Eigen gewicht

Door SCIA Engineer gegenereerd.

$\rho_{beton} := 25\frac{kN}{m^3}$

Grond en Water

+1.63m NAP

$\rho_{zanddroog} := 18\frac{kN}{m^3}$ $\rho_{zandnat} := 20\frac{kN}{m^3}$ $\rho_{water} := 10\frac{kN}{m^3}$ $k_a := 0.33$

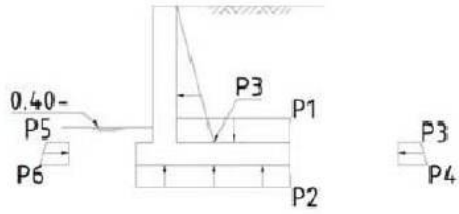
$h_{water} := 0.40m$ -NAP

$h_{vloer} := 0.60m$ -NAP

$h_{onder} := 0.90m$ -NAP

$h_{top} := 2.0m$ NAP

$d_{vloer} := 0.18m$



$P1 := \rho_{zanddroog}\cdot(h_{water} + h_{top}) + \rho_{zandnat}\cdot(h_{vloer} - h_{water}) = 47.2\cdot\frac{kN}{m^2}$

$P2 := \rho_{water}\cdot(h_{onder} - h_{water}) = 5\cdot\frac{kN}{m^2}$

$P3 := \begin{bmatrix} \rho_{zanddroog}\cdot(h_{water} + h_{top}) \cdots \\ +\rho_{zandnat}\cdot(h_{vloer} - h_{water}) \cdots \\ +-\rho_{water}\cdot(h_{vloer} - h_{water}) \end{bmatrix}\cdot k_a + \rho_{water}\cdot\begin{pmatrix} h_{vloer} \cdots \\ +-h_{water} \end{pmatrix} = 16.92\cdot\frac{kN}{m^2}$

$P4 := \begin{bmatrix} \rho_{zanddroog}\cdot(h_{water} + h_{top}) \cdots \\ +\rho_{zandnat}\cdot(h_{onder} - h_{water}) \cdots \\ +-\rho_{water}\cdot(h_{onder} - h_{water}) \end{bmatrix}\cdot k_a + \rho_{water}\cdot\begin{pmatrix} h_{onder} \cdots \\ +-h_{water} \end{pmatrix} = 20.91\cdot\frac{kN}{m^2}$

$P_{hor1} := 0.5\cdot(P3 + P4)\cdot d_{vloer} = 3.4\cdot\frac{kN}{m}$

$P5 := \rho_{water}\cdot(h_{vloer} - h_{water}) = 2\cdot\frac{kN}{m^2}$

$P6 := \rho_{water}\cdot(h_{onder} - h_{water}) = 5\cdot\frac{kN}{m^2}$

$$P_{hor2} := 0.5 \cdot (P5 + P6) \cdot d_{vloer} = 0.63 \cdot \frac{kN}{m}$$

Metselwerk

$$\rho_{metselwerk} := 20 \frac{kN}{m^3} \qquad d_{metselsteen} := 0.22m$$

$$P_{metsel} := \rho_{metselwerk} \cdot \left(h_{top} + h_{vloer}\right) \cdot d_{metselsteen} = 11.44 \cdot \frac{kN}{m}$$