

Effect of loading rate on the volume change behavior of unsaturated residual soil

ABSTRACT

Residual soils occur in most countries of the world but those that occur in greater area and depth are usually found in the tropical humid areas. This research examines the effects of loading rate of applied or net mean stress on the volume change behavior of an unsaturated granitic residual soil. Three loading rates were adopted: fast, slow and extra slow loading rate. It was observed that the loading rate of applied or net mean stress has a pronounced effect on the void ratio and degree of saturation but has an insignificant effect on the water content of residual soils subjected to constant matric suction.

Keyword: Degree of saturation; Laboratory test; Partially saturated soil; Stress path; Suction; Void ratio; Water content