

SFORZO NORMALE

Titolo nota

27/10/2016

I mod. comp.

$$n = \frac{E_s}{E_c}$$

per C25/30

$$n = \frac{200000}{31500} = 6,35$$

effetti visivi

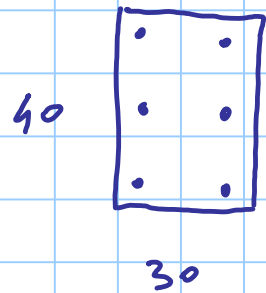
$$\sigma_w = \sigma_o (1 + \phi)$$

$$E_{c,vis} = \frac{E_c}{1 + \phi}$$

per tenere conto

$$n = 15$$

per ulteriori calcoli $\sigma_{m,22}$



6 $\phi 18$

$\phi 18$

$$A_s = 2.54 \text{ cm}^2$$

C25/30

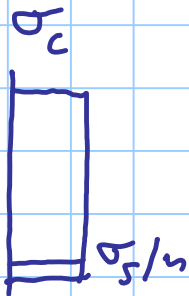
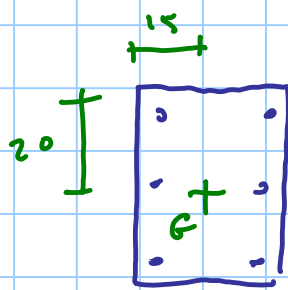
B450C

6 $\phi 18$

$$A_{s, \text{tot}} = 15.24 \text{ cm}^2$$

$$A_c = 30 \times 40 = 1200 \text{ cm}^2$$

$$N = 170 \text{ kN}$$



$$A_{ci} = A_c + n A_{s, \text{tot}}$$

all'applicazione del codice $n = 6,35$

$$A_{ci} = 1200 + 6,35 \times 15.24 = 1297 \text{ cm}^2$$

$$\sigma_c = \frac{N}{A_{ci}} = \frac{170 \times 10^3}{1297 \times 10^2} = 1.31 \text{ MPa}$$

TRAZIONE

$$\sigma_s = n \sigma_c = 6.35 \times 1.31 = 8.32 \text{ MPa}$$

$$f_{ctk} = 1.80 \text{ MPa}$$

$$\sigma_c < f_{ctk} \Rightarrow \text{non fessure}$$

fessurazione per

$$N_2 = A_{ci} f_{ctk} = 1297 \times 10^2 \times 1.80 \times 10^{-3} = 233.5 \text{ kN}$$

\Downarrow

$$\sigma_c = 1.80 \text{ MPa}$$

$$\sigma_s = 1.80 \times 6.35 = 11.43 \text{ MPa}$$

$$t = \infty \quad (\text{effort: } v_{i, \infty})$$

$$n = 15$$

$$A_{ci} = 1200 + 15 \times 15.24 = 1429 \text{ cm}^2$$

$$\sigma_c = \frac{170 \times 10}{1429} = 1.19 \text{ MPa}$$

$$\text{me } 1,31 \text{ MPa}$$

$$\sigma_s = 15 \times 1.19 = 17.85 \text{ MPa}$$

$$\text{me } 8,32 \text{ MPa}$$

II mod. comp.

N trazione

az 30×40 6 $\phi 18$

$$N_2 = 233,5 \text{ kN}$$

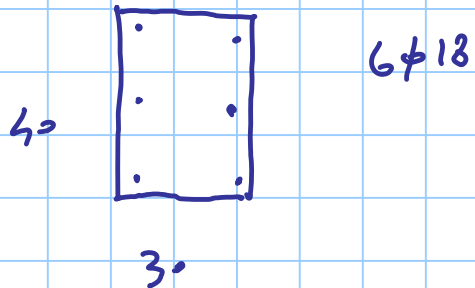
$$n = 6,35$$

per $N \leq 233,5 \text{ kN}$

I $\rightarrow T_{a, h_0}$

per $N > 233,5 \text{ kN}$

II $\rightarrow T_{e, h_0}$



cls $t_{a,0}$

cls $t_{e,0}$

$$\sigma_s = \frac{N}{A_{s,7.7}} = \frac{233,5 \times 10}{15,24} = 153,2 \text{ MPa}$$

II m.d. comp

COMPRESSIONE

$$A_{ci} = A_c + n A_{s, tot}$$

le verifiche vengono fatte per $t = \infty$, con $n = 15$

NTC 08

SLE tensioni

DM 96 e precedenti, TA

verifiche di resistenza

σ_c

σ_s

\rightarrow

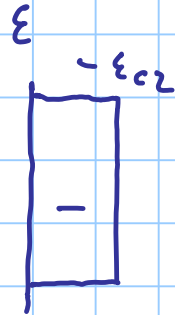
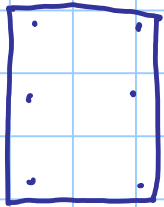
0.7

σ_c

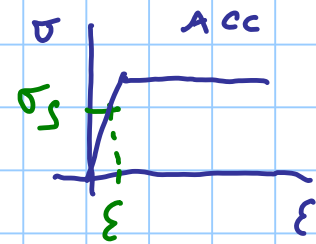
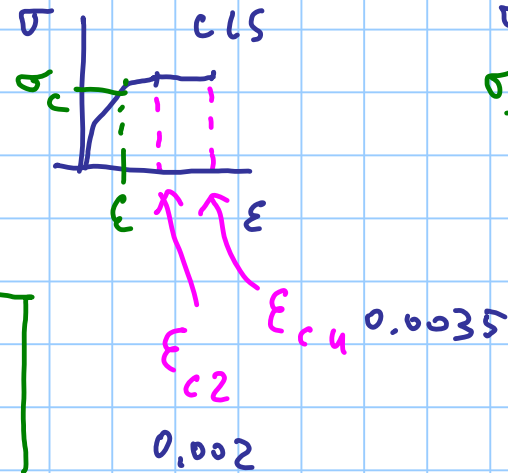
per s.d. N

III
COMPRESSIONE

m-d. comp.



