



$$\epsilon_{sy} \approx \frac{f_{sy}}{E_s} \approx \frac{500 \text{ MPa}}{205 \text{ GPa}}$$

Tension Stiffening: $\epsilon_{sym} \approx 0.8 \cdot \epsilon_{sy} \approx 0.002$

$$\epsilon_{sym} \approx 0.002$$

$$\epsilon_{cm} = -0.002$$

$$\epsilon_1 = \epsilon_x + (\epsilon_x + 0.002) \cdot \cot^2 \alpha$$

Regime 1: $\cot^2 \alpha = \frac{\rho_x f_s - \sigma_x}{\rho_z f_s - \sigma_z}$

$$k_c \cdot f_c' = \frac{(f_c')^{2/3}}{0.4 + 30 \epsilon_1} \Rightarrow$$

Regime 1: Change of boundary, $\sigma_{c3} \leq k_c f_c'$
 Regime 2: Change of load-carrying capacity
 $\epsilon_{x2}^2 = (k_c \cdot f_c' - \rho_z f_s + \sigma_z)(\rho_z f_s - \sigma_z)$