

Dati

Carichi:

$S_0 = 200 \text{ N}$

$S_n = 30 \text{ N}$

$C = 32 \text{ Nm}$

Geometria Struttura:

$a = 50 \text{ mm}$

$b = 85 \text{ mm}$

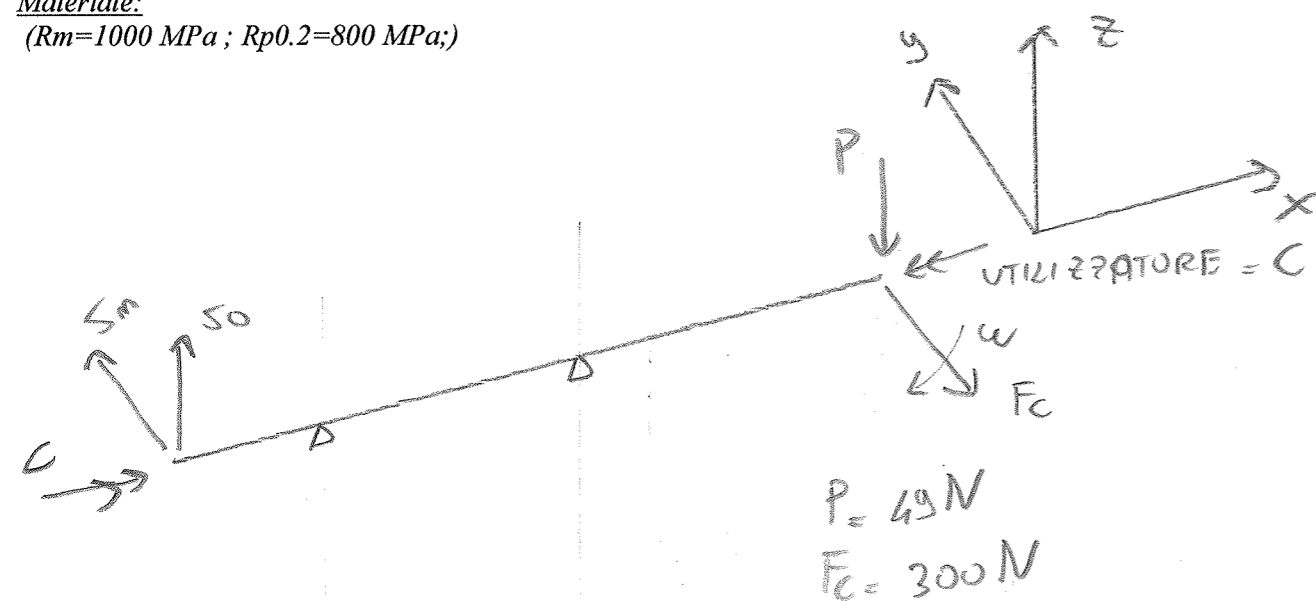
$c = 150 \text{ mm}$

Diametro del cestello $D = 500 \text{ mm}$

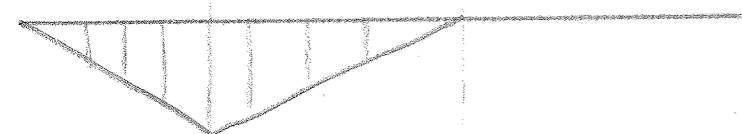
Sezione albero nel punto B, $d = 15 \text{ mm}$

Materiale:

($R_m = 1000 \text{ MPa}$; $R_{p0.2} = 800 \text{ MPa}$;))

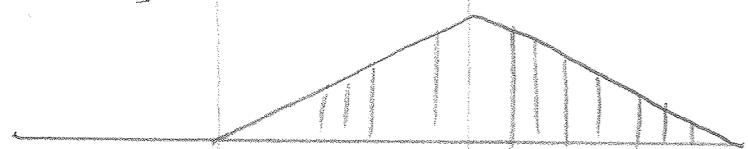


M_f
(S_0/S_n)



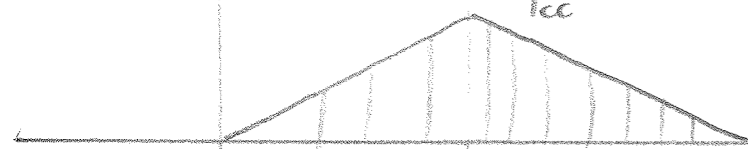
P_c

$M_f(P)$

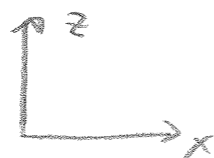


F_{cc}

$M_f(F_c)$



$M_t(C)$



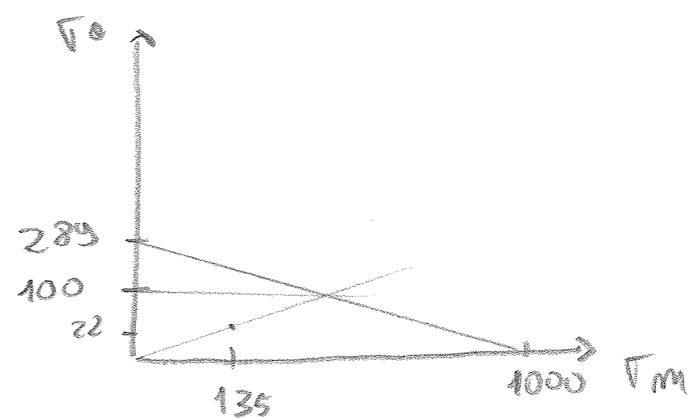
ROTANTE

$$\sigma_{\text{coss}} = \frac{16 M_t}{\pi d^3} = 48 \text{ MPa}$$

$$\sigma_0 = \frac{32 P_c}{\pi d^3} = 22 \text{ MPa}$$

$$\tau_m = \frac{32 F_{cc}}{\pi d^3} = 135 \text{ MPa}$$

$$\sigma_{\text{Faf}} = \frac{0,5 R_m \cdot 0,9 \cdot 0,9}{1,4} = 289 \text{ MPa}$$



$\sigma_{\text{lim}} = 100 \text{ MPa}$

$\tau_{\text{lim}} = 0,8 R_m$

$$\sigma_{\text{GPR}} = \sqrt{22^2 + \left(\frac{100}{800}\right)^2 48^2} = 23 \text{ MPa}$$

35

$$\eta = \frac{100}{23} = 4,3$$

- GAUZE - RANKINE - NAVIER

$$\sigma_{\text{As}} = \begin{bmatrix} 0 & -B & 0 \\ -B & 0 & 0 \\ 0 & 0 & -A \end{bmatrix} \rightarrow \text{SFORZI PRINCIPALI} \begin{bmatrix} B & & \\ & -B & \\ & & -A \end{bmatrix}$$

$$\sigma_{\text{tratt}} = \frac{R_m}{B}$$

$$\sigma_{\text{cont}} = \frac{|R_c|}{\max\{-B; -A\}}$$