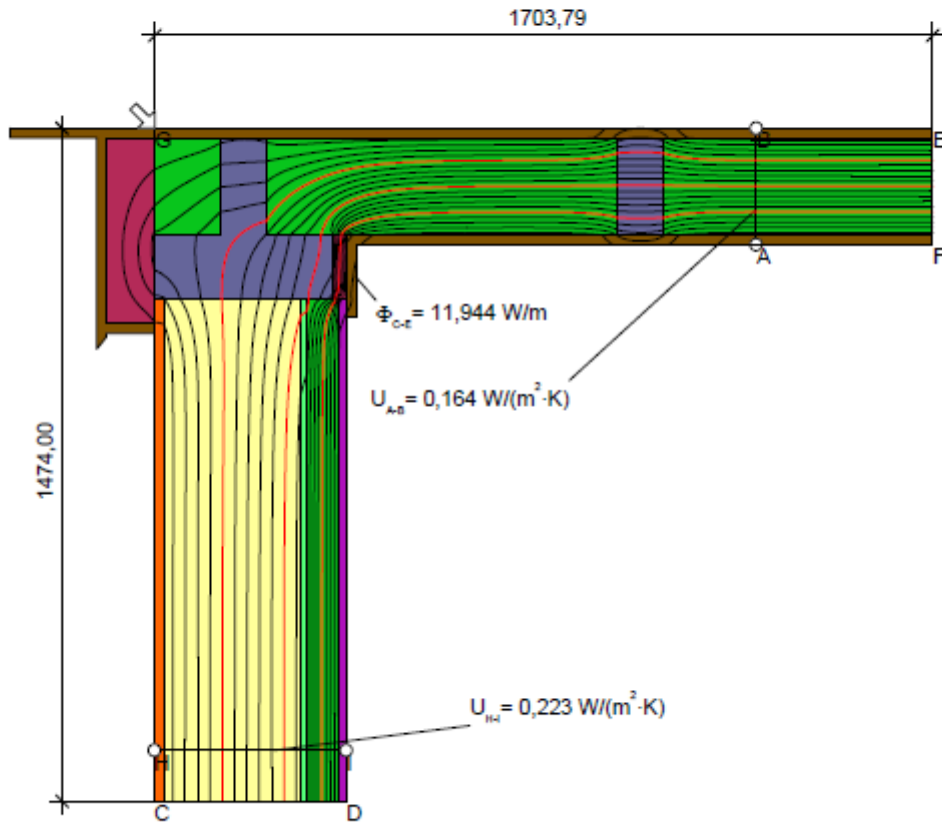
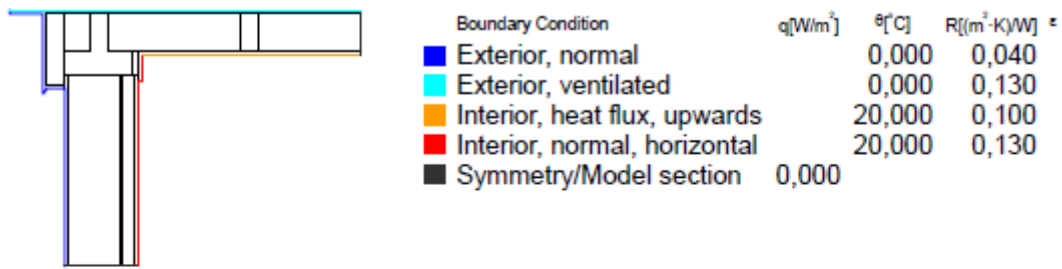
Figura 3: criterio de higiene

ii) Peto de cubierta inclinada, sección opuesta



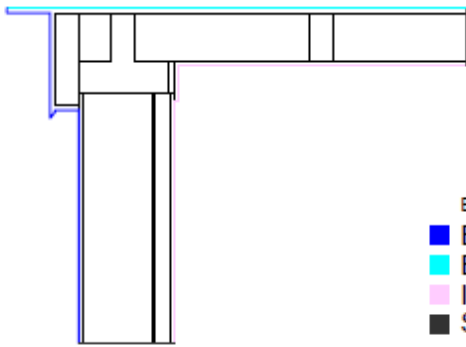
Material	λ [W/(m·K)]	ϵ
Gypsum plasterboard (1)	0,250	
Gypsum plastering 1000 kg/m ³	0,400	
Mineral Wool (0,037)	0,037	
Plaster, cement, sand LAMBA 1,4	1,400	
Plywood 500 kg/m ³ (0.15*2.2)	0,330	
Plywood 500 kg/m ³ (1.14*2.2)	0,308	
WWW (0.11 + 0.13)	0,110, 0,130	
piren diffusionsoffen (PIR) 0.026	0,026	

Figura 4: geometría y materiales



$$\Psi_{\text{ext.}} = \frac{\Phi}{\Delta T} - U_1 \cdot b_1 - U_2 \cdot b_2 = \frac{11,944}{20,000} - 0,223 \cdot 1,474 - 0,163 \cdot 1,704 = -0,009 \text{ W/(m} \cdot \text{K)}$$

Figura 5: cálculo del puente térmico



Boundary Condition	$q[W/m^2]$	$\theta[C]$	$R[(m^2 \cdot K)/W]$
Exterior, normal	0,000	0,040	
Exterior, ventilated	0,000	0,130	
Interior, normal(0,25)	20,000	0,250	
Symmetry/Model section	0,000		

