

Amnarj Yanuviriyakul 2009: A Study of Response Behavior of Soft Bangkok Clay from Earthquakes. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Assistant Professor Suttisak Soralump, Ph.D. 192 pages.

Earthquake is a natural hazard that could cause a serious damage to civil engineering structures. Especially when seismic wave passes through soft Bangkok clay layers 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 obtain from field tests are compared with shear wave velocity obtained from empirical equations in order to choose suitable equation for the model. 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 doesn't have an effect to ground surface response. Besides, the result shows that the amplification factor will increase when soft clay thickness decreased. The maximum amplification is reached when soft clay thickness is between 6 to 10 meters. However, the amplification of soft clay thickness lower than 6 meter seems to increase with soft clay thickness. Furthermore, predominant period increases with soft clay thickness. Lastly, this study proposed design response spectrum for soft Bangkok clay in various thickness of soft clay. These response spectrum are also compared with UBC code (1997)

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Thesis Advisor's signature

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