

An Analysis of the Results of Trial Blasting of Site Development Project in the Volcanic Island

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Abstract : Trial blasting is conducted to identify the characteristics of the blasting of the applicable ground before production blasting and to investigate various problems posed by blasting. The methods and pattern of production blasting are determined based on an analysis of the results of trial blasting. The bedrock in Jeju Island, South Korea is formed through the volcanic activities unlike the inland areas, composed of porous basalt. Trial blasting showed that the blast vibration frequency of sedimentary and metamorphic rocks in the inland areas is in a high frequency band of about 80 Hz while the blast vibration frequency of Jeju Island is in a low frequency band of 10~25 Hz. The frequency band is analyzed to be low due to the large cycle of blasting pattern as blast vibration passes through the layered structured ground layer where the rock formation and clickers irregularly repeat. In addition, the blast vibration equation derived from trial blasting was $R: 0.885$, $S.E: 0.216$ when applying the square root scaled distance (SRSD) relatively suitable for long distance, estimated at the confidence level of 95%.

Keywords : attenuation index, basaltic ground, blast vibration constant, blast vibration equation, clinker layer

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