One-dimensional consolidation analysis taking account of secondary compression during primary consolidation

by

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Abstract

A practical one-dimensional consolidation analysis technique for predicting the consolidation time curve and the excess pore water pressure dissipation of clays exhibiting secondary compression is described. The constitutive soil model is based on the equation governing the secondary compression rate of decease in void ratio. This model uses four parameters ,namely, C_c^*, C_α, c_v^* and $\dot{e}_0$, that can be easily determined from the conventional standard oedometer test to check the validity of the proposed soil model, the consolidation time curves observed in oedometer specimens are compared with those obtained by the analysis. Satisfactory agreement is obtained between the computed behavior and oedometer observations.

Keywords: One-dimensional consolidation, Secondary compression, Clay, Finite difference method

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