

Chagan Kantachompoo, Flying Officer 2010: Strength Assessment by Dynamic Cone Penetrometer for Laboratory Compacted Weathered Rock Stabilized with Portland Cement. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Piphat Sornwong, M.Eng. 173 pages.

The purpose of this research was to determine the relationships between Unsoaked CBR, Dynamic Cone Penetrometer Penetration Index (DPI) and Unconfined Compressive Strength (UCS), and to determine the physical properties of the weathered rock 2 place . Portland Cement of 2, 4, 6, 8 and 10 percent by weight was used as stabilized materials for both batches. Cement stabilized samples were prepared at the optimum moisture content and wet of optimum moisture content, using the compaction energy of 277.50 ton/m³. A piston having a cross-sectional area of 1 in² was used in the CBR test. Specimens were cured for 2 and 3 days. Results from these studies were used to develop the relationships among unsoaked CBR, DPI and UCS, and to develop guideline and specification highway construction control.

$$\text{Unsoaked CBR} = 259.3\text{DPI}^{-0.86}$$

$$\text{Unsoaked CBR} = 12.02\text{UCS}$$

$$\text{UCS (ksc)} = 21.57\text{DPI}^{-0.86}$$

Student's signature

Thesis Advisor's signature