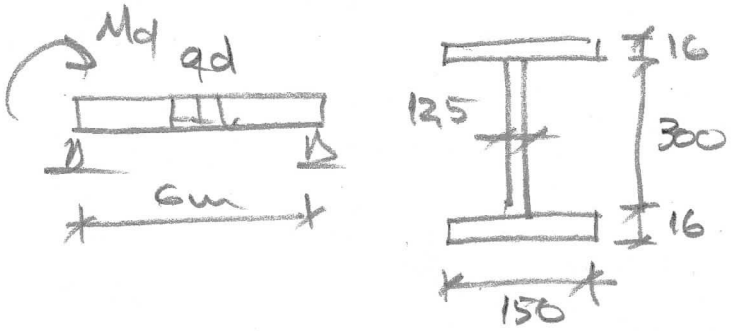
B2 T5 NB0522 — 95 PONTOS

- AÇO AR350
- VIGA DE PISO CONTIDA LATERALMENTE
- CARGAS PERMANENTES MAJORADAS COM $\gamma_g = 1,4$;
- PERFIL SOLDADO;



PEDE-SE O MÁXIMO Md PARA AS VERIFICAÇÕES DE

Q01) MOMENTOS; Q02) CORTANTES;

MOMENTO RESISTENTE:

FLA: $\lambda_{FLA} = 300/12,5 = 24$

$\lambda_{PFLA} = 3,76\sqrt{\frac{20000}{35}} = 89,88$

} ALMA COMPACTA P/ FLEXÃO

FLM: $\lambda_{FLM} = 95 \times 150/16 = 4,6875$

$\lambda_{PFLM} = 9,38\sqrt{\frac{20000}{35}} = 9,0837$

} MESA COMPACTA

$Z_x = 1039,65\ cm^3$

$M_{Rd} = 1039,65 \times 35/1,1 = 33080\ kN.cm = \underline{330,8\ kN.m}$

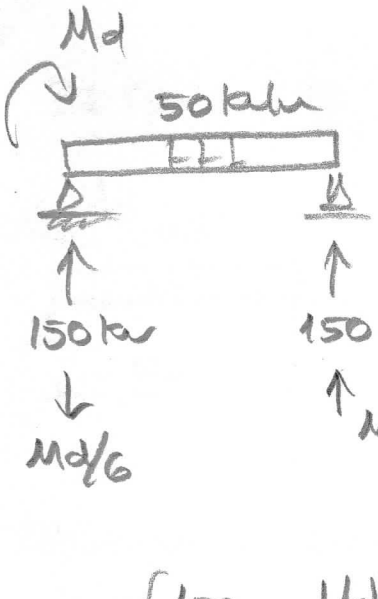
CORTANTE RESISTENTE!

$\lambda_{CIS} = \lambda_{FLA} = 24$ $\lambda_{PCIS} = 1,10\sqrt{\frac{5 \times 20000}{35}} = 58,797$

ALMA COMPACTA P/ CISALHAMENTO

$$V_{Rd} = \frac{0,6 \times (2 \times 1,6cm + 30cm) \times 1,25cm \times 35\ kN/cm^2}{1,1}$$

$V_{Rd} = \underline{792,27\ kN}$



$$V_{sd\,máx} = 150\,kN + Md/6$$

$$M(x) = Md + \left(150 - Md/6\right)x - 50\frac{x^2}{2}$$

$$\frac{dM(x)}{dx} = 150 - Md/6 - 50x = 0$$

$$x = \left(150 - Md/6\right)/50 = 3 - \frac{Md}{300}$$

$$M^{máx}_{sd} = Md + \left(150 - Md/6\right)\left(3 - \frac{Md}{300}\right) - 25\left(3 - \frac{Md}{300}\right)^2$$

IGUALANDO $M_{sd\,máx} = M_{Rd}$:

↳ HP: $Md' = -1991,7$

$Md'' = 191,27\,kN.m$ // (Q01)

IGUALANDO $V_{sd\,máx} = V_{Rd}$:

↳ HP: $Vd = 385,6\,kN$ // (Q02)