

An Experimental Study of the Parameters Affecting the Compression Index of Clay Soil

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Abstract : The constant rate of strain (CRS) test is a rapid technique that effectively measures specific properties of cohesive soil, including the rate of consolidation, hydraulic conductivity, compressibility, and stress history. Its simple operation and frequent readings enable efficient definition, especially of the compression curve. However, its limitations include an inability to handle strain-rate-dependent soil behavior, initial transient conditions, and pore pressure evaluation errors. There are currently no effective techniques for interpreting CRS data. In this study, experiments were performed to evaluate the effects of different parameters on CRS results. Extensive tests were performed on two types of clay to analyze the soil behavior during strain consolidation at a constant rate. The results were used to evaluate the transient conditions and pore pressure system.

Keywords : constant rate of strain (CRS), resedimented boston blue clay (RBBC), resedimented vicksburg buckshot clay (RVBC), compression index

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