

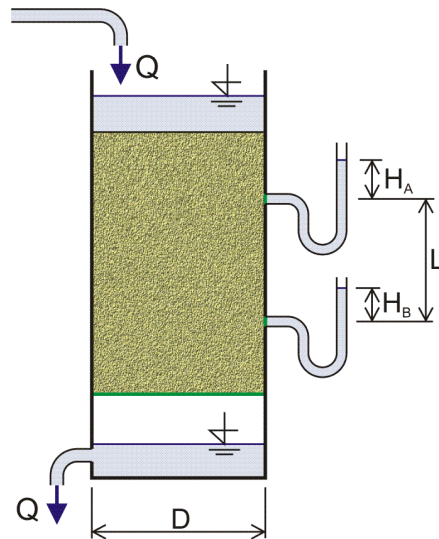
12th exercise

Ground water flow

12.1.

Determine filtration coefficient k [$\text{m}\cdot\text{day}^{-1}$] of the pattern of soil located in Darcy's filtration unit.

Filtration conditions: $Q = 1,25 \cdot 10^{-4} \text{ m}^3\text{s}^{-1}$, $H_A = 0,6\text{ m}$, $H_B = 0,15 \text{ m}$, $L = 1,2 \text{ m}$, $D = 400 \text{ mm}$.



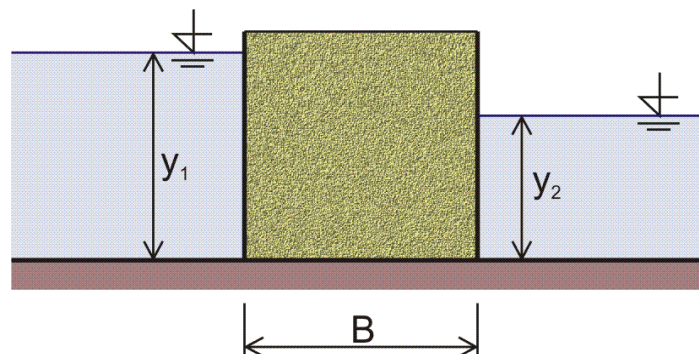
(Result. $k = 62,5 \text{ m}\cdot\text{day}^{-1}$)

12.2.

To protect building site against flooding a coffer has been designed. This coffer will be made from piles, space between pile walls will be fulfilled by soil. Filtration coefficient of this soil is $k = 5,5 \cdot 10^{-4} \text{ m}\cdot\text{s}^{-1}$. Depth of water in the river is $y_1 = 5 \text{ m}$, depth of water in the foundation pit can be $y_2 = 3 \text{ m}$.

Determine necessary thickness of foundation pit B in such a way that specific discharge q into building site is not larger than $1 \cdot 10^{-3} \text{ m}^2\cdot\text{s}^{-1}$.

Do not take into consideration any staunching ability of pile walls.



(Result: $B = 4,4 \text{ m}$)