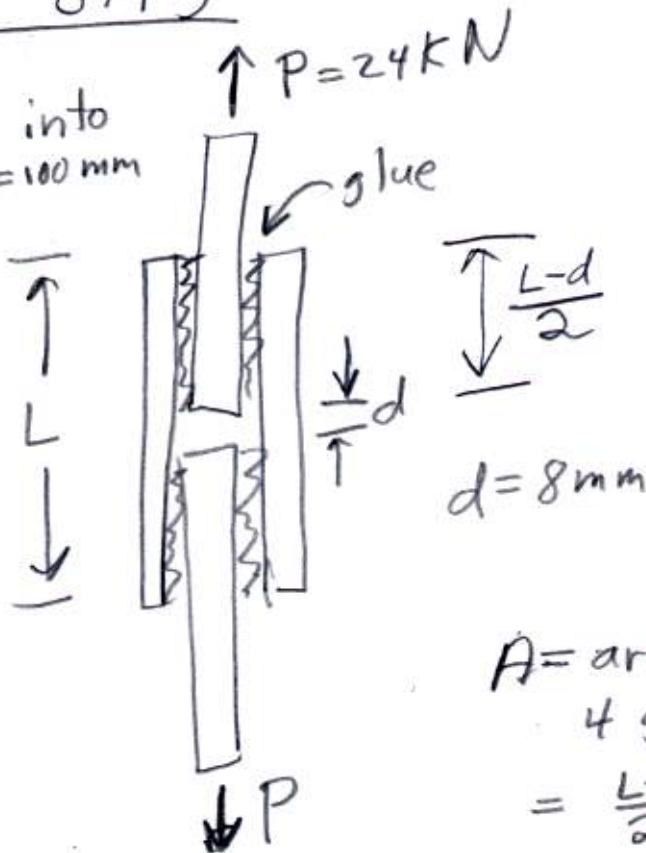
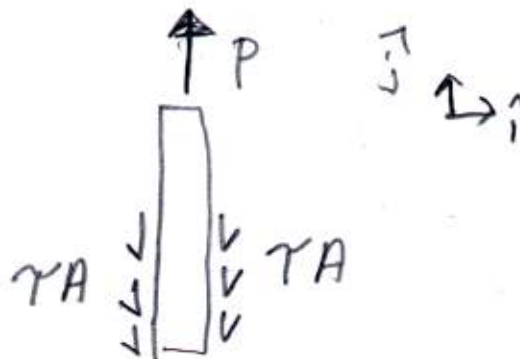


B&J 8.13

width into page = $w = 100 \text{ mm}$



Typical FBD



$A = \text{area of one of 4 glue panels}$
 $= \frac{L-d}{2} \cdot w$

Strength of glue = $\tau_g = 800 \text{ kPa}$. Minimum $L = ?$

$$\sum F_y = 0 \Rightarrow P - 2\tau A = 0 \Rightarrow \tau = \frac{P}{2A} = \frac{P}{2 \cdot \left(\frac{L-d}{2}\right)w} = \frac{P}{(L-d)w}$$

Don't break! $\Rightarrow \tau \leq \tau_g$

$$\frac{P}{(L-d)w} \leq \tau_g$$

$$\frac{P}{w\tau_g} \leq L-d$$

$$\Rightarrow L \geq \frac{P}{w\tau_g} - d = \frac{24 \cdot 10^3 \text{ N}}{(0.1 \text{ m}) \cdot 8 \cdot 10^5 \text{ N/m}^2} - 8 \text{ mm}$$

min. value of L

$$\Rightarrow L \geq 3 \cdot 10^{-1} \text{ m} - 8 \text{ mm} = \boxed{292 \text{ mm}}$$

[Could have set gap to zero & had just as useful an answer.]