

**GRAPHICS**

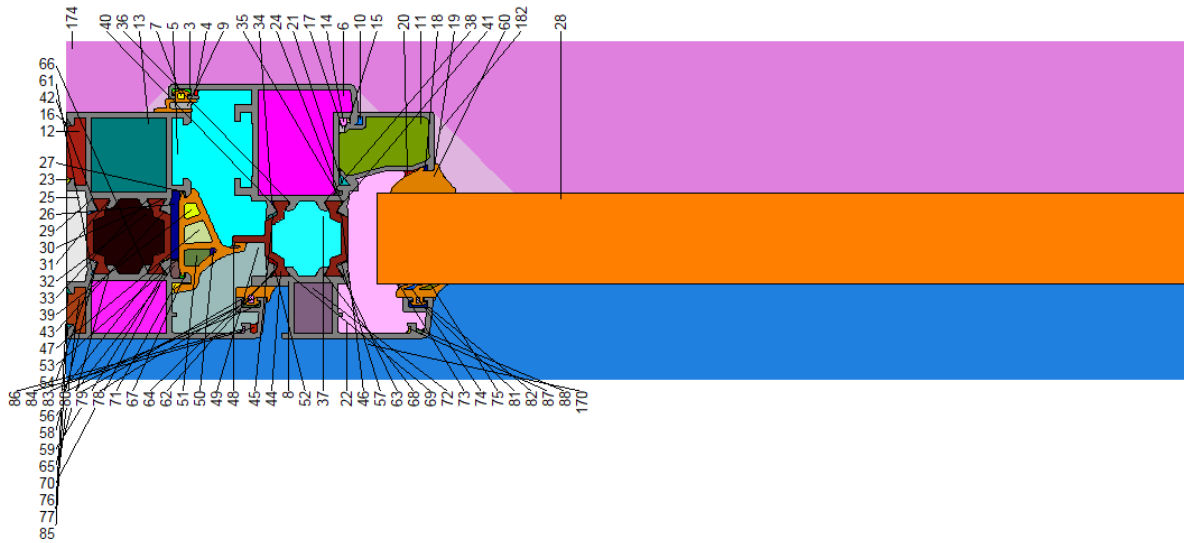
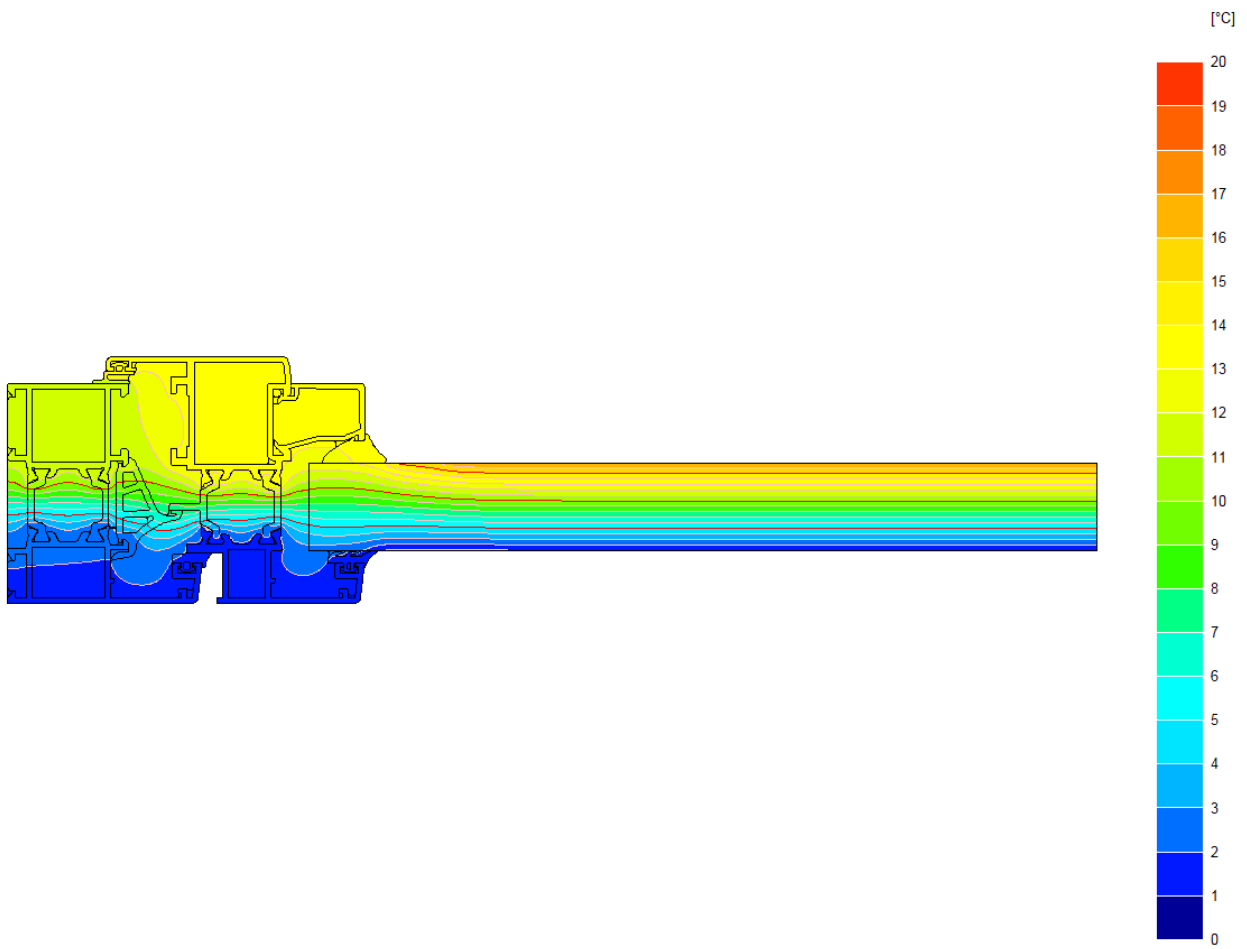