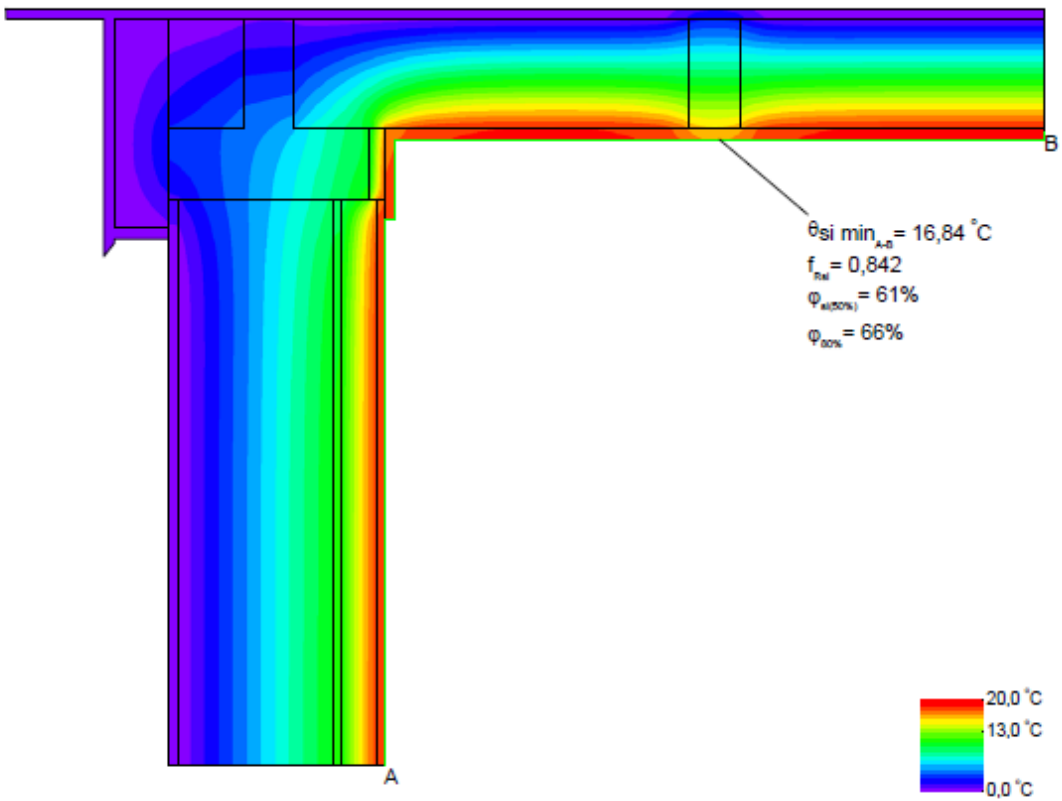


Figura 6: criterio de higiene

iii) Ventana superior

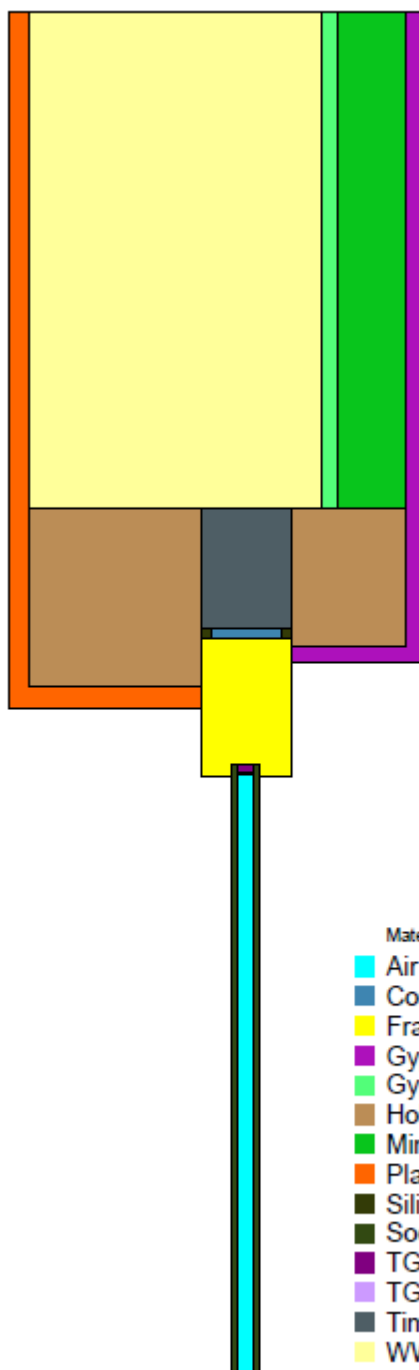
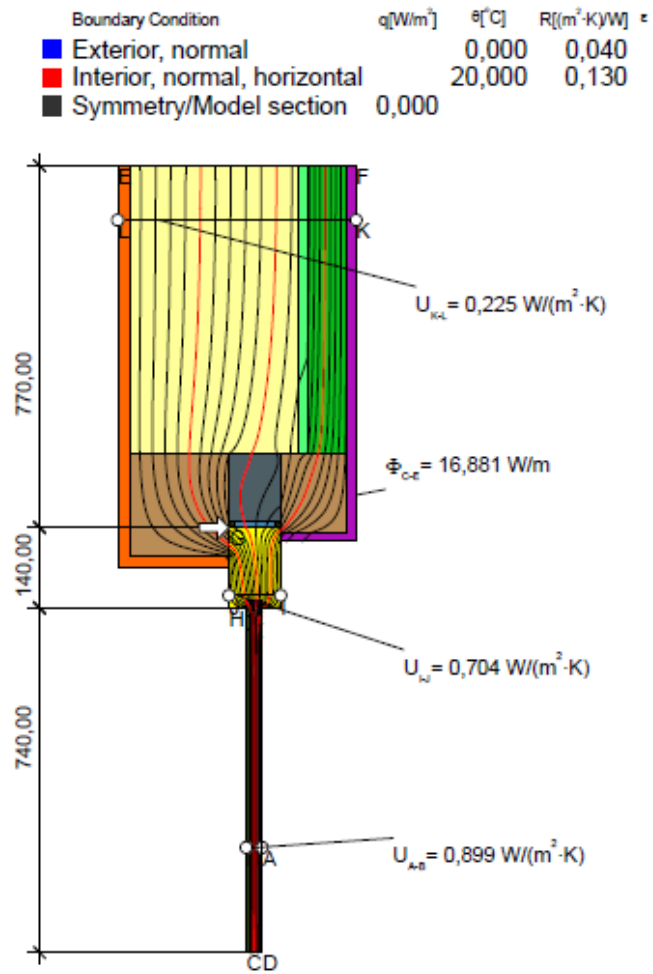
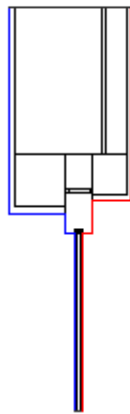
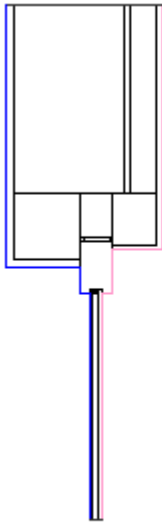


