

FLEXION SIMPLE - SECTION RECTANGULAIRE
DIMENSIONNEMENT DES ACIERS EN FISSURATION PEU PREJUDICIABLE

$$b_0 ; d ; d' ; f_{c28} \rightarrow f_{bu} = \frac{0,85 * f_{c28}}{\theta * 1,50} ; f_c \rightarrow f_{ed} = \frac{f_e}{1,15} ; M_u \text{ et } M_{ser} \rightarrow \gamma = \frac{M_u}{M_{ser}}$$

$$\mu_{lu} = \frac{\frac{f_{c28}}{\theta}}{150 - 75.\theta.\gamma + 1,75 * (2,5 - \theta.\gamma) * \frac{f_{c28}}{\theta}}$$

$$\mu_{bu} = \frac{M_u}{b_0 * d^2 * f_{bu}}$$

μ_{bu} < μ_{lu} ?

NON

OUI

$$M_{lu} = \mu_{lu} * b_0 * d^2 * f_{bu}$$

$$\alpha = 1,25 * (1 - \sqrt{1 - 2\mu_{bu}})$$

$$\sigma_{sce} = \min \left\{ f_{ed} ; 9\gamma * f_{c28} - \frac{d'}{d} (13f_{c28} + 415) * K \right\}$$

$$z = d * (1 - 0,4\alpha)$$

$$A' = \frac{M_u - M_{lu}}{(d - d') * \sigma_{sce}}$$

$$A_u = \frac{M_u}{z * f_{ed}}$$

K=1 si θ=1,00.
 K=1,02 si θ=0,90.
 K=1,04 si θ=0,85.

$$\alpha = 1,25 * (1 - \sqrt{1 - 2\mu_{lu}})$$

$$z = d * (1 - 0,4\alpha)$$

$$A_{min} = 0,23b_0 * d * \frac{f_{c28}}{f_e}$$

Et prendre $A = \max\{A_u ; A_{min}\}$

$$\sigma_{se} = \min \{ f_{ed} ; (13f_{c28} + 415) * K - 9\gamma * f_{c28} \}$$

$$A = \frac{M_{lu}}{z * f_{ed}} + A' * \frac{\sigma_{sce}}{\sigma_{se}}$$