

GRAPHICS

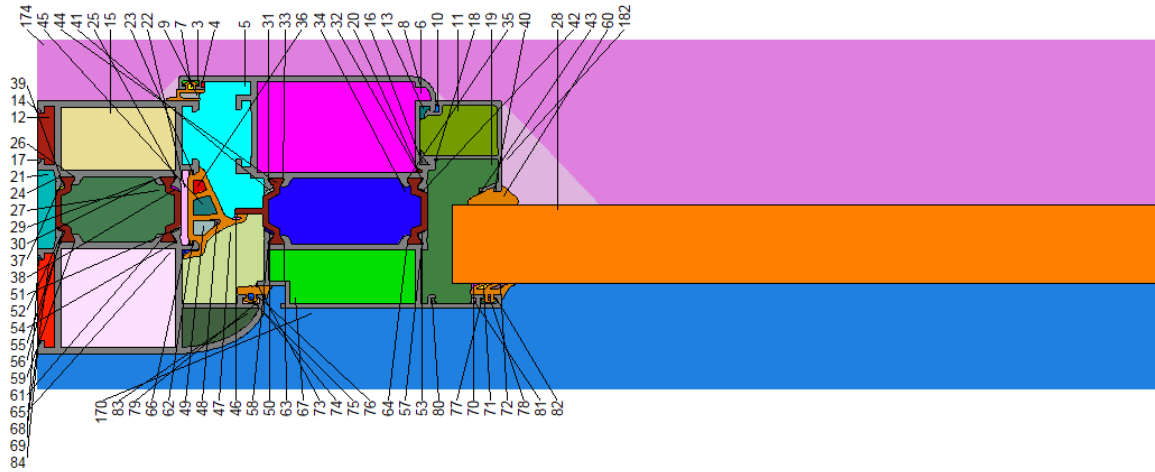


Figure 1. Frame section (with colour numbers)

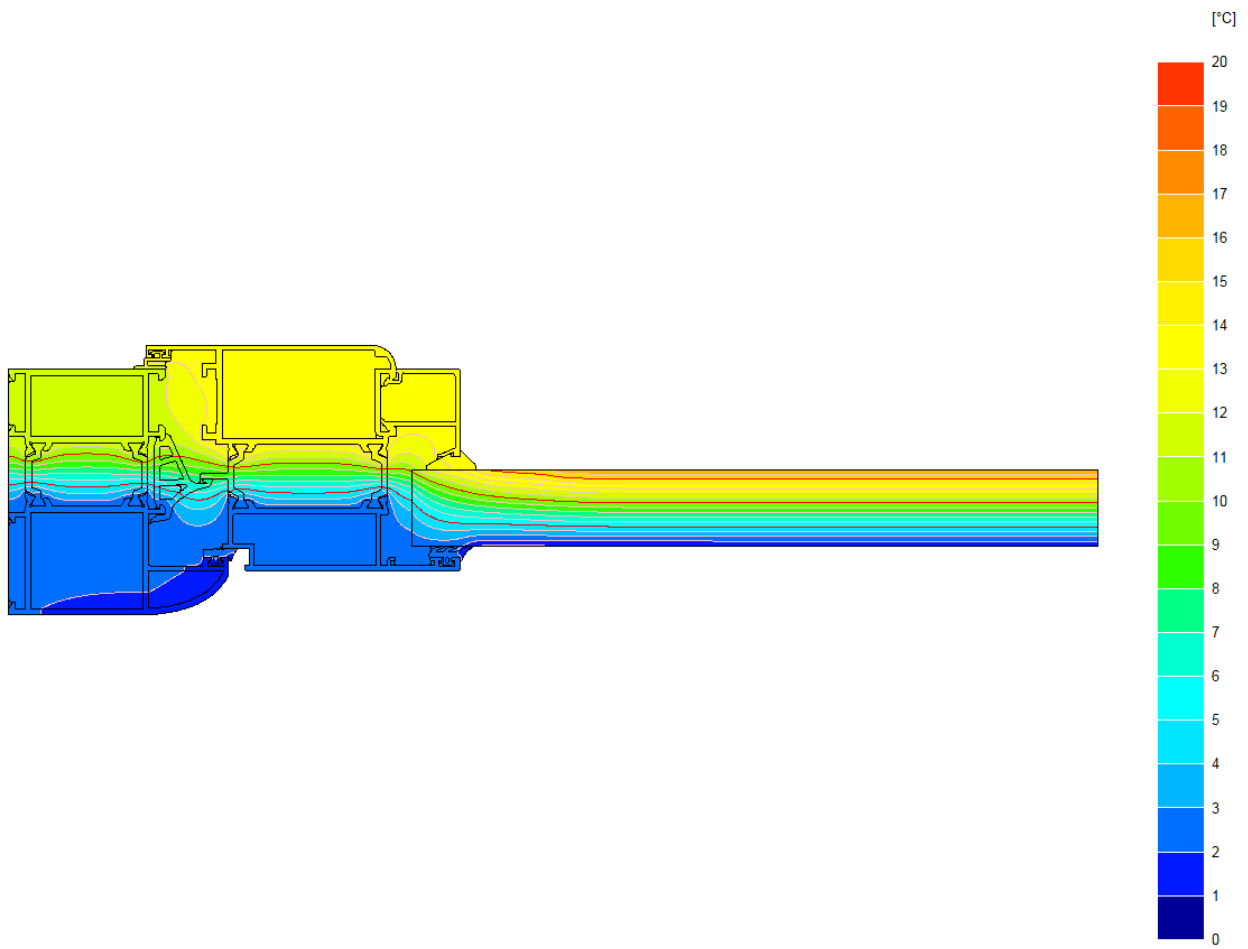


Figure 2. Isotherms (colour increment of 1°C, line increments of 1°C and 5°C)

