

Compressibility behaviour and engineering properties of North Borneo peat soil

ABSTRACT

It is known that peat soil is highly compressible. A constituent of peat soil from Klias, Sabah covering a wide range of index properties of fiber contents, specific gravity, organic contents and moisture contents were subjected to one-dimensional consolidation tests. This paper presents the engineering properties and compressibility behavior of sapric type of tropical peat soil. In this role, the high compressibility of Klias peat stands out as a most significant engineering property. With this intention, the purpose of this paper is to provide a simple and analytical means for predicting the consolidation settlement of sapric peat deposit under loading. The rate of primary compression, after a certain time. Increases with the logarithm of time. Loading applied from low stress to high stresses started from 2, 6.25, 12.5, 25, 50, 100 and 200 kPa resulting in high compression index, C_c and ratio, C'_c . The Klias peat soil represented sapric type of tropical peat with organic content is 98.43% and lower fiber content which is about 18% of the specimen. Compressibility index C_c , Coefficient of consolidation C_v , and Compression index, C_c , was identified as a crucial component of parameters in determination of settlements behaviour of peat soil. The coefficient of consolidation, C_v , was determined within the range of 1.264 to 12.911 cm²/min and requires special considerations in laboratory testing procedures and interpretation of results.