

Relationship between Blow Count Number (N) and Shear Wave Velocity (Vs30) from the Specified Embankment Material: A Case Study on Three Selected Earthen Dams

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Abstract : The relationship between shear wave velocity (Vs30) and blow count Number from Standard Penetration Tests (NSPT) was investigated on specified embankment dam to find the solution which can be used to estimate the value of N. Shear wave velocity, Vs30 and blow count number, NSPT were performed at three specified dam sites. At each site, Vs30 measurement was recorded by using seismic survey of MASW technique and NSPT were measured by field Standard Penetration Test. Regression analysis was used to derive statistical relation. The relation is giving a final solution to applicable calculated N-value with other earthen dam. Dam engineer can use the statistical relation to convert field Vs30 to estimated N-value instead of absolute N-value from field Standard Penetration Test. It can be noted that the formulae can be applied only in the earthen dam of specified material.

Keywords : blow count number, earthen dam, embankment, shear wave velocity

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