Figura 7: geometría y materiales



$$\Psi_{\text{caz.}} = \frac{\Phi}{\Delta T} - U_1 \cdot b_1 - U_2 \cdot b_2 - U_3 \cdot b_3 = \frac{16,881}{20,000} - 0,899 \cdot 0,740 - 0,704 \cdot 0,140 - 0,225 \cdot 0,770 = -0,093 \text{ W/(m} \cdot \text{K)}$$

Figura 8: cálculo del puente térmico



Boundary Condition	$q[W/m^2]$	$\theta[^\circ C]$	$R[(m^2 \cdot K)/W]$
Exterior, normal	0,000	0,040	
Interior, hygiene (0,25)	20,000	0,250	
Symmetry/Model section	0,000		

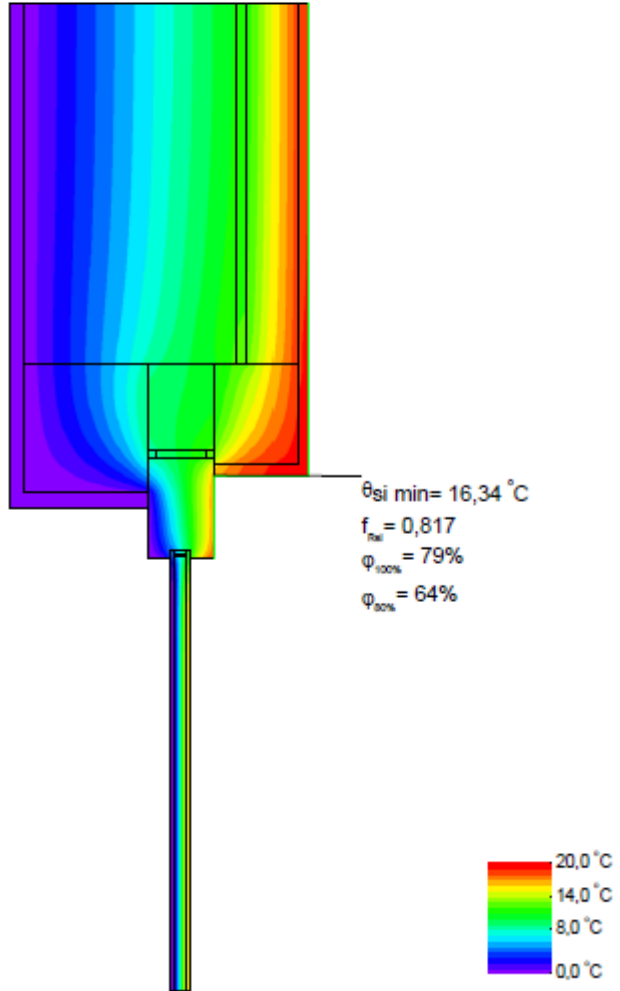
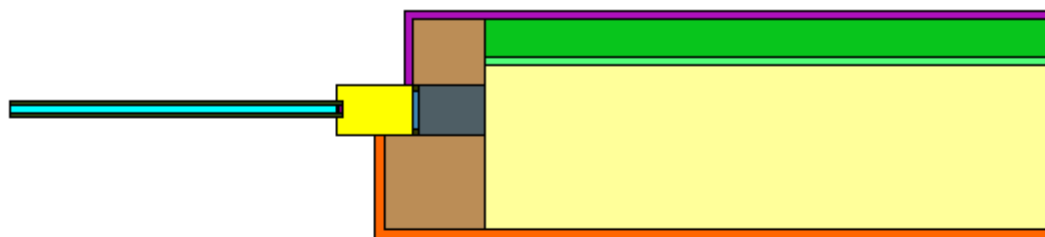


