

## 1. COLONNA-04

### Resistenza della colonna (flessione semplice)

(EC2 EN1992-1-1:2004, UNI EN1990-1-1:2004, )

$b = 0.300 \text{ m}$ ,  $h = 0.300 \text{ m}$

$A_s = 4\emptyset 20 + 4\emptyset 18$  ( $22.72 \text{ cm}^2$ )

Classe del CA : C25/30-B450C (EC2 §

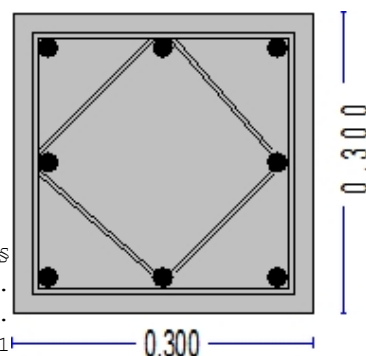
Classe di esposizione ambientale : XC1 (EC2 §4.4.

Copriferro :  $C_{nom} = 20 \text{ mm}$  (EC2 §4.4.

$\gamma_c = 1.50$ ,  $\gamma_s = 1.15$  (EC2 Tabella 2.1

$f_{cd} = \alpha_{cc} \cdot f_{ck} / \gamma_c = 0.85 \times 25 / 1.50 = 14.17 \text{ MPa}$  (EC2 §3.1.

$f_{yd} = f_{yk} / \gamma_s = 450 / 1.15 = 391 \text{ MPa}$  (EC2 §3.2.7)



### Dimensioni e carichi

Colonna di sezione rettangolare  $b = 0.300 \text{ m}$ ,  $h = 0.300 \text{ m}$

Armatura  $4\emptyset 20 + 4\emptyset 18$  ( $22.72 \text{ cm}^2$ )  $A_{stot}/A_c = 2.52\%$

Spessore efficace della sezione  $d = h - d_1$ ,  $d_1 = d_2 = C_{nom} + \emptyset_s + \emptyset/2 = 20 + 8 + 20/2 = 38 \text{ mm}$ ,  $d_x = 262 \text{ mm}$ ,  $d_y = 262 \text{ mm}$

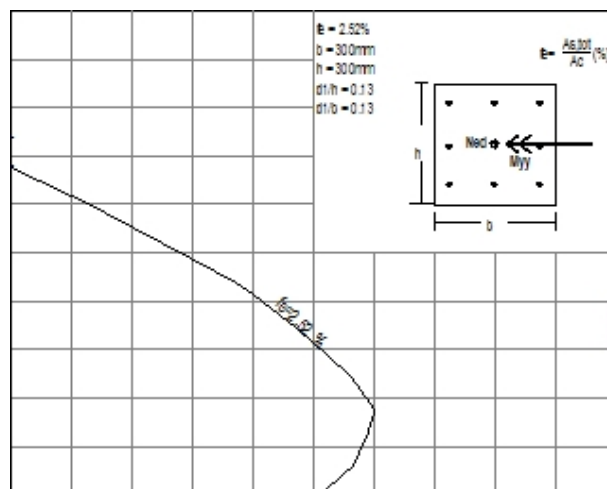
### 1.1. Portata della sezione della colonna (flessione semplice)

(EC2 EN1992-1-1:2004, §6.1)

Abaco di calcolo per la portata della colonna ottenuto dall'integrazione numerica delle tensioni  $b = 0.300 \text{ m}$ ,  $h = 0.300 \text{ m}$ ,  $b/h = 1.00$ ,  $d_1/h = 0.13$ ,  $d_1/b = 0.13$ ,  $4\emptyset 20 + 4\emptyset 18$   $A_{stot} = (22.72 \text{ cm}^2)$ ,  $A_{stot}/A_c = 2.52\%$

### 1.2. Carico massimo assiale, e momento flettente massimo Medyy

N= 2164kN, Myy= 0kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/-3.50$ )
N= 1921kN, Myy= 26kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/-3.43$ )
N= 1921kN, Myy= 26kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/-3.36$ )
N= 1921kN, Myy= 26kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/-3.15$ )
N= 1921kN, Myy= 26kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/-2.80$ )
N= 1921kN, Myy= 26kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/-2.33$ )
N= 1404kN, Myy= 74kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 0.00$ )
N= 1316kN, Myy= 81kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 0.18$ )
N= 1223kN, Myy= 87kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 0.39$ )
N= 1124kN, Myy= 93kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 0.62$ )
N= 1018kN, Myy= 99kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 0.88$ )
N= 905kN, Myy= 106kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 1.17$ )
N= 782kN, Myy= 112kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 1.50$ )
N= 559kN, Myy= 120kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 2.33$ )
N= 393kN, Myy= 118kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 3.50$ )
N= 190kN, Myy= 113kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 5.25$ )
N= 23kN, Myy= 103kNm, ( $\epsilon_c2/\epsilon_{s1} = -3.50/ 8.17$ )



### 1.3. Carico massimo assiale, e momento flettente massimo Medzz

N= 2164kN, Mzz= 0kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/-3.50$ )
N= 1921kN, Mzz= 26kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/-3.43$ )
N= 1921kN, Mzz= 26kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/-3.36$ )
N= 1921kN, Mzz= 26kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/-3.15$ )
N= 1921kN, Mzz= 26kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/-2.80$ )
N= 1921kN, Mzz= 26kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/-2.33$ )
N= 1404kN, Mzz= 74kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 0.00$ )
N= 1316kN, Mzz= 81kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 0.18$ )
N= 1223kN, Mzz= 87kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 0.39$ )
N= 1124kN, Mzz= 93kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 0.62$ )
N= 1018kN, Mzz= 99kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 0.88$ )
N= 905kN, Mzz= 106kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 1.17$ )
N= 782kN, Mzz= 112kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 1.50$ )
N= 559kN, Mzz= 120kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 2.33$ )
N= 393kN, Mzz= 118kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 3.50$ )
N= 190kN, Mzz= 113kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 5.25$ )
N= 23kN, Mzz= 103kNm, ( $\epsilon_{c2}/\epsilon_{s1}=-3.50/ 8.17$ )

