

Map of Earthquake-induced Landslides Potential on Artificially Transformed Hills in the Depositional Area of Tephric Soil Deposits

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So-called “loam” composed of primary fall-out tephtras and tephric soil deposits (tephric loess) is one of the factors causes earthquake-induced landslides on hills where thick loam is preserved. To evaluate potential of slope failure by this condition in the Japanese Island, the distribution of map of loam has been reported. To assess possibilities of earthquake-induced landslides in hilly areas heavily modified by human activities, man-made landforms should be modelled at the micro-landform scale considering original loam thickness. We estimated elevation changes by cutting and fill operation in the Gotentoge and Karakida areas in the Tama Hills where the Tama New Town was built using 1:3,000 topographical maps published in 1950s and present digital elevation model (DEM) with 5 to 2 m mesh. Also, 1:10,000 geological map of loam was used for estimation of thickness distribution of preserved loam. By this method, we tentatively mapped earthquake-induced landslides potential for the Tama Hills, artificially transformed hills in the depositional area of thick tephric soil deposits.

Keywords: earthquake-induced landslide, artificially transformed landform, hills, tephric soil, Tama Hills