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LABORATORY INVESTIGATION OF THE HYDRAULIC PERFORMANCE ON A GEOFILM WITH VARIOUS SIZED FLAWS

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Abstract

Leakage through flaws in geofilm was examined with laboratory tests by flexible wall permeameter. Samples cracks were cut open by the sharp blade, with the results that the widths of the flaws were the same while the lengths were different. During the research, a series of laboratory permeameter tests have been performed to determine the influence of the various factors on the leakage rate of water through the flaw at the center of geofilm. The impact of various parameters examined included the following conditions (i) the influence of the confining stress on the geofilm; (ii) the hydraulic pressure applied on top of the geofilm and (iii) the length of flaw. The results indicate that the flaw size, influenced by the confining stress and the hydraulic pressure, affects the flow rate in various conditions. In addition, the flow rate decreases with the increase in confining stress. The results also show that the flow rate increases when the hydraulic pressure increases along with the length of flaw in the geofilm.

Key words: confining stress, flow rate, geofilm flaws, hydraulic pressure

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