Figura 9: criterio de higiene

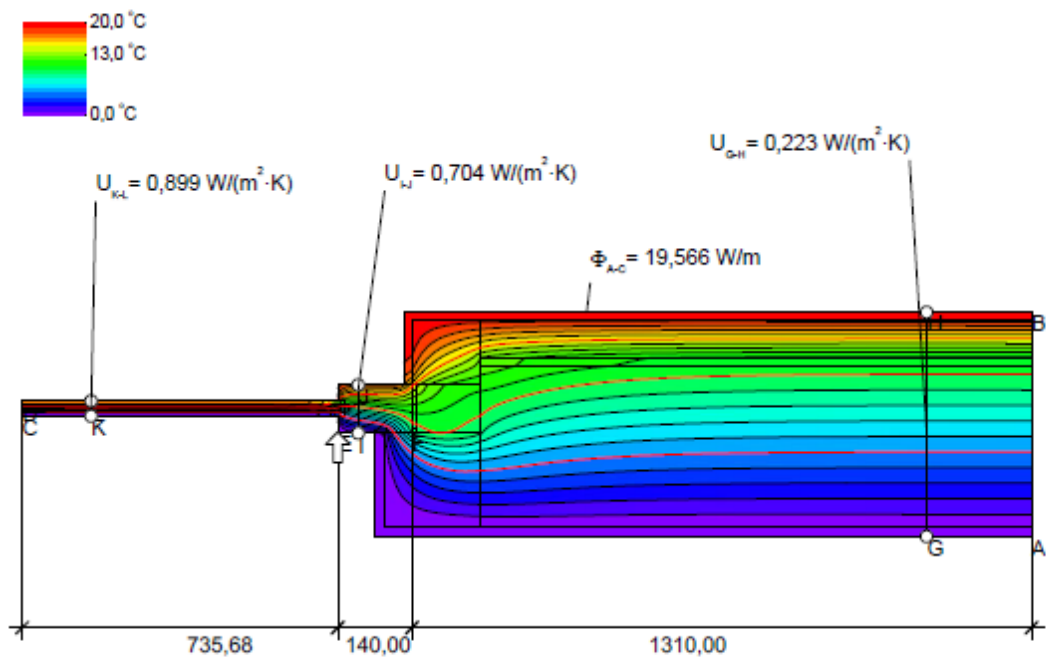
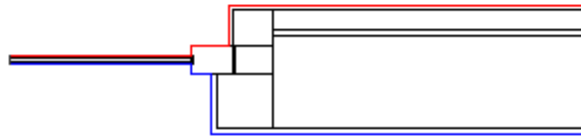
iv) Ventana, sección lateral



Material	λ [W/(m·K)]	ϵ
Air for Testwindow (0,0172)	0,017	
Compression Band Polyurethane	0,250	
Frame 90mm-lambda 0,7	0,072	
Gypsum plasterboard (1)	0,250	
Gypsum plastering 1000 kg/m ³	0,400	
Holzfaserdämmstoff Nennwert L=0.050	0,050	
Mineral Wool (0,037)	0,037	
Plaster, cement, sand LAMBA 1,4	1,400	
Silicone, pure	0,350	
Soda lime	1,000	
TGI Spacer part A 0,45	0,450	
TGI Spacer part B 0,4	0,400	
Timber 500 kg/m ³ (0.13*2.2)	0,268	
WWW (0.11 + 0.13)	0,110, 0,130	

Figura 10: geometría y materiales

Boundary Condition	$q[W/m^2]$	$\theta[^\circ C]$	$R[(m^2 \cdot K)/W]^{-1}$
Exterior, normal	0,000	0,040	
Interior, normal, horizontal	20,000	0,130	
Symmetry/Model section	0,000		



$$\psi_{Ac,c} = \frac{\Phi}{\Delta T} - U_1 \cdot b_1 - U_2 \cdot b_2 - U_3 \cdot b_3 = \frac{19,566}{20,000} - 0,219 \cdot 1,310 - 0,704 \cdot 0,140 - 0,899 \cdot 0,736 = -0,068 \text{ W/(m} \cdot \text{K)}$$

Figura 11: cálculo del puente térmico

Boundary Condition	q [W/m ²]	θ [°C]	R [(m ² ·K)/W]
Exterior, normal	0,000	0,040	
Interior, hygiene (0,25)	20,000	0,250	
Symmetry/Model section	0,000		

