

Response behaviors of soft Bangkok clay from earthquakes

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Abstract: Earthquake is a natural hazard that could cause a serious damage to civil engineering structures. Especially when seismic wave passes through soft Bangkok clay in which amplification of ground acceleration might be occurred. This research studied the factors that affected soil's response due to seismic wave. The effect from soft clay thickness, depth to rock-liked layer, an influence of stiff clay layer and dynamic soil properties were considered. Moreover shear wave velocity of soil layer obtains from field tests are compared with shear wave velocity obtained from empirical equations in order to choose suitable equation for the model. A method in linear equivalent will be analyzed with 39 soil data in this research. The study found that the appropriate elevation of rock-liked layer for the model is 120 meter and stiff clay layer in the deeper depth does not have an effect to the response of ground surface. Besides, the result shows that the amplification factor will increase when soft clay thickness decreased and the predominant period depends on soft clay thickness.

Keyword: Geotechnical earthquake engineering, Earthquakes, Soft Bangkok clay, Amplification factor, Shear wave velocity