

<b>Atotal</b>	458350
<b>Ycg</b>	800.3248973
<b>Ixx</b>	1.35611E+11
<b>c1</b>	599.6751027
<b>c2</b>	800.3248973
<b>S1</b>	226141608.4
<b>S2</b>	169445549.8
<b>r</b>	543.9382875

Datos :=

	1	2
1	"Atotal"	$4.583 \cdot 10^5$
2	"Ycg"	800.325
3	"Ixx"	$1.356 \cdot 10^{11}$
4	"c1"	599.675
5	"c2"	800.325
6	"S1"	$2.261 \cdot 10^8$
7	"S2"	$1.694 \cdot 10^8$
8	"r"	543.938

$$P_i := 160 \text{ kN}$$

$$P_e := 128 \text{ kN}$$

$$R := \frac{P_e}{P_i}$$

$$R = 0.8$$

$$e := 200 \text{ mm}$$

$$I_c := \text{Datos}_{3,2} \text{ mm}^4$$

$$A_c := \text{Datos}_{1,2} \text{ mm}^2$$

$$c_1 := \text{Datos}_{4,2} \text{ mm}$$

$$c_2 := \text{Datos}_{5,2} \text{ mm}$$

$$I_2 := I_c$$

$$I_1 := I_c$$

$$q_l := 14 \frac{\text{kN}}{\text{m}}$$

$$q_d := 3 \frac{\text{kN}}{\text{m}}$$

$$L := 35 \text{ m}$$

$$M_o := 24 \frac{\text{kN}}{\text{m}^3} \cdot L^2 \cdot \frac{A_c}{8}$$

$$M_o = 1684.436 \text{ kN} \cdot \text{m}$$

$$M_l := q_l \cdot \frac{L^2}{8}$$

$$M_l = 2143.75 \text{ kN} \cdot \text{m}$$

$$M_d := q_d \cdot \frac{L^2}{8}$$

$$M_d = 459.375 \text{ kN} \cdot \text{m}$$

## Efecto del pretensado

$$f1 := \frac{-P_i}{A_c} + P_i \cdot e \cdot \frac{c1}{I1}$$

$$f1 = -2075.734 \frac{\text{kN}}{\text{m}^2}$$

$$f2 := \frac{-P_i}{A_c} - P_i \cdot e \cdot \frac{c2}{I2}$$

$$f2 = -5379.301 \frac{\text{kN}}{\text{m}^2}$$

## Efecto del peso propio

$$f11 := f1 - M_o \cdot \frac{c1}{I_c}$$

$$f11 = -9524.352 \frac{\text{kN}}{\text{m}^2}$$

$$f22 := f2 + M_o \cdot \frac{c2}{I_c}$$

$$f22 = 4561.605 \frac{\text{kN}}{\text{m}^2}$$

## Efecto Sobre carga

$$f111 := f1 \cdot R - \frac{c1}{I_c} \cdot (M_o + M_l + M_d)$$

$$f111 = -20620.287 \frac{\text{kN}}{\text{m}^2}$$

$$f222 := f2 \cdot R + \frac{c2}{I_c} \cdot (M_o + M_l + M_d)$$

$$f222 = 21000.126 \frac{\text{kN}}{\text{m}^2}$$