

Thesis Title	Consolidation of Two-Layered Inelastic Soil Subjected to Cyclic Loading	
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ABSTRACT

The purpose of this research is to determine the average degree of consolidation and rate of settlement of two-layered inelastic soil subjected to cyclic loading. Analyze consolidation problems of two-layered soil by the Finite Element method and compare with the obtainable closed form solution method. Each soil layer has the same stratum thickness. Coefficient of consolidation ratios , first layer to second layer , are 0.1 , 1.0 and 10.0. Coefficient of permeability ratios , first layer to second layer , are 0.01 , 1.0 and 100.0. Coefficient of consolidation ratios , in normally consolidated state to overconsolidated state , of the first layer is 0.2 and the second layer is 0.2. Coefficient of volume change ratio , in overconsolidated state to normally consolidated state ratios of the first layer is 0.2 and the second layer is 0.2. Drainages from top and bottom surfaces of soil are permitted under square cyclic loadings which have equal loading and unloading periods in term of time factors, with respect to thickness and coefficient of consolidation in normally consolidated state of the first layer, are 0.0625 , 0.25 , 1.00 and ∞

Analytical results indicate the average steady state percentage of consolidation under cyclic loading during loading period is greater than 65 % and the average steady state

percentage of consolidation under cyclic loading during unloading period is less than 35 %. The average steady state percentage of settlement under cyclic loading during loading period is greater than 57 % and the average steady state percentage of settlement under cyclic loading during unloading period is less than 54 %. Steady state consolidation under cyclic loading periods of 1.0 , 0.25 and 0.0625 occurs at the 35th cycle , 67th cycle and 204th cycle respectively.