ESTRUSIONE

$$\varepsilon_1 = \ln\left(\frac{A_0}{A_f}\right) = \ln R \qquad W = A_0 L_0 \bar{Y} \varepsilon_1 = F L_0 = p A_0 L_0$$

$$u = Y \varepsilon_1 \qquad p = u = Y \ln \frac{A_0}{A_f}$$

$$p = Y(a + b \ln R) \quad \text{ideale}$$

$$p = Y\left(1 + \frac{\operatorname{tg}\alpha}{\mu}\right)\left[R^{\mu \operatorname{cotg}\alpha} - 1\right]$$

TRAFILATURA

$$\sigma_d = Y \ln\left(\frac{A_0}{A_f}\right) \qquad F = \bar{Y} A_f \ln\left(\frac{A_0}{A_f}\right)$$

CON ATTRITO

$$\sigma_d = Y\left[1 + \frac{\operatorname{tg}\alpha}{\mu}\right]\left[1 - \left(\frac{A_f}{A_0}\right)^{\mu \operatorname{cotg}\alpha}\right] \qquad \bar{Y} = K \frac{\varepsilon_1^n}{n+1}$$

CONTRIB. ANGOLO

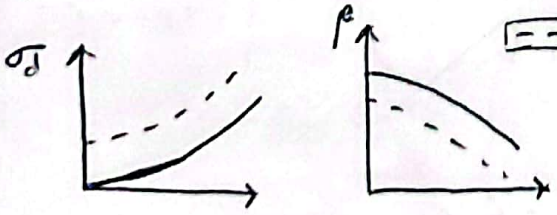
$$\sigma_d = Y\left(1 + \frac{\mu}{\alpha}\right)\left[\ln\left(\frac{A_0}{A_f}\right) + \frac{2}{3}\alpha\right]$$

FATT. DISOMOGENEITÀ

$$\phi = 1 + 0{,}12 \frac{h}{L}$$

$$\sigma_d = \phi \bar{Y}\left(1 + \frac{\mu}{\alpha}\right) \ln\left(\frac{A_0}{A_f}\right) \leftarrow \text{CONTR. OMOG.}$$

$p = Y_f - \sigma$ PRESS. IN MATRICE ($\sigma = 0$ INGRESSO, $\sigma = \sigma_d$ IN USCITA)



CON CONTROTIRO

$$Y \ln\left(\frac{A_0}{A_f}\right) \leq Y \rightarrow \frac{A_0 - A_f}{A_0} = 1 - \frac{1}{e} = 63\%$$

$$1 - \frac{1}{e^{n+1}}$$