Cargas estructura

Plantas tipo

Cargas permanentes (G):
- Forjado: Placas alveolares- trumes C-30 — 3.5 KN/m²
- Pavimento: Sist. de suelo téc. con pavimento de WPC — 0.5 KN/m²

4.0 KN/m²

Cargas variables (Q):
- CTE-SE-AE. Tabla 3.1.: Zonas administrativas (B) — 2.0 KN/m²

6.0 KN/m²

Planta cubierta

Cargas permanentes (G 1):
- Forjado: Placas alveolares- trumes C-30 — 3.5 KN/m²
- Sustrato vegetal — 2.0 KN/m²

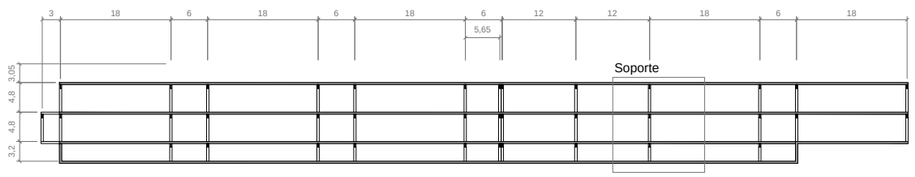
5.5 KN/m²

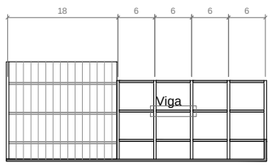
- Sobrecarga de instalaciones: — 1.0 KN/m²

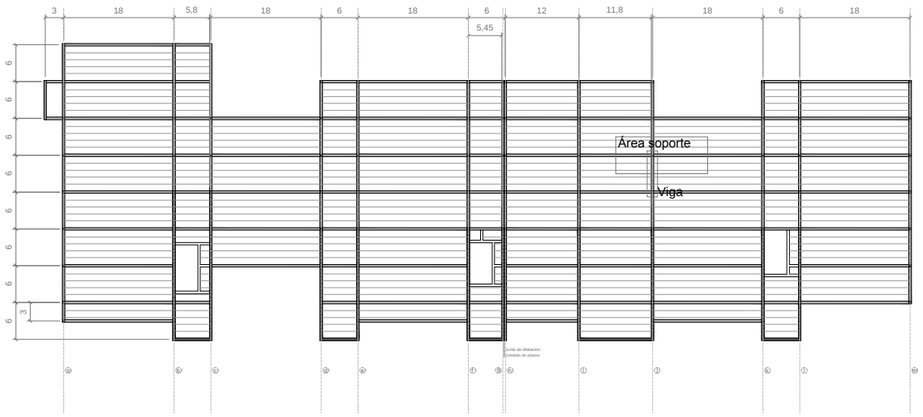
Cargas variables (Q 1):
- CTE-SE-AE. Tabla 3.1.: Cubiertas accesibles para conservación (G 1) — 1.0 KN/m²
- Sobrecarga de nieve: CTE-SE-AE, Tabla 3.8, Valencia. — 0.2 KN/m²

1.2 KN/m²

7.7 KN/m²







Cálculo soportes

Nsd < Nrd Nrd = ((Fy/ymo)A/ω)(1/1000)

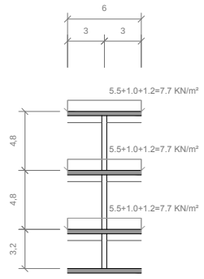
HEB 300 A=300 X 50 =15000 mm² i=300 x 0.25 =75 mm
λ = βL/i = 1 x 4250 / 75 = 56.67 **ω** = 1.17

Nrd (HEB 300) = ((260 X 15 000) / 1.17) (1/1 000) = 3 333,33 KN

Planta cubierta: Nsd = (15m x 6m x 7.7 KN/m²) x 1.5 = 1039.5 KN
Planta tipo x2: Nsd = (15m x 6m x 6KN/m²) x 1.5 = 810 KN x 2 ud. = 1 620 KN

Nsd total: Nsd total = 1 039 + 1 620 = 2 659.5 KN

2 659.5 KN < 3 333 KN **Admisible**



Cálculo vigas

Msd = Y Q L² / 8 Wnec: Msd / (fy / y) x 10^6 Inec = 5 Q L^4 x 10^9 / (384 E L / 400)

IPE O 550+ Wely = 2 847 x 10^3 mm3
Iy = 79 160 x 10^4 mm4

Msd = 1.5 x (15m x 6KN/m²) x 5.6² / 8 = 529.2 KNm

Wnec: (529.2 / 260) x 10^6 = 2 035.38 x 10^3

Inec = 5 x 90 x 5.6^4 x 10^9 / (384 x 210 000 x 5.6 / 400) = 39 200 x 1O^4 mm^4

Wely = 2 847 x 10^3 mm3 > 2 035.38 x 10^3 mm3
Iy = 79 160 x 10^4 mm4 > 39 200 x 10^4 mm4
Admisible