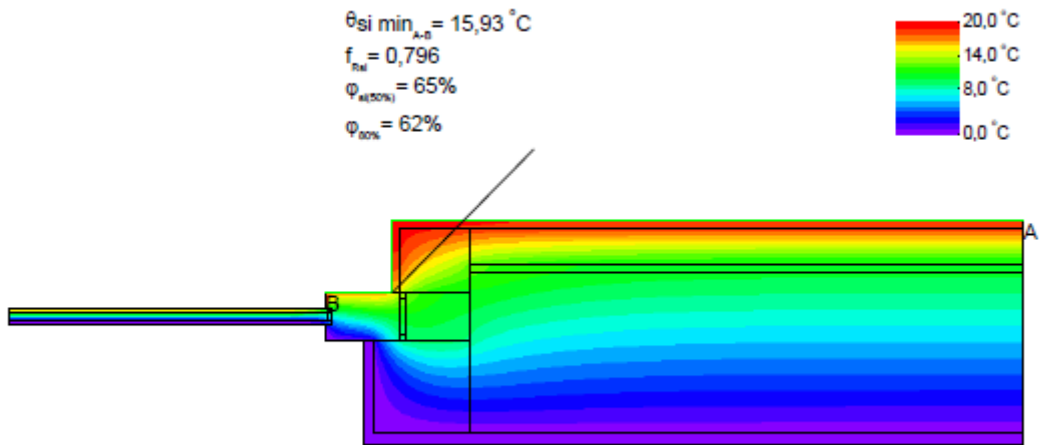
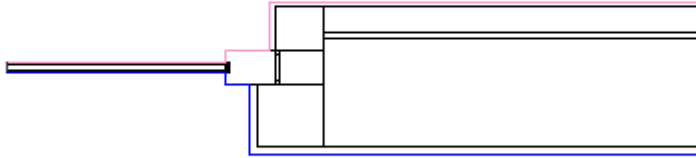
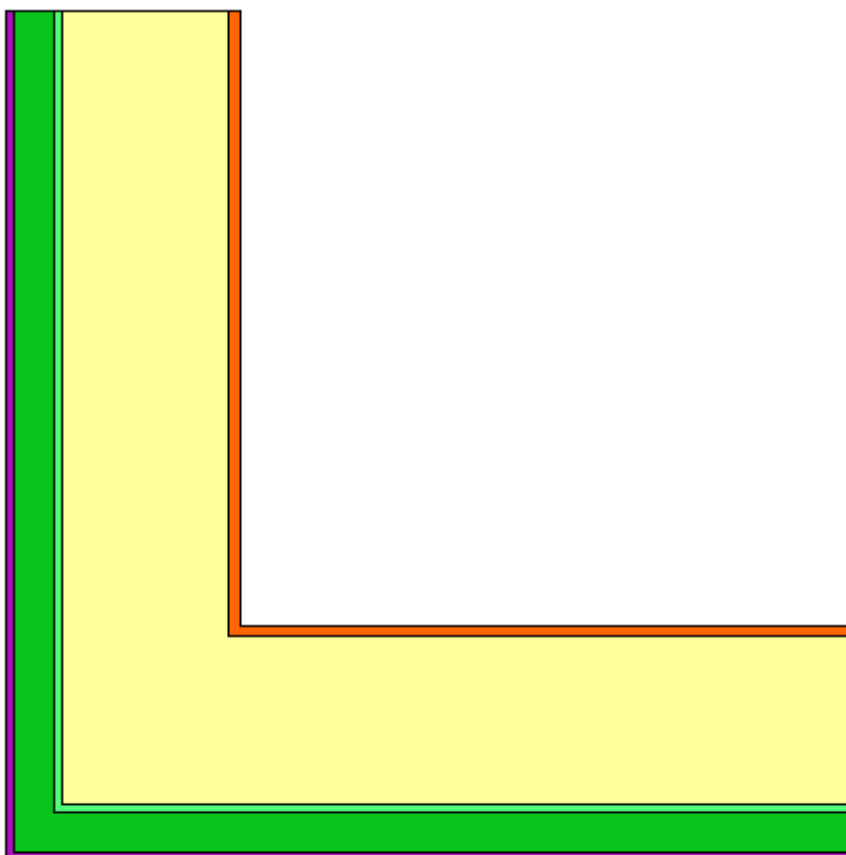


