

عنوان مقاله:

Development of Soil Distribution and Liquefaction Potential Maps for Downtown Area in Yangon, Myanmar

محل انتشار:

ژورنال مهندسی عمران، دوره 4، شماره 3 (سال: 1397)

تعداد صفحات اصل مقاله: 13

نویسندگان:

Zar Lee Tint - Department of Civil Engineering, Yangon Technological University, Yangon and 11111, Myanmar

Nyan Myint Kyaw - Department of Civil Engineering, Yangon Technological University, Yangon and 11111, Myanmar

Kyaw Kyaw - Department of Civil Engineering, Yangon Technological University, Yangon and 11111, Myanmar
Department of Civil Engineering, Yangon Technological University, Yangon and 11111, Myanmar

خلاصه مقاله:

The problem of soil against liquefaction during earthquakes is devastating geotechnical phenomenon. Soil against liquefaction is generally occurred in loose cohesionless saturated soil when pore water pressure increases suddenly due to earthquakes and shear strength of the soil decreases to zero. Yangon area has been chosen as the study area because it is the most populated and largest city in Myanmar and located in low to medium seismicity region. In this purpose, the liquefaction potential map have been prepared for site planners and decision makers to prevent loss of lives. Geographic Information System (GIS) is very useful in decision making about the area subjected to liquefaction. ArcGIS software is used to develop the liquefaction potential maps of the selected area in Yangon City. To perform in this study, the field borehole data for groundwater table, Standard penetration test (SPT), blow counts, dry density, wet density and fine content, etc. have been collected from the downtown area of this city. Firstly, the safety factor of soil liquefaction is computed by using NCEER (National Center of Earthquake Engineering Research, 1997) Method based on cyclic resistance ratio and cyclic stress ratio and then liquefaction Potential Index (LPI) values are determined using Luna and Frost Method, 1998. Finally, liquefaction potential maps are developed corresponding to the ground motions for annual probability of exceedance equal to 1%, 2% and 10% in 50 years.

کلمات کلیدی:

Liquefaction Potential Index; Geographic Information System (GIS); Yangon City; Liquefaction Potential Map; Earthquake; SPT Data

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/804051>

