4 URČETE BEZPEČNOST PRUTU VŮČI MSP A MAXIMÁLNÍ NATOČENÍ

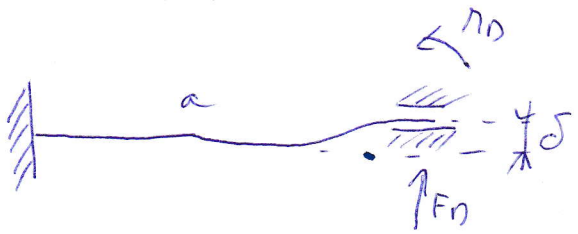
$a = 400\,mm$

$\delta = 0{,}15\,mm$

S 235

$d = 30\,mm$

$R_e = 235$



VÝPOČET SÍLY F_D A M_D

$x \in \langle 0, a \rangle$

$M_{O1} = F_D \cdot x + M_D$

$\frac{dM_{O1}}{dF_D} = x$

$\frac{dM_{O1}}{dM_D} = 1$

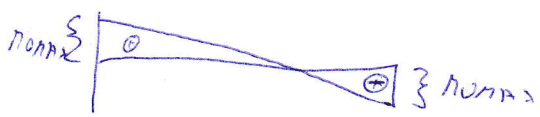
$w_{F_D} = \delta = \frac{dU}{dF_D}$

$F_D = 783\,N$

$\varphi_{M_D} = 0 = \frac{dU}{dM_D}$

$M_D = -1{,}57e+5\,N \cdot mm$

$M_{OMAX} = 1{,}57e5$



$\tau = \frac{M_{OMAX}}{W_O} \leq \frac{R_e}{k_k}$

$k_k = \frac{R_e W_O}{M_{OMAX}} = 3{,}98 \quad (3)$