

**SOIL PROFILE AT VIBRATORY COMPACTION
AREA IN KERTEH, TERENGGANU**

BY

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ABSTRACT

Vibro-compaction is a recognized and an accepted technique for stabilization of loose or granular soil conditions. This method has been used to improve bearing capacity and works best in loose sands consist of 12% fine or below, (Schaefer, 1997). This study will explore the applicability of this technique based on fine content and soil grading. Thus, sampling was conducted using wet borehole method in Kertih along the known Vibro-compaction improvement area. The borehole was driven at 14 different locations. For each borehole, minimum 1 Kg sample was collected at every 0.5 m until 4.0 m depth as minimum. With regard to BS 1377, laboratory testing such as moisture content, wet sieve and dry sieve was conducted to determine the moisture content as well as total fine content for every sample collected and this laboratory testing took place at UiTM Pulau Pinang Laboratory. From the laboratory test result, it was found that the maximum fine content is 12%. This matched the maximum fine content as suggested by Schafer, 1997. Then, the fine content pattern along the study area was illustrated to perform the best view of fine content along the study area. From this study, it brings the confidence that the use of Vibro-compaction at the study area suit the fine content as suggested by expert.

Keywords: Vibratory compaction, Wet Borehole, Dry sieve, Wet sieve, Fine content

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The soil underground naturally is consisting of a number of layers or stratum and each layer differs in their characteristics. Usually, the top strata are compressible, which means they are not strong enough to support heavy loads. Therefore, the properties of the soil need to be improved and can be done by various types of ground improvement techniques.

The term ground improvement covers various methods including deep compaction technique. Compaction techniques are fondly used to solve a wide range of foundation problems and their scope now extends beyond the treatment of granular materials to include many silty or clayey soils. This introduces possibility of strengthening the ground on wider range of development projects.

The process of compaction results in increase in soil density, with a subsequent reduction of air-void volume, but with no change in the volume of water. This is normally affected by compaction means.