

2/12/20
McCreo Deck

1/2

McCreo deck - 10 View Point Rd McCreo

Loading (plan)

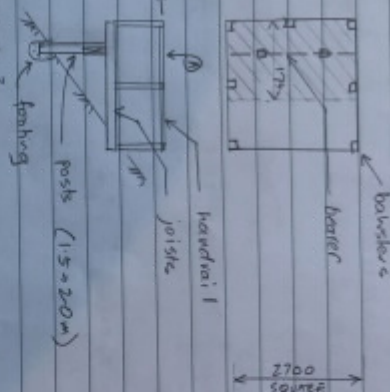
working stress design
(deck loads)

LL:

4 kPa or 1.8 kN point (C)

handrail loads:

(A) 0.9 kN point

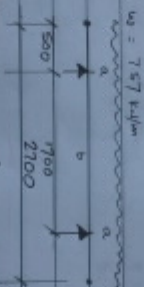
(B) 0.6 kN point
or 0.35 kN/m line load

WL: Negligible

DL:

use timber decking @ 800 kg/m³

beamer



$$M_a = (7.57 \times 0.5) / 0.25 = 0.95 \text{ kNm}$$

$$M_b = 7.57 \times 1.7 = 2.74 \text{ kNm}$$

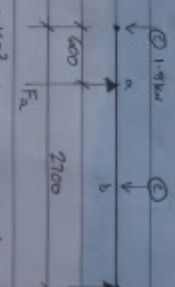
WL: 4.0 kPa

WDL = 0.35 kPa (joists + decking)

$$Z = 0.048 \times \frac{0.19^3}{6} = 2.71 \times 10^{-4} \quad S = \frac{M}{Z} = \frac{2.74 \times 10^3}{2.71 \times 10^{-4}} = 10.1 \text{ MPa}$$

joists

@ 850 kPa max



$$M_a = 1.8 \times 0.6 = 1.08 \text{ kNm}$$

$$M_b = 0.9 \times 1.05 = 0.95 \text{ kNm}$$

$$(4500) M_b = 1.4 \times 2.2^2 / 8 = 0.85 \text{ kNm}$$

be

joists

@ 850 kPa max

$$Z = 0.038 \times \frac{0.165^3}{6} = 1.72 \times 10^{-4}$$

$$S_a = \frac{M}{Z} = \frac{1.08 \times 10^3}{1.72 \times 10^{-4}} = 6.28 \text{ MPa}$$

$$F_a (kPa) = \frac{(1.4 \times 4.0 \times 2.7)^{1.35}}{2.10} = 2.43 \text{ kPa}$$

(moment about = 1.74 kNm)