

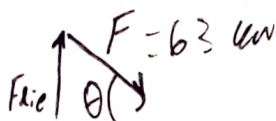
1. a) $F = L t Y_f$ $\sigma = 315 (.21)^{.54} = 135.62$

~~in MPa~~

$= (230)(2.02)(135.62)$ mm. mm. N/mm²

$F = 63,000 \text{ N} = \boxed{63 \text{ kN}}$

b)



$\sin \theta = \frac{F_{die}}{F}$

$63 \sin(22) = F_{die} = \boxed{23.6 \text{ kN}}$

2)

V-bending

edge-bending

4.774 kN
 316 S.S.
 $F_1 = 1.33 \frac{580(120)(.7^2)}{9.5}$

$F_3 = .33 \frac{580(120)(.7^2)}{9.5} = 1.184 \text{ kN}$

11.018 kN
 $F_2 = 1.33 \frac{580(120)(1.4^2)}{9.5}$

$F_4 = .33 \frac{580(120)(1.4^2)}{9.5} = 4.736 \text{ kN}$

T6 A.

$F_{a5} = 1.33 \frac{310(120)(.7^2)}{9.5} = 2.551 \text{ kN}$

$F_{a7} = .33 \frac{310(120)(.7^2)}{9.5} = .633 \text{ kN}$

$F_{a6} = 1.33 \frac{310(120)(1.4^2)}{9.5} = 10.202 \text{ kN}$

$F_{a8} = .33 \frac{310(120)(1.4^2)}{9.5} = 2.532 \text{ kN}$

c. $F_7, F_3, F_8, F_5, F_4, F_1, F_6, F_2$

3. a) bending rests between Yield Point & UTS.

b) it is cheaper for a company to pay this guy to bend w/ this machine than to pay me to do it by hand, but, I'm faster.