

The permeable concrete: a low energy consumption solution for deep draining trenches

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Abstract

The reduction of pore water pressures is one of the very effective measures to improve the stability conditions of marginally stable water-bearing slopes or to stabilise landslides. For this purpose the trench drains have been used long since. Like filling material of deep trenches the permeable concrete can be effectively employed. It presents relatively high hydraulic conductivity, fil-tering capacity in order to prevent the internal erosion of the soil in which the trench drain is installed, enough residual hydraulic conductivity after possible clogging, sufficient shear strength after a short curing time to avoid the insta-bilisation of adjacent previously built panels or piles. Results of a laboratory experimental research on the mix-design, hydraulic conductivity and strength of pervious concrete are reported in the paper, proving that proper mix-design can be devised meeting the above requirements. Permeable concrete is a very poor material and a low energy consumption solution for slope stabilisation.