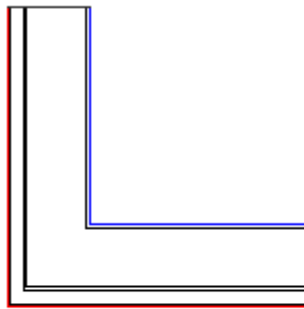
Figura 12: criterio de higiene

v) Esquina entrante

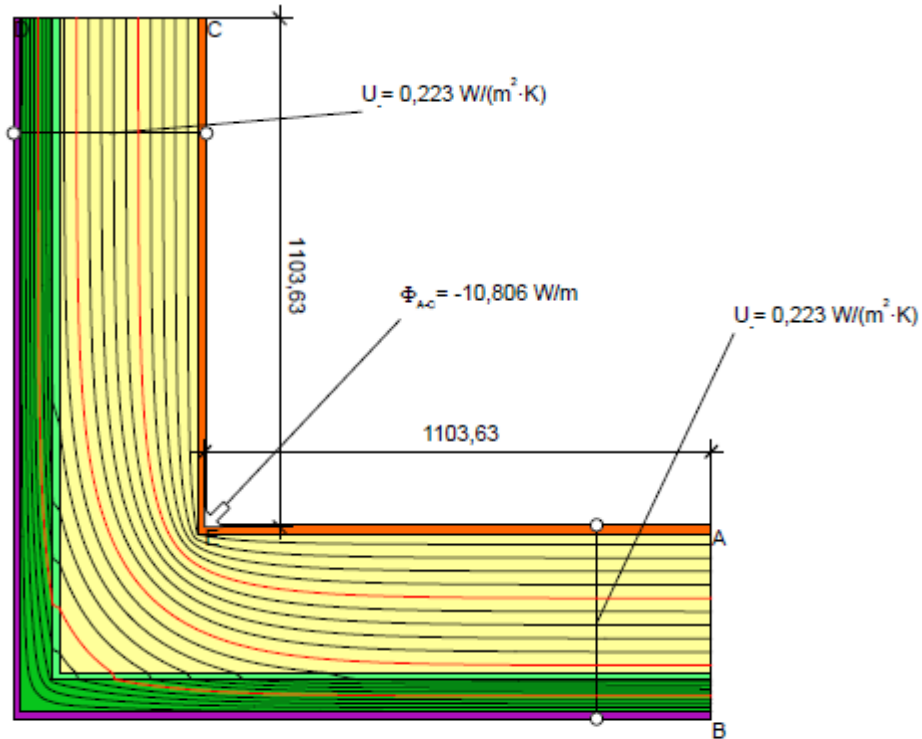


Material	λ [W/(m·K)]	z
Gypsum plasterboard (1)	0,250	
Gypsum plastering 1000 kg/m ³	0,400	
Mineral Wool (0,037)	0,037	
Plaster, cement, sand LAMBA 1,4	1,400	
WWW (0.11 + 0.13)	0,110, 0,130	

Figura 13: geometría y materiales



Boundary Condition	q[W/m ²]	θ[C]	R[(m ² ·K)/W]
Exterior, normal	0,000	0,040	
Interior, normal, horizontal	20,000	0,130	
Symmetry/Model section	0,000		



$$\psi_{A-c} = \frac{\Phi}{\Delta T} - U_1 \cdot b_1 - U_2 \cdot b_2 = \frac{10,806}{20,000} - 0,223 \cdot 1,104 - 0,223 \cdot 1,104 = 0,048 \text{ W/(m} \cdot \text{K)}$$

