

SEEPAGE CHARACTERISTICS OF SANDSTONE, SILTSTONE,
AND MUDSTONE

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ABSTRACT

Seepage characteristic of rocks is important to be determined since it is a significant factor to the potential degradation of rock man. This report discusses the study on sandstone, siltstone and mudstone and their permeability characteristics and basic physical properties. Sandstone, siltstone and mudstone are three types of sedimentary rocks which have an obvious different in textural and grain size. In order to achieve the objectivities of this study, a committed effort on the laboratory works is done from samples preparation to the testing of the samples. The tests consist of physical properties test which include water content, density and porosity, and also permeability constant pressure test. From the laboratory test, it is concluded that mudstone samples have the highest average value of physical properties among the rocks. In permeability, sandstone samples show the highest average value compare to siltstone and mudstone with intrinsic permeability of $9.906 \times 10^{-17} \text{ m}^2$, $4.322 \times 10^{-17} \text{ m}^2$ and $6.910 \times 10^{-17} \text{ m}^2$, respectively. Petrography test carried out confirm this values where it is shown that sandstones contain more quartz grain rather than matrix composition. The relationship of permeability and porosity of the rocks is also discussed. This study is one of its own and with the achievements, it is hoped to be useful to the geologist and researchers to understand the characteristics of rocks in Malaysia.

Keywords: *Permeability, Petrography, Sandstone, Siltstone & Mudstone.*