

$$4-) H = 4 \text{ m}$$

$$\text{comporta: } 4 \times 2 \text{ (m)}$$

$$\rho_g = 100 \frac{\text{kg}}{\text{m}^3} \quad \rho_{H_2O} = 1000 \frac{\text{kg}}{\text{m}^3}$$

$$h = ?$$

$$F = P \cdot A = \rho_g \cdot h \cdot A = 100 \cdot 9,81 \cdot 2 \cdot 4 \cdot 2 = 109872 \text{ N}$$

$$y_p = \bar{y} + \frac{I_{xx}}{A \bar{y}} = 2 + \frac{\frac{bL^3}{12}}{2 \cdot 4 \cdot 2} = 2 + \frac{2 \cdot 4^3}{12 \cdot 16} = 2,66 \text{ ou } \frac{8}{3}$$

$$m = \frac{109872 \cdot 8}{3} = 292992$$

$$M = F \cdot y_p = \rho_g \frac{b \cdot A \cdot 2}{2} \cdot \left( \frac{L + \frac{2 \cdot A^3}{12}}{2} \right) = 1000 \cdot 9,81 \frac{A^2}{2} \cdot \left( \frac{L + \frac{A^3}{6}}{2} \right)$$

$$M = 1000 \cdot 9,81 \frac{A^2}{2} \left( \frac{L + \frac{A}{6}}{2} \right) \quad m = 9810 \frac{A^2}{6} \left( \frac{4A}{2} \right) = \frac{9810 \cdot 2}{3} A^3$$

$$A = \sqrt[3]{\frac{3m}{9810 \cdot 2}} = 3,55 \text{ m}$$