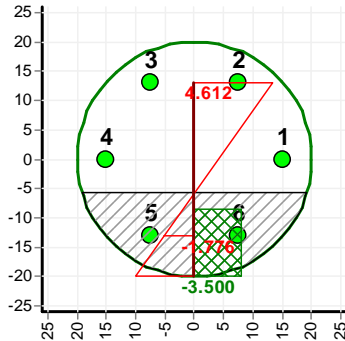


General

Design code: Eurocode 2
Analysis: Design section

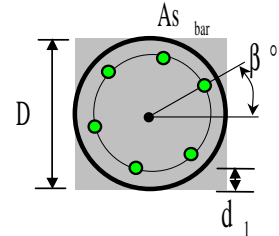
Loads: N, Mx
N>0 is compression !

Section



Data [cm]

D = 40
d1 = 5



Materials

Concrete: C25/30
SSR: Rectangular

Reinforcing steel: S500
SSR: Standard

fck = 25.00 MPa
Ec = 30471.58 MPa
ecu = -3.500 o/oo

fyk = 500.00 MPa
Es = 200000.00 MPa
esu = 10.000 o/oo

Factors

Concrete: gama_c = 1.50
Steel: gama_s = 1.15

Reinforcement

Bars = 6
beta = 0.00 deg

Loads

Load	N [kN]	Mx [kNm]
L1	130	128.5

Solve data

II order moments - Yes Code Eurocode 2
Geometric length: Lo = 400.00 cm
Effective length: kx = 0.70 Lkx = 280.00 cm

II order moments

Load	Mx_II
L1	3.39

Results

Bar	Asi [cm2]	esi [o/oo]	Stress [MPa]
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1	3.80	1.418	283.55
2	3.80	4.612	434.78
3	3.80	4.612	434.78
4	3.80	1.418	283.55
5	3.80	-1.776	-355.28
6	3.80	-1.776	-355.28

Concrete strain: $ec_{min} = -3.500$ o/oo
Compressive zone depth: $x = 14.23$ cm

Total reinf. area: $As_{tot} = 22.78$ cm²
Reinf. ratio: 1.82 %

Section properties

Reinforcement :

$As_{tot} = 22.78$ cm²

Concrete section:

$A_c = 1254.34$ cm²
 $I_{c,x} = 125205.11$ cm⁴
 $I_{c,y} = 125205.11$ cm⁴

R/C section:

$A_{red} = 1381.08$ cm²
 $I_{red,x} = 139462.83$ cm⁴
 $I_{red,y} = 139462.83$ cm⁴
 $r_x = 10.05$ cm
 $r_y = 10.05$ cm