

Point load strength anisotropy index of schist at selected sites in Peninsular Malaysia

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Abstract: The concept of anisotropy can be regarded as the directional dependency of a determined parameter of rock material. Anisotropy occurs at all scales, and it can be observed from the material's mechanical strength, permeability and seismic properties, and it plays a significant role in rock mass classification. In the study of rock mechanics, the anisotropy of schist has become perhaps one of the widely studied area, focusing mostly on the behavior of schist under compression pressures. This type of foliated rock is a significant contributors to the complex behavior of geomaterials, due to its influence in the response of geotechnical structures such as tunnel structures, excavations and slope stability. This paper presents the point load strength anisotropy index study of

schist which was investigated through the point load index strength (PLS) test. Schist samples were collected from seven localities; km 18 – 19, km 21 – 22, km 22 – 23, km 23 – 24, km 25 – 26 along the Pos Selim Road – Kampung Raja, Cameron Highlands; Kuala Kubu Bharu Road – Bukit Fraser (km 15); and Ukay Perdana, Ulu Klang. The result shows that the point load strength anisotropy index of schist to be 3.7. From the classification of degree of anisotropy, it can be concluded that schist is a highly anisotropic rock, which has a PLS strength that varies depending upon the orientation of the foliation to the applied load.

Keywords: Point load index strength (PLS), anisotropy, schist