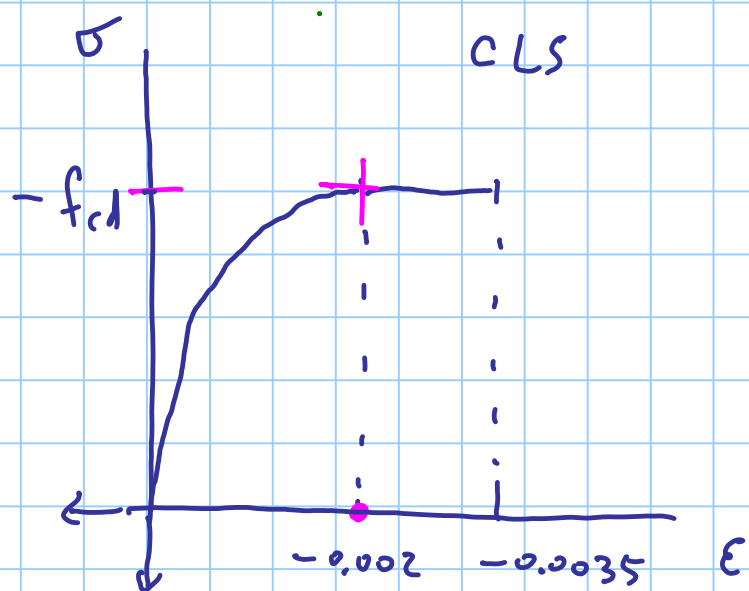
↓
condizione di
uso CLS



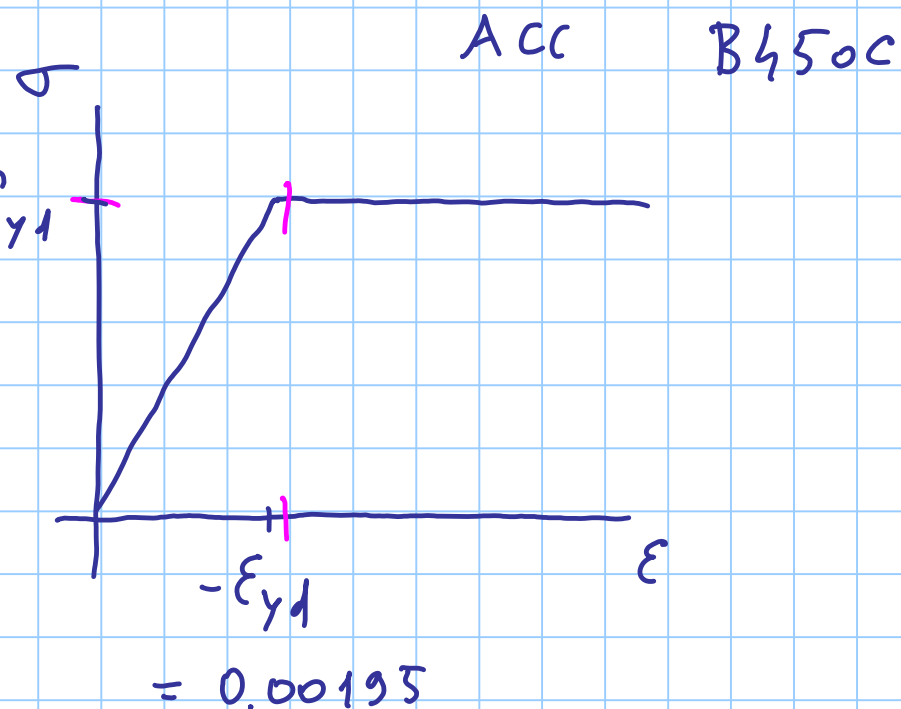
per CLS $|\epsilon| \leq |\epsilon_{cu}|$
(per sezioni parziali e ϵ_{cu})

per sezione unif. compress.

$$|\epsilon| \leq |\epsilon_{c2}|$$



$$391.3_{MPa} = f_{yd}$$



$$\epsilon_s = \epsilon_c = -0.002$$

$$\sigma_c = -f_{cd}$$

$$\sigma_s = -f_{yd}$$

per altri acciai
(es. B500C)
è diverso.

$$N_{Rd} = -A_c f_{cd} - A_{s,tot} f_{yd}$$

di trazione, invece

$$N_{Rd} = A_c f_{cd} + A_{s,tot} f_{yd}$$

della per compressione, che è compressione (-)

si 30x40 6φ18

$$N_{Rd} = (1200 \times 14.17 + 15.24 \times 391.3) \times 10^2 \times 10^{-3} = 2297 \text{ kN}$$

compression

NORMA

consideration sample M_{Ed}
↖

$$M_{Ed} \geq N_{Ed} \cdot e$$

$$e = 0.05 H \geq 20 \text{ mm}$$