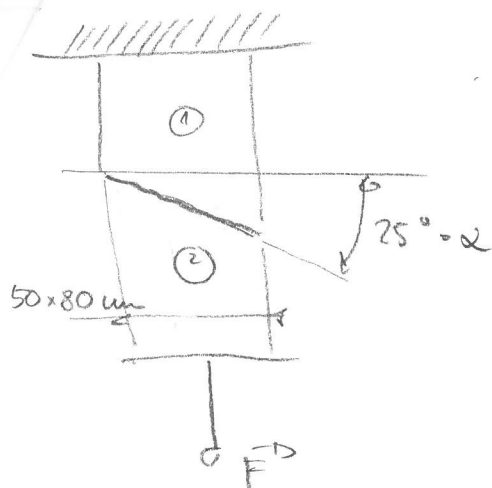
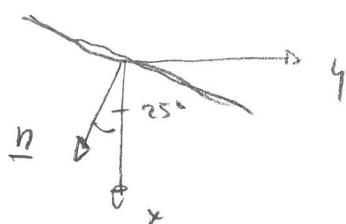




Dva materiály jsou slepeny po del hřany naklonem pod úhlem $\alpha = 25^\circ$ vzhledem k vodorovné rovině. Lepidlo snese maximálně $\sigma = 800 \text{ kPa}$ a $\tau = 600 \text{ kPa}$ zároveň, stanovte sílu F .

$$\begin{bmatrix} \sigma & \tau \\ \tau & \sigma_y \end{bmatrix} = \begin{bmatrix} \cos(25^\circ) & -\sin(25^\circ) \\ \sin(25^\circ) & \cos(25^\circ) \end{bmatrix}^T \begin{bmatrix} \frac{F}{S} & 0 \\ 0 & 0 \end{bmatrix}$$

$$\begin{bmatrix} \cos(-25^\circ) & -\sin(-25^\circ) \\ \sin(-25^\circ) & \cos(-25^\circ) \end{bmatrix}$$



$$\begin{bmatrix} \sigma & \tau \\ \tau & \sigma_y \end{bmatrix} = \begin{bmatrix} \cos 25^\circ & -\sin 25^\circ \\ +\sin 25^\circ & \cos 25^\circ \end{bmatrix} \begin{bmatrix} \frac{F}{S} \cos 25^\circ & \frac{F}{S} \sin 25^\circ \\ 0 & 0 \end{bmatrix}$$

$$\Rightarrow \sigma = \frac{F}{S} \cos^2 25^\circ \Rightarrow 0.8 = \frac{F}{50 \cdot 80} \cdot \cos^2 25^\circ \Rightarrow F = \frac{0.8 \cdot 50 \cdot 80}{\cos^2 25^\circ} = 3.9 \cdot 10^3 \text{ N}$$

$$\tau = \frac{F}{S} \cos 25^\circ \sin 25^\circ \Rightarrow 0.6 = \frac{F}{50 \cdot 80} \cdot \cos 25^\circ \sin 25^\circ \Rightarrow$$

$$\Rightarrow F = \frac{0.6 \cdot 50 \cdot 80}{\cos 25^\circ \cdot \sin 25^\circ} = 6.3 \cdot 10^3 \text{ N}$$