Seminar Geosains Kebangsaan 2007 (NGC 07)
Universiti Malaysia Sabah, Kota Kinabalu, Sabah
7 – 9 June 2007

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THE EFFECT OF MOISTURE CONTENT ON STRENGTH PROPERTIES OF WEAK ROCK

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ABSTRACT

Variation of moisture content is one of the greatest issue in the tropical climate as extreme temperature and heavy downpour can be expected. This study was undertaken as a part of the excavatability studies on weak rock to look at the effect of moisture content on strength properties. Although the changes in the rock strength have been discussed by previous researchers, the effect of moisture content on weathered rock materials are not fully understood. This study was undertaken by using 127 samples of weathered sandstone from various weathering grades collected from four (4) different sites, namely Bukit Indah, Kempas, Desa Tebrau and Mersing, Johor. Standard rock mechanics testing procedures cannot be applied in this study because the samples were easily broken during preparation, hence a modified penetration test was proposed for determining the strength. The result shows that moisture content is an important factor that affects the strength of the weak rock materials.