Massetetthet $\rho = \frac{m}{V}$ $\left[\frac{kg}{m^3}\right]$

Det finnes tabell over massetetthet (s10)

Eks: Vann $\rho = 1000 \frac{kg}{m^3}$

$= 1{,}0 \cdot 10^3 \frac{kg}{m^3}$

"Benevnelse"

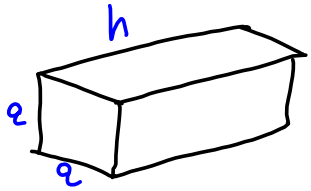
$10\ dm = 1\ m$

$10^3\ dm^3 = m^3$

$\rho_v = 1{,}0 \cdot 10^3 \frac{kg}{m^3}$

$= 1{,}0 \cdot 10^3 \frac{kg}{10^3\ dm^3} = 1{,}0 \frac{kg}{dm^3}$

6.03



$V = a^2 \cdot h$

$V_{max} = a_{max}^2 \cdot h_{max}$

$V_{min} = a_{min}^2 \cdot h_{min}$

$a = 11,4 \pm 0,2$ mm → 11,6 / 11,2

$h = 63,7 \pm 0,3$ mm → 64,0 / 63,4

$m = 65,85 \pm 0,05$ g → 65,90 / 65,80

$\rho_{max} = \frac{m_{max}}{V_{min}} = \frac{65,90}{11,2^2 \cdot 63,4} \left[\frac{g}{mm^3}\right] = 8286 \left[\frac{kg}{m^3}\right]$

$\rho_{min} = \frac{m_{min}}{V_{max}} = \frac{65,80}{11,6^2 \cdot 64,0} \left[\frac{g}{mm^3}\right] = 7640 \left[\frac{kg}{m^3}\right]$

$\rho_G = \frac{m}{V} = \frac{65,85}{11,4^2 \cdot 63,7}$ -11- $= 7954 \left[\frac{kg}{m^3}\right] \Rightarrow 8,0 \cdot 10^3$

Finner avvik

$\rho_G - \rho_{max} = 7954 - 8286 = -332$

$\rho_G - \rho_{min} = 7954 - 7640 = 314$

$\rho = (8,0 \pm 0,3) \cdot 10^3 \frac{kg}{m^3}$

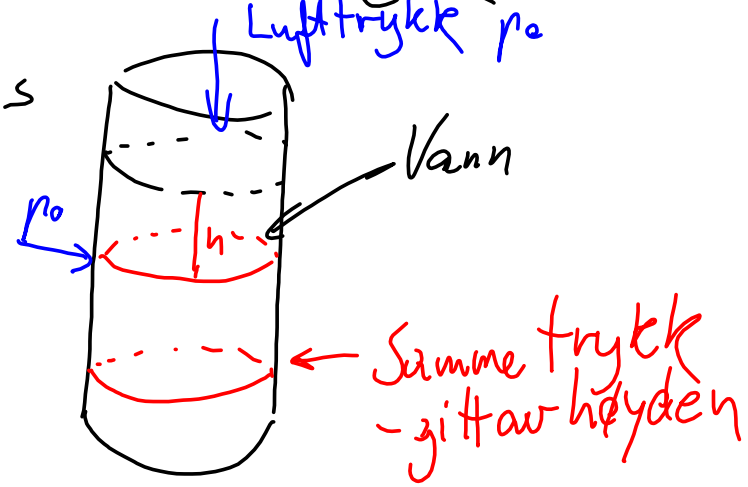
Trykk

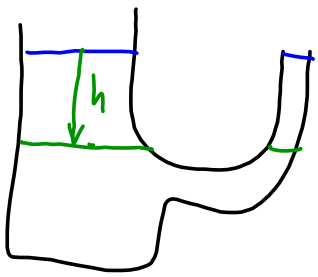
$p = \frac{F}{A}$ $\left[\frac{N}{m^2}\right] \rightarrow [Pa]$

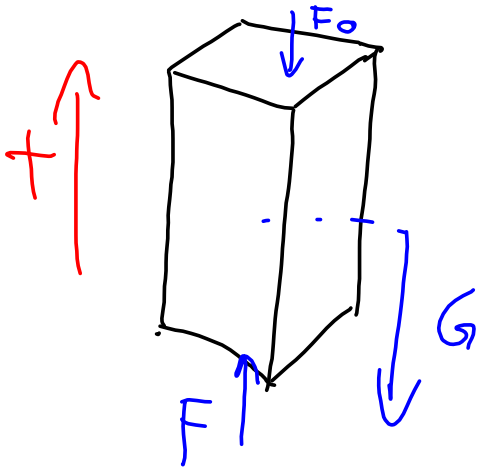
Symbol — Benevnelse — Pascal

Hydrostatisk trykk

Eks







$$\sum F = 0$$

$$F - F_0 - G = 0$$

$$G = m \cdot g$$

$$p = \frac{F}{A}$$

$$F = p \cdot A$$

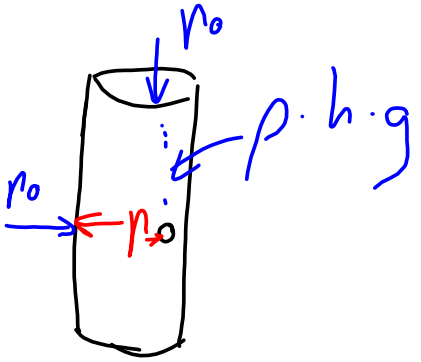
$$\rho = \frac{m}{V}$$

$$m = \rho \cdot V = \rho \cdot h \cdot A$$

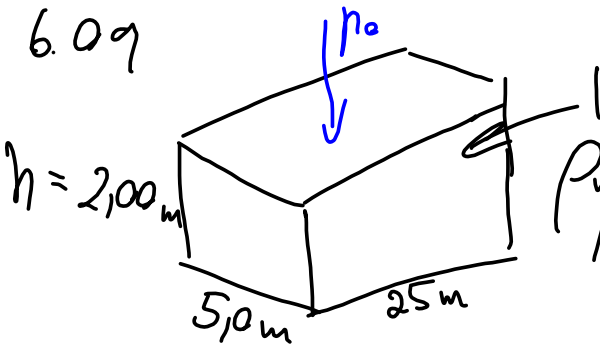
$$F = F_0 + G$$

$$p \cdot A = p_0 \cdot A + mg = p_0 \cdot A + \rho \cdot h \cdot A \cdot g$$

$$p = p_0 + \rho \cdot h \cdot g$$



6.09



$p_0 = 100 \cdot 10^3\ kPa$ → Lufttrykk

$\rho_v = 1{,}0 \cdot 10^3\ \frac{kg}{m^3}$

a) $p = p_0 + \rho_v \cdot g \cdot h = 101 \cdot 10^3\,[Pa] + 1000 \cdot 9{,}81 \cdot 2{,}00\left[\frac{kg}{m^3} \cdot \frac{m}{s^2} \cdot m\right]$