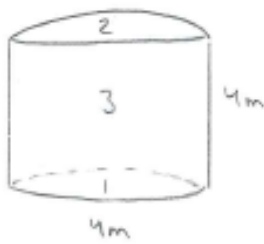


(Str-3)

Yta 2: $\epsilon_2=1, \alpha_2=1, \rho_2=0, \sigma=5,67 \cdot 10^{-8}$

Yta 3: $\epsilon_3=0,074, T_3=100^\circ\text{C}, \rho_3=0,926$

Yta 1: $\epsilon_1=0,11, T_1=500^\circ\text{C}, \rho_1=0,9$



► Sikt faktorer: $F_{11}=0, F_{22}=0, F_{12} = \begin{cases} 23,14, \text{ Ratio} = 1 \\ \text{Kurve 1} \Rightarrow F_{12} = 0,18 \end{cases}$

$F_{21}=F_{12}=0,18, F_{13}=F_{23}=1-F_{12}=0,82$

$F_{23} \cdot A_2 = F_{32} \cdot A_3 \Rightarrow F_{32} = \frac{A_2}{A_3} \cdot F_{23} = 0,82 \cdot \frac{\pi \cdot 2^2}{\pi \cdot 4 \cdot 4} = 0,205 = F_{31}$

$F_{33} = 1 - F_{32} - F_{31} = 1 - 0,205 - 0,205 = 0,59$

$F_{11}=0, F_{12}=0,18, F_{13}=0,82$

$F_{21}=0,18, F_{22}=0, F_{23}=0,82$

$F_{31}=0,205, F_{32}=0,205, F_{33}=0,59$

► (23-38) $(1 - F_{ii} + \frac{\epsilon_i}{\rho_i}) J_i - \sum_{j=1}^n F_{ij} J_j = \frac{\epsilon_i}{\rho_i} \sigma T_i^4$

(23-37) $(1 - F_{ii}) J_i - \sum_{j=1}^n F_{ij} J_j = \frac{q_i}{A_i}$

i=1: $(1 - F_{11} + \frac{\epsilon_1}{\rho_1}) \cdot J_1 - (F_{12} J_2 + F_{13} J_3) = \frac{\epsilon_1}{\rho_1} \sigma T_1^4$

i=2: $(1 - F_{22}) \cdot J_2 - (F_{21} J_1 + F_{23} J_3) = \frac{q_2}{A_2}$

i=3: $(1 - F_{33} + \frac{\epsilon_3}{\rho_3}) J_3 - (F_{31} J_1 + F_{32} J_2) = \frac{\epsilon_3}{\rho_3} \sigma T_3^4$

$$\begin{bmatrix} 1 - F_{11} + \frac{\epsilon_1}{\rho_1} & -F_{12} & -F_{13} \\ -F_{21} & 1 - F_{22} & -F_{23} \\ -F_{31} & -F_{32} & 1 - F_{33} + \frac{\epsilon_3}{\rho_3} \end{bmatrix} \begin{bmatrix} J_1 \\ J_2 \\ J_3 \end{bmatrix} = \begin{bmatrix} \frac{\epsilon_1}{\rho_1} \sigma T_1^4 \\ q_2/A_2 \\ \frac{\epsilon_3}{\rho_3} \sigma T_3^4 \end{bmatrix} \Rightarrow \begin{matrix} J_1 = 7158 \text{ W/m}^2 \\ J_2 = 5924 \text{ W/m}^2 \\ J_3 = 5653 \text{ W/m}^2 \end{matrix}$$

(23-35): $q_2 = A_2 (J_3 - (F_{31} J_1 + F_{32} J_2 + F_{33} J_3)) =$

$= \pi \cdot 4 \cdot 4 (5653 - (0,205 \cdot 7158 + 0,205 \cdot 5924 + 0,59 \cdot 5653)) =$

$= -18300 \text{ J/s} \Rightarrow 18300 \text{ J/s strålar ut ur väggen}$