

**STRENGTH-MINERALOGY  
INTERACTION ON WEATHERED  
MUDROCK OF SEMANGGOL  
FORMATION**

**MOHAMAD HISAM BIN KAMARUDDIN**

**Bachelor of Engineering (Hons) Civil  
(Infrastructure)  
UNIVERSITI TEKNOLOGI MARA  
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## **DECLARATION BY THE CANDIDATE**

I declare that the work in this thesis was carried out in accordance with the regulation of University Technology MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree and qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulation for Under Graduate, Universiti Technology MARA, regulating the conduct of my study and research.

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## **ABSTRACT**

In civil engineering, a comprehensive study of rocks and its properties is crucial to investigate and characterize the behaviour of rock when undergoes multiple loading and stress. Mudrocks from Bukit Katil Kedah, a part of Semanggol formation were characterized for physical, mechanical and mineral properties. The analysis involved the influenced of weathering degree and mineral composition. Six samples were collected and studied. The result show the degree of weathering influenced the physical and mechanical properties of mudrock. The sample with low porosity and high density possessed highest uniaxial compressive strength and slake durability index of 11.03 MPa and 91.43% respectively. X-Ray diffraction revealed two of the sample tested were consists of goethite and quartz. The sample presence with goethite is higher in strength and durability compare to sample consists of quartz only due to the cementation effect and denser minerals.

**Keywords:** *Goethite, Quartz, Mudrock, UCS, Slake Durability, Weathering.*

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