Wiset Jangjit 2009: Improvement of Lateritic Soil by Bottom ash. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Prateep Duangdeun, M.Eng. 74 pages.

The main object of this research is to evaluate the performance of lateritic soil improved by bottom ash for highway construction material. This research emphasizes on the effects of grain size distribution of the lateritic soil, the amount of the bottom ash and curing times on engineering properties of the improved lateritic soil. Two sets of lateritic soil specimens with different gradations, including B gradation and D gradation, were prepared by conforming to the Subbase Standard Specification of the Highway Department of Thailand. The bottom ash obtained from BLCP power plant was mixed with the lateritic soil at various proportions, including 5, 10, 15, and 20 percents of dry weight for B gradation lateritic soils, and 10, 20, 25, and 30 percents of dry unit weight for D gradation lateritic soil.

According to the research results, the plasticity index and maximum dry density of the improved lateritic soils with B and D gradation tend to decrease due to increase of the percent of bottom ash in the specimens. However, an increase in bottom ash of the improved lateritic soils were increased the optimum water content. The test results also indicate that the improved lateritic soils, both with B gradation and 0-10 percents of the bottom ash and with D gradation and 25 percents of the bottom ash, give the maximum CBR. values. The comparison of the improved lateritic soils with the same proportion of the bottom ash shows that curing time increased, the CBR. values of the improved lateritic soils increased. The coefficient of permeability of the improved lateritic soils for immediately tests was decrease about 2-10 times for 0 days curing time. However at 28 day of curing time, the values were increased about 2-10 times

Bottom ash can be used to stabilize the lateritic soil if it was mixed with the appropriate portion.

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