Quiz 4

HVAC

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3 0.8 x 1.2 m double-hung wood window $\boxed{f = 1.23}$

Wind 37 km/h at $\theta = 40°$

using figure 6-2:

$\theta = 40°$

$C_p \approx 0.48$

using table 6-1:

Loose fit : $K = 6.0$

$\frac{3}{32}$ in crack = 0.09375 in

12 inches = 1 foot

0.09375 inches = ? feet

$\boxed{7.8125 \times 10^{-3} \text{ ft}}$

$$\Delta P_w = C_p \frac{f}{2g_c} V_w^2$$

$$\Delta P_w = 0.48 \times \frac{1.23}{2} \left[10.28 \frac{m}{s} \right]^2$$

$$= 31.196 \text{ Pa}$$

$\Delta P_w = 31.196$ Pa, $K = 6.0$ } from graph $= \frac{\dot{Q}}{L} = 1.55 \frac{\text{cfm}}{\text{ft}}$

$$\dot{Q} = 1.55 \frac{\text{cfm}}{\text{ft}} \times 7.8125 \times 10^{-3} \text{ ft} = \boxed{0.012109 \text{ cfm}}$$