

## **Preliminary Results of Engineering Geological Weathering Characterization of Interbedded Heterogeneous Siliclastic Sedimentary Rocks in Temerloh, Pahang, Malaysia**

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The study of rock weathering is vital to all aspects of geotechnical engineering. Engineering properties of a rock mass can be highly influenced by the degree of weathering. Durability of rock material is one of the properties that controls the degree of weathering and this is the rationale for incorporating slake durability in the testing methodology. In this research, the interest is in interbedded sedimentary rock mass which composed of alternation of strong and weak layers, producing different weathering profiles. Thus, the standard weathering classification (IAEG 1981, ISRM 2007) may not be truly applicable to heterogeneous rock mass because it does not take lithological variation into consideration. Durability and weathering characteristics together with long-term behavior are investigated and a number of testing methodologies are being developed. 3-cycle-wetting-drying (slake durability) test that can simulate

the natural condition is combined with a crystallization test to distinct hard rocks from weak rocks and further categorized the weak rocks. The study locations are mainly comprised of interbedded sandstone, siltstone and mudstone layers of the Semantan Formation with varied bedding thickness. Preliminary field observation showed that the rock masses are ranging from Type III to Type XI based on the Geological Strength Index (GSI). Point Load Index test results for two shale samples showed different strength value even though the samples are visually similar. Further laboratory tests and field investigations need to be done to study the degree of weathering and engineering geological characterization of the rock material. The final aim of this study is to enable user to adopt the innovative and practical testing method to characterize the weathering state and have a better understanding of the ground condition for any future construction works.