

LOCALISED VARIATIONS IN REFLECTED PRESSURE FROM EXPLOSIVES BURIED IN UNIFORM AND WELL-GRADED SOILS

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ABSTRACT

Recent experiments into characterisation of the loading resulting from detonation of a shallow buried explosive have highlighted the complex underlying physical mechanisms present at the face of a target situated above the soil surface. This paper presents the results from such experiments, where the localised blast pressure and impulse is measured using an array of Hopkinson pressure bars at specific points on the target surface. Two different soil types are tested; a relatively uniform sand, and well-graded sandy-gravel. It is observed that the variability in localised loading is intrinsically linked to the particle size distribution of the soil medium; the uniform soil produces repeatable data with little variation whereas the well-graded soil demonstrates considerable spread. The cause of this spread is quantified and discussed with reference to the distinct loading mechanisms acting on the target as seen in the experimental data.