Figure 1. Frame section (with colour numbers)



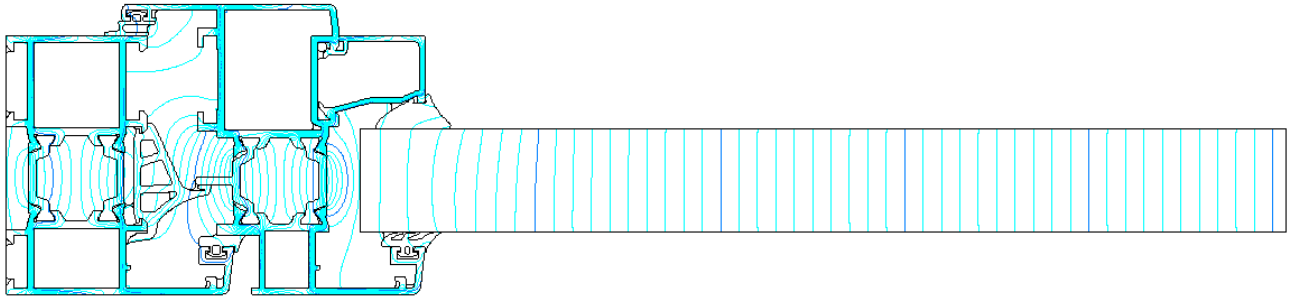


Figure 3. Heat flow lines (increment 0.1 W/m).

### **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                **50753**

#### 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. lambda lambda [W/mK]
3 0.029	4 0.028	5 0.134	6 0.102
7 0.030	9 0.031	10 0.029	11 0.071
12 0.067	13 0.085	14 0.031	15 0.028
16 0.029	17 0.030	18 0.028	19 0.026
20 0.030	21 0.031	22 0.126	23 0.029
24 0.029	25 0.088	26 0.059	27 0.028
29 0.027	30 0.027	31 0.026	32 0.075
33 0.026	34 0.027	35 0.027	36 0.026
37 0.076	38 0.027	39 0.036	40 0.026
41 0.026	42 0.027	43 0.027	45 0.030
46 0.027	47 0.041	48 0.028	49 0.078
50 0.029	51 0.037	52 0.029	53 0.028
54 0.027	55 0.027	56 0.033	57 0.027
58 0.025	59 0.027	61 0.027	62 0.025
63 0.028	64 0.027	65 0.026	66 0.026
67 0.028	68 0.026	69 0.026	70 0.066
71 0.031	72 0.059	73 0.028	74 0.028
75 0.029	76 0.051	77 0.029	78 0.030
79 0.026	80 0.026	81 0.029	82 0.032
83 0.029	84 0.030	85 0.029	86 0.028
87 0.028	88 0.029		

## **BISCO MAIN RESULTS**

U-value of frame	<b>3.248 W/(m<sup>2</sup>.K)</b>
Width of frame	<b>0.0972 m</b>
U-value of panel 1	<b>1.173 W/(m<sup>2</sup>.K)</b>
Width of panel 1	<b>0.1995 m</b>

### Frame thermal transmittance calculation table

Thermal transmittance of frame (EN 10077-2)

$$U_f = (Q / (t_i - t_e) - U_{p1} \cdot w_{p1} - U_{p2} \cdot w_{p2}) / w_f = 3.248 \text{ W/(m}^2 \cdot \text{K)}$$

$$Q = 10.994 \text{ W/m}$$

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

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

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

$$w_{p1} = 0.1995 \text{ m} \quad (\text{distance no. 2})$$

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

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

$$w_f = 0.0972 \text{ m} \quad (\text{distance no. 1})$$