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Abstract. This paper presents the findings from the field observation and site exploration for construction on peat in Sri Aman, Sarawak, Malaysia. A visit to Balai Bomba and Pejabat Metrologi in Sri Aman has been done in August 2019. From the observation and measurement conducted on the two locations of the constructed area on peat shows the settlement, δ recorded ranges from 100 mm to 150 mm. A field sampling for the determination of geotechnical properties of peat has been done in Balai Bomba Sri Aman. The depth of the peat in the area is about 2.88 m and the results show that the peat has high natural moisture content ranges from 900 % to 1400 %. The organic content (OC) for the site is in the range of 70 %-90 % for a depth of 0.5 m to 2.88 m, and categorized as H3, fibrous peat except for the first 0.5 m is 63 % which fall under H5, hemic peat group according to Von Post classification.

1. Introduction

Peat is extremely soft and defined as a non-homogeneous deposit of partially decomposed vegetative matter saturated with water and encountered in low-lying areas where the water table is near or above the ground surface [1]. High moisture content in peat is the main factor contributing to the characterization of peat with low bearing capacity and high compressibility behaviour. In Sarawak, about 90 percent of the peat is classified as deep peat with a depth of more than 1.5 meters and the depth of peat layers increases from the coast towards the inland [2]. The content of peat differs from location to location due to the factor such as origin fiber, temperature and humidity [3]. Peat can be classified in accordance to Von Post Classification and fiber content [4]. The Von Post 10 degree of humidification is based on the appearance of peat water upon squeezing by hand. The Von Post scale ranging from H1 (least decomposed-very fibrous) to H10 (most decomposed-very few fibers). Table 1 and figure 1 summarized the classification of peat type based on [5] degree of humification and fiber content to ease the understanding of the reader.

In general, peat exhibits an immediate 'elastic' settlement as soon as it is loaded, and a 'consolidation' settlement thereafter. The compression behavior of peat varies from the compression behavior of other types of soils in two ways. First, the compression of peat is much larger than that of other soils. Secondly, the creep portion of settlement plays a more significant role in determining the