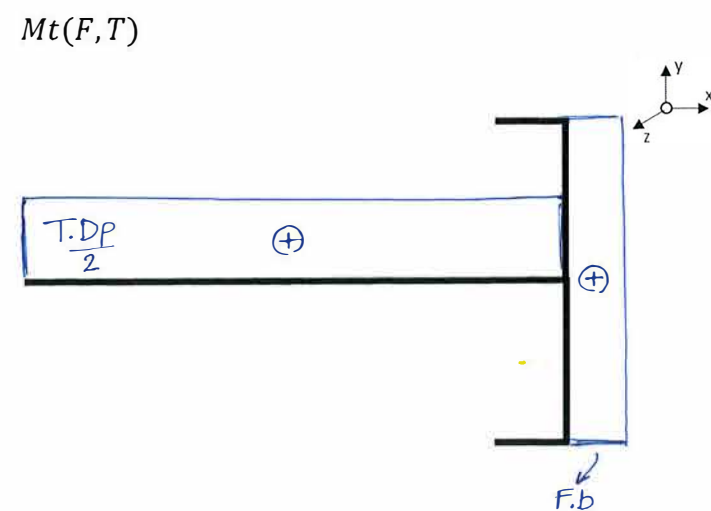
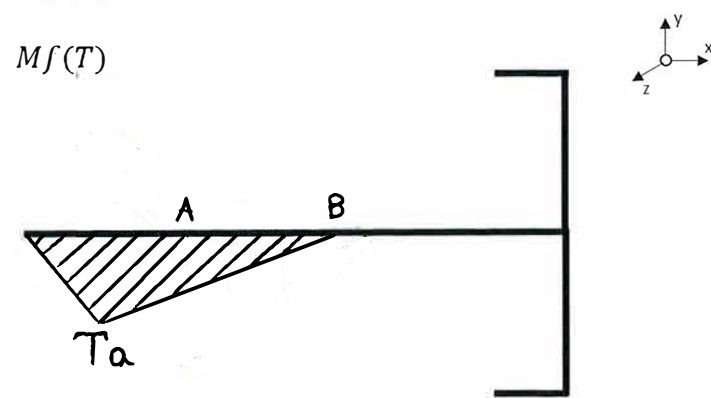
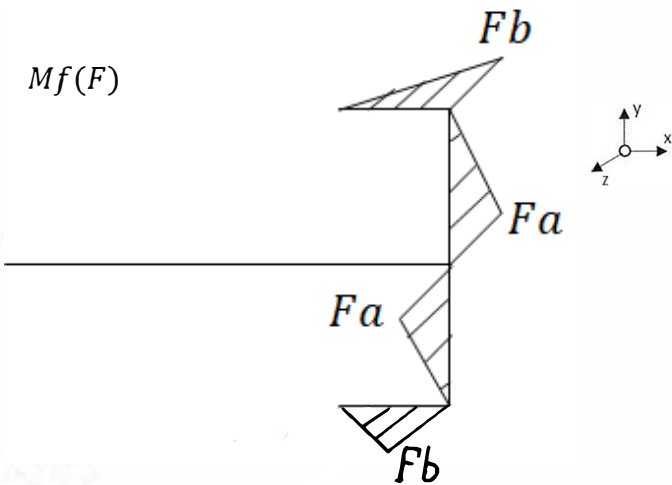


**Carichi:**  
 $T = 2000 \text{ N}$

**Coefficienti:**  
 $K_{tf} = 1.7$   
 $K_{tt} = 1.3$   
 $b_2 = 0.85$   
 $b_3 = 0.85$   
 $q = 0.9$

**Geometria:**  
 $D_p = 150 \text{ mm}$  (diametro della puleggia)  
 $D = 30 \text{ mm}$   
 $d = 25 \text{ mm}$   
 $R = 5 \text{ mm}$   
 $a = 120 \text{ mm}$   
 $b = 50 \text{ mm}$

**Materiale:**  
 $\sigma_R = 850 \text{ MPa}$   
 $\sigma_{sn} = 650 \text{ MPa}$



①  $T \cdot D_p / 2 = F \cdot 2a \rightarrow F = 625 \text{ N}$

③ Verifica statica sezione  $S_b$ :  $M_t = 2Fa = 150 \text{ N.m}$

$\tau = \frac{16Mt}{\pi d^3} = 48.89 \text{ N} \rightarrow \sigma_{GT} = \sigma_I - \sigma_{III} = 2\tau = 97 \text{ MPa}$

} prima plasticizzazione =  $\frac{\sigma_{sn}}{K_{tt} \cdot \sigma_{GT}} = 5.11$  } verificato

} plasticizzazione totale =  $\frac{\sigma_{sn}}{\sigma_{GT}} = 6.65$  }

④ Verifica fatica sezione  $S_a$ :

$M_{fl} = T \cdot a = 240 \text{ Nm}$   
 $\rightarrow \sigma_a = \frac{32 M_{fl}}{\pi d^3} = 156.5 \text{ MPa}$

$M_t = 150 \text{ Nm}$   
 $\rightarrow \tau_m = \frac{16 M_t}{\pi d^3} = 48.89 \text{ MPa}$

$\sigma_{lim} = \sigma_{Kf} = \frac{0.5 R_m \cdot b_2 \cdot b_3}{K_f} = 188.38 \text{ MPa}$

$K_f = 1 + q(K_{ff} - 1) = 1.63$

$\tau_{lim} = \frac{R_{sn}}{\sqrt{3}} = 375.3 \text{ MPa}$

$H = 0.51 \rightarrow \sigma_{GP} = \sqrt{\sigma_a^2 + H^2 \tau_m^2} = 158.37 \text{ MPa}$

$\rightarrow y = \frac{\sigma_{lim}}{\sigma_{GP}} = 1.19 \rightarrow \text{Non verificato}$

