width into page = \( w = 100 \text{ mm} \)

\[ P = 24 \text{ kN} \]

**Typical FBD**

\[ \begin{align*}
\gamma A & = \frac{L - d}{2} \\
\gamma A & = \frac{L}{w} \\
\end{align*} \]

\( d = 8 \text{ mm} \)

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

Strength of glue = \( T_g \)

\( = 800 \text{ kPa} \)

\[ \sum F_y = 0 \Rightarrow P - 2\gamma A = 0 \Rightarrow \gamma = \frac{P}{2A} = \frac{P}{2 \cdot \frac{L - d}{2} w} = \frac{P}{(L - d) w} \]

Don't break! \( \Rightarrow \gamma \leq T_g \)

\[ \frac{P}{(L - d) w} \leq T_g \]

\[ \frac{P}{w T_g} \leq L - d \]

\[ L \geq \frac{P}{w T_g} - d = \frac{24 \times 10^3 \text{ N}}{(0.1 \text{ m}) \cdot 8 \times 10^5 \text{ N/m}^2} - 8 \text{ mm} = 292 \text{ mm} \]

\[ \text{min. value of } L \]

(Could have set gap to zero & had just as useful an answer)