Figura 14: cálculo del puente térmico

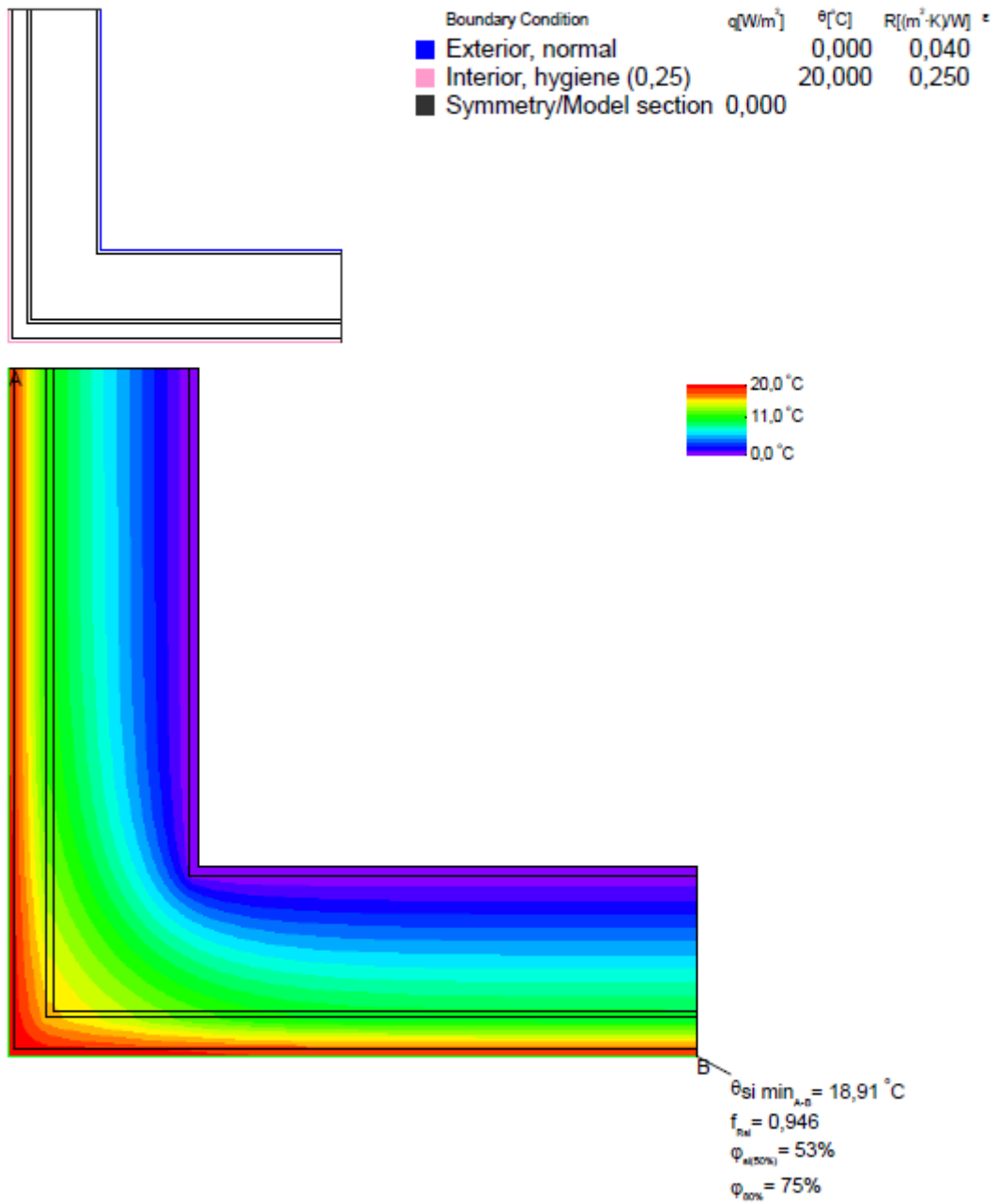


Figura 15: criterio de higiene

vi) Esquina saliente

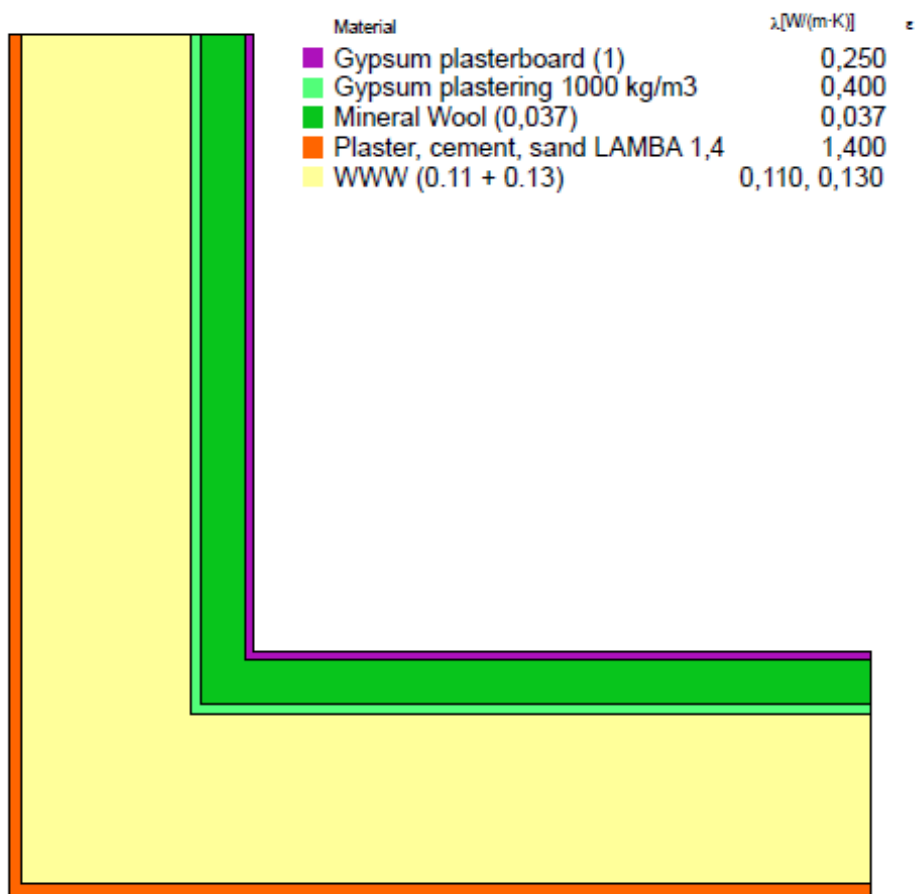
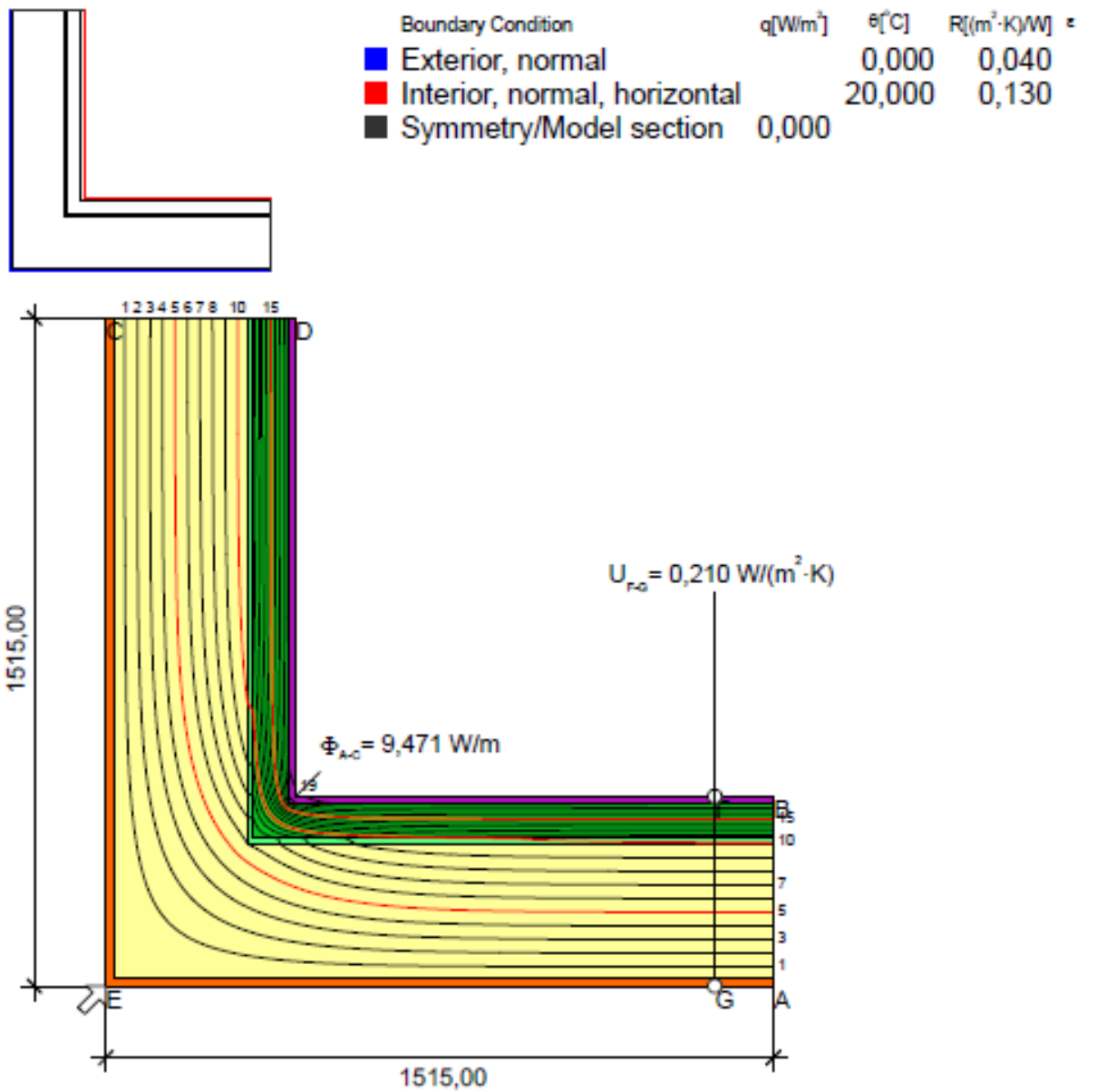
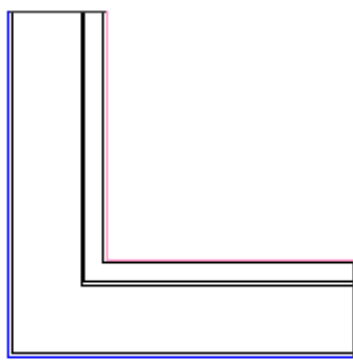


