

Sample type of tilt testing and basic friction angle value for the Crocker Formation's Fine Sandstone of Sabah, Malaysia

ABSTRACT

The basic friction angle is an essential input in estimating the shear strength of joints in stability analysis of rock slopes, underground excavations and assessment of factors of safety in rock engineering design. Basic friction angle value is also simply derived from tilt tests with particular samples types and arrangement. But, for the Crocker formation fine sandstone, the value of basic friction angle is never been reported by this testing. Then, the proposed tilt testing approach from literature was conducted to prove and estimate the most suitable samples and arrangement of tilt testing and friction angle value for engineering structures and design in Crocker formation fine sandstone. Results from this study shows that square base slabs with 50mm x 50mm x 20mm dimensions is the most suitable samples and arrangement of tilt testing and basic friction angle, ϕ_b value for the Crocker Formation fine sandstone is 24°.