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### **P2A-3**

## **SHEAR STRENGTH ALONG FOLIATION PLANES IN META-RHYOLITIC TUFF FROM THE DINDING SCHIST, KUALA LUMPUR**

**J. I. Nkpadobi & J. K. Raj**

Department of Geology,  
 University of Malaya, 50603 Kuala Lumpur

### **ABSTRACT**

Meta-rhyolitic tuff from the Lower Palaeozoic Dinding Schist shows a distinct foliation with quartz and microcline porphyroblasts set in an aligned fine grained matrix of quartz, sericite, muscovite and biotite. Laboratory tests using the saturation and buoyancy method indicates that unweathered meta-rhyolitic tuff has an apparent porosity of 2.5 % with average dry, and saturated, unit weights of 25.82 and 26.08, kN/m<sup>3</sup>, and dry, and saturated, densities of 2,636 and 2,661, kg/m<sup>3</sup>, respectively. A similar method of test

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shows slightly weathered meta-rhyolitic tuff to have an apparent porosity of 8.2 % with average dry, and saturated, unit weights of 23.99 and 24.78, kN/m<sup>3</sup> and dry, and saturated, densities of 2,447 and 2,529, kg/m<sup>3</sup>, respectively. Tilt tests on diamond sawn surfaces (parallel to foliation) of the unweathered meta-rhyolitic tuff yield a basic friction angle of 31°, whilst similar tests on lightly, and highly, polished, diamond sawn surfaces yield basic friction angles of 26° and 24°, respectively. Tilt tests on diamond sawn surfaces (parallel to foliation) of slightly weathered meta-rhyolitic tuff yield a basic friction angle of 23°. Polishing of diamond sawn surfaces thus mimics effects of weathering with a reduction in the basic friction angle. It is concluded that a basic friction angle of 31° can be used as a estimate of the minimum residual friction angle along foliation planes in unweathered meta-rhyolitic tuff, though a lower value of 23° to 24° would have to be used for slightly weathered tuff.