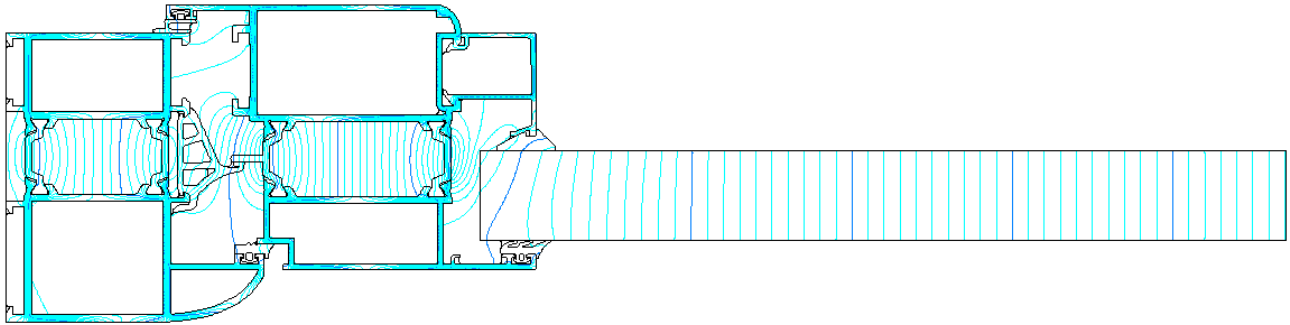


Figure 3. Heat flow lines (increment 0.1 W/m).

### **BISCO DATA SUMMARY**

BISCO data file name           **bisco\_temp.tif.bsc**  
 Bitmap file name               **bisco\_temp.tif.bmp**  
 Pixel width                      **0.0001 m**  
 Triangulation size              **5 pixels**  
 Number of nodes                **70591**

#### Material thermal conductivity table

Col.	Name	lambda [W/mK]	eps [-]
8	aluminium	160.000	
28	insulation	0.035	
44	polyamid reinf.	0.300	
60	EPDM	0.250	

#### Boundary condition table

Col.	Name	t [-C]	h [W/m <sup>2</sup> K]	q [W/m <sup>2</sup> ]
170	exterior	0.0	25.00	0
174	interior (normal)	20.0	7.70	0
182	interior (reduced)	20.0	5.00	0

#### Cavity equivalent thermal conductivity table

Col. lambda lambda [W/mK]	Col. lambda lambda [W/mK]	Col. lambda lambda [W/mK]	Col.
3 0.032	4 0.028	5 0.134	6 0.118
7 0.030	9 0.031	10 0.029	11 0.075
12 0.067	13 0.033	14 0.029	15 0.090
16 0.031	17 0.029	18 0.026	19 0.133
20 0.029	21 0.088	22 0.068	23 0.028
24 0.027	25 0.027	26 0.026	27 0.088
29 0.026	30 0.026	31 0.027	32 0.027
33 0.026	34 0.094	35 0.026	36 0.036
37 0.026	38 0.028	39 0.028	40 0.028
41 0.030	42 0.027	43 0.027	45 0.041
46 0.028	47 0.093	48 0.029	49 0.037
50 0.030	51 0.028	52 0.028	53 0.027
54 0.027	55 0.025	56 0.027	57 0.027
58 0.027	59 0.026	61 0.026	62 0.028
63 0.026	64 0.026	65 0.110	66 0.031
67 0.077	68 0.083	69 0.029	70 0.028
71 0.028	72 0.029	73 0.027	74 0.030
75 0.026	76 0.026	77 0.029	78 0.028
79 0.033	80 0.029	81 0.029	82 0.026
83 0.057	84 0.029		

## **BISCO MAIN RESULTS**

U-value of frame	<b>3.143 W/(m<sup>2</sup>.K)</b>
Width of frame	<b>0.1411 m</b>
U-value of panel 1	<b>1.173 W/(m<sup>2</sup>.K)</b>
Width of panel 1	<b>0.1996 m</b>

### Frame thermal transmittance calculation table

Thermal transmittance of frame (EN 10077-2)

$$U_f = (Q / (t_i - t_e) - U_{p1} * w_{p1} - U_{p2} * w_{p2}) / w_f = 3.143 \text{ W/(m}^2 \cdot \text{K)}$$

$$Q = 13.550 \text{ W/m}$$

$$t_i = 20.00^\circ\text{C}$$

$$t_e = 0.00^\circ\text{C}$$

$$U_{p1} = 1.173 \text{ W/(m}^2 \cdot \text{K)} \quad (\text{right edge of bitmap})$$

$$w_{p1} = 0.1996 \text{ m} \quad (\text{distance no. 2})$$

$$U_{p2} = 0.000 \text{ W/(m}^2 \cdot \text{K)}$$

$$w_{p2} = 0.0000 \text{ m}$$

$$w_f = 0.1411 \text{ m} \quad (\text{distance no. 1})$$