Figura 16: geometría y materiales



$$\Psi_{A-C} = \frac{\Phi}{\Delta T} - U_1 \cdot b_1 - U_2 \cdot b_2 = \frac{9,471}{20,000} - 0,210 \cdot 1,515 - 0,210 \cdot 1,515 = -0,164 \text{ W/(m} \cdot \text{K)}$$

Figura 17: cálculo del puente térmico



Boundary Condition	q [W/m ²]	θ [°C]	R [(m ² ·K)/W]
Exterior, normal	0,000	0,040	
Interior, hygiene (0,25)	20,000	0,250	
Symmetry/Model section	0,000		

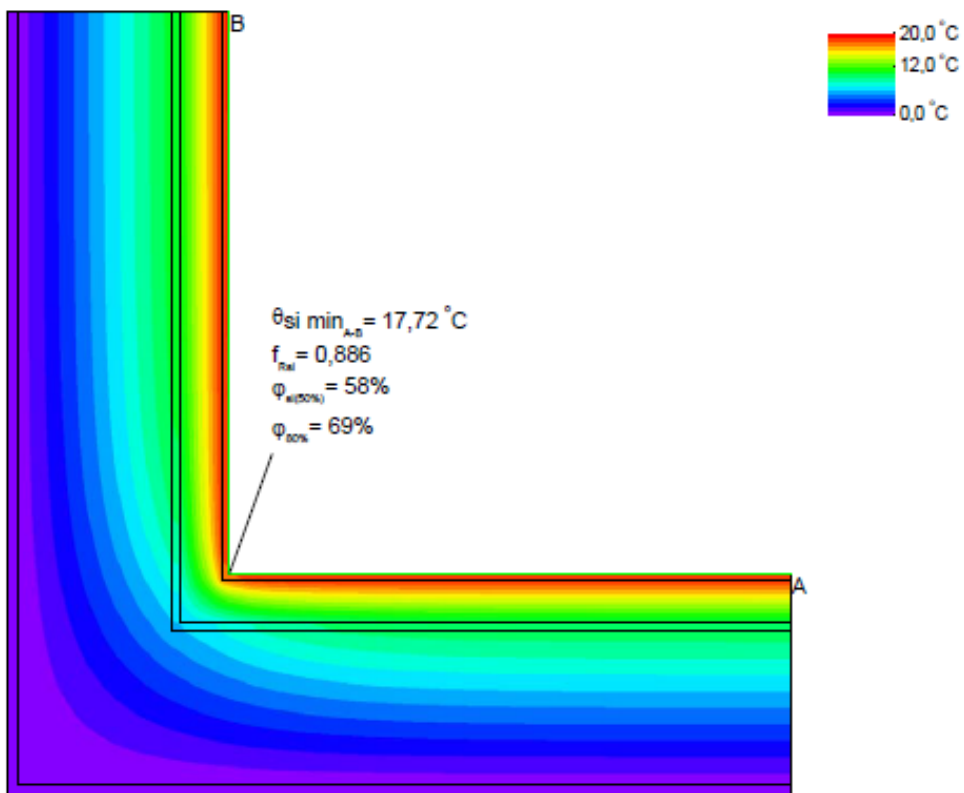


Figura 18: criterio de higiene