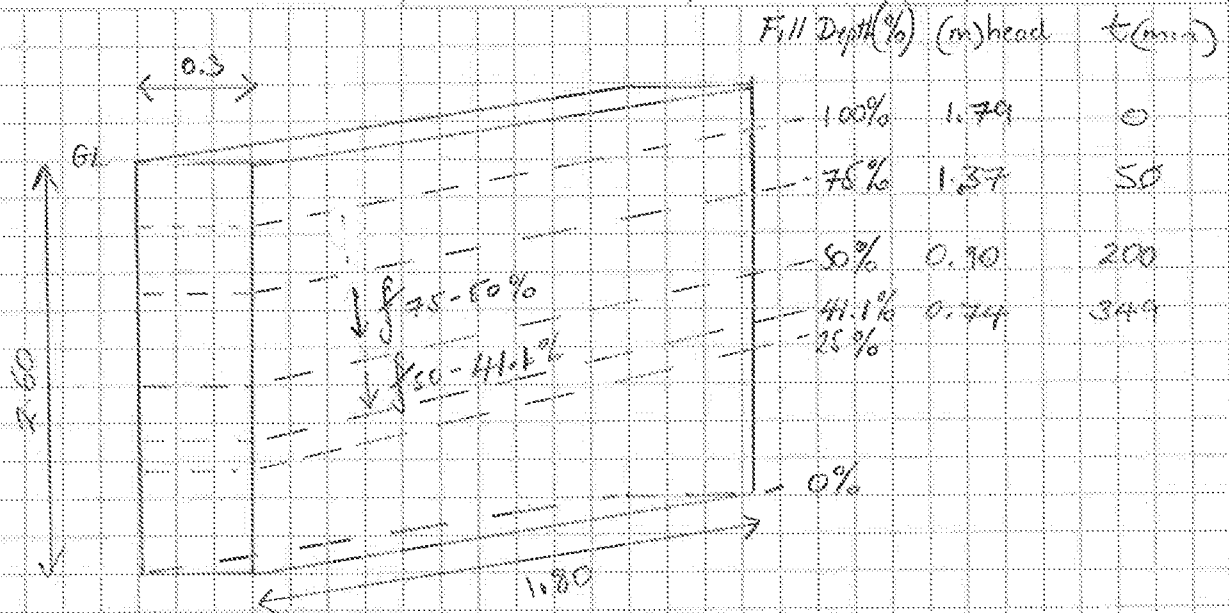


TPI



From BRE 365 (2001)

Infiltration (f) from 75% to 50% fill depth $f_{75-50\%}$

$$\text{where } f_{75-50\%} = \frac{V_{p_{75-50\%}}}{a_{p_{50\%}} \times t_{75-50\%}} \quad (1)$$

$$V_{p_{75-50\%}} = 1.80 \times 0.30 \times (1.37 - 0.90) = 0.25 \text{ m}^3$$

$$a_{p_{50\%}} = \left[1.80 \times \left[\left(\frac{1.37 - 0.90}{2} \right) + 0.90 \right] \times 2 \right] + \left[0.30 \times \left[\left(\frac{1.37 - 0.90}{2} \right) + 0.90 \right] \times 2 \right] + (1.80 \times 0.3)$$

$$= 4.09 + 0.68 + 0.54$$

$$= 5.31 \text{ m}^2$$

$$t_{75-50\%} = 200 - 50 \text{ min} = 150 \text{ min}$$

$$f_{75-50\%} = \frac{0.25}{5.31 \times 150} = 3.1 \times 10^{-4} \text{ m/min}$$

$$= 5.2 \times 10^{-6} \text{ m/sec}$$



and infiltration $f_{50-41.1\%}$

$$V_{p_{50-41.1\%}} = 1.80 \times 0.30 \times (0.90 - 0.74) = 0.086 \text{ m}^3$$

$$\begin{aligned} a_{p_{50-41.1\%}} &= \left[1.80 \times \left[\left(\frac{0.90 - 0.74}{2} \right) + 0.74 \right] \times 2 \right] \\ &\quad + \left[0.3 \times \left[\left(\frac{0.90 - 0.74}{2} \right) + 0.74 \right] \times 2 \right] \\ &\quad + (1.80 \times 0.3) \\ &= 2.95 + 0.25 + 0.54 \\ &= 3.74 \text{ m}^2 \end{aligned}$$

$$t_{50-41.1\%} = 349 - 200 \text{ min} = 149 \text{ min}$$

$$\begin{aligned} \text{ii } \textcircled{1} \quad f_{50-41.1\%} &= \frac{0.086}{3.74 \times 149} = 1.5 \times 10^{-4} \text{ m/min} \\ &= \underline{\underline{2.6 \times 10^{-6} \text{ m/sec}}} \end{aligned}$$