SOILS FROM THREE DIFFERENT QUARRY SITES AS APPLIED TO ROAD WORKS BASED ON THE REQUIREMENTS SET BY DPWH

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Abstract

This comparative research aims to determine the suitable soil for backfill material used in road works. The research aims to show criteria for sub-grade materials, if the said soil samples, gathered from the different quarry sites, measures up to the criteria set for the roadwork, and to provide a suitable source of subgrades for road works.

This research covers the study of the compliance of each soil samples taken from three different quarry locations to the requirements set for roads. Three soil samples were taken from three locations: Brgy. San Jose GMA, Cavite; Ayala West Grove Silang, Cavite; and Brgy. Sahud Ulan Tanza, Cavite. Sieve analysis (ASTM D 422), Atterberg limit (ASTM D 4318), Moisture density relations of soil using modified effort (ASTM 1556), California bearing of laboratory compacted soils (AASHTO T-193), Soil classification (ASTM D 4387) were the reported tests on backfill material.

Findings of the research show that a soil with high value of plasticity index is clayey which is prone to liquefaction. In conclusion, the soil from Brgy. Sahud Ulan Tanza, Cavite, which is sited at 14˚ 20’ 36.55” N 120˚ 49’ 45.59” E, is most suitable among the three sources for backfill material not only because of its plasticity index, but also because it has a high value of bearing capacity.