Calculating the U-Value for an element with two layers and resistance of surface internal and external. Resistance of surface

$$R_{se} = 0.04 \ \frac{m^2 K}{W} \tag{1}$$

$$R_{si} = 0.13 \ \frac{m^2 K}{W} \tag{2}$$

Parameters for elements

$$d_1 = 0.20 \ m \tag{3}$$

$$\lambda_1 = 0.04 \ \frac{W}{mK} \tag{4}$$

$$d_2 = 0.10 \ m \tag{5}$$

$$\lambda_2 = 0.50 \ \frac{W}{mK} \tag{6}$$

Calculate thermal resistance

$$R = R_{se} + \frac{d_1}{\lambda_1} + \frac{d_2}{\lambda_2} + R_{si} = 0.04 + \frac{0.20}{0.04} + \frac{0.10}{0.50} + 0.13 = 6.08 \ \frac{m^2 K}{W} \tag{7}$$

Calculate U-Value

$$U = \frac{1.00}{R} = \frac{1.00}{6.08} = 0.16 \ \frac{W}{m^2 K} \tag{8}$$