

Arwut Proudum 2010: Strength Assessment by Dynamic Cone Penetrometer for Laboratory Compacted Reclaimed Asphalt Pavement Stabilized with Cement. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Piphat Sornwong, M.Eng. 98 pages.

This study aims to determine the relationships among unsoaked CBR, DCP Penetration Index (DPI) and Unconfined Compressive Strength (UCS), and to determine the physical properties of the old pavement materials. The reclaimed asphalt pavement samples were collected from the highway number 2034 (Naphralan – Bankua Saraburi). Two batches of samples were prepared for laboratory tests. The first batch was a mixture of the reclaimed asphalt pavement and granular rock at 1:1 ratio by volume. The second batch was a mixture of the reclaimed asphalt pavement and crushed rock 1:1 ratio by volume. 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, 3 and 4 days.

$$\text{Unsoaked CBR} = 246.7\text{DPI}^{-1.56}$$

$$\text{Unsoaked CBR} = 16.44\text{UCS}$$

$$\text{UCS} = 15\text{DPI}^{-1.56}$$

Results from these studies were used to develop the relationships among Unsoaked CBR, DPI and UCS, and to develop guideline and specification during highway construction control.

Student's signature

Thesis Advisor's signature