P68 Determination of Incident and Reflected Blast Wave Parameters from 100 - 300g Charges

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Abstract:

Evaluation of the effect of a blast wave on the structure requires knowledge of a reflected blast wave characteristics. The experimental data from close vicinity of the explosion are quite sparse in the open literature. In this region blast wave is neither spherical nor planar and loading is therefore a bit more complex.

The aim of this article is to provide results of measurements of incident and reflected blast wave parameters obtained simultaneously for three types of explosives: TNT (standard), A-IX-1 (RDX/wax) and A-IX-1/Al (RDX/wax/Al). Cylindrical charges from 100 to 300g were set off at distances within 3 m from the sensors for reflected wave and within 5 m for incident wave measurement. Two types of sensors were compared - PCB

(113B22) and Kistler (211B3) for measurement of the reflected waves; PCB pencil probes (137B) were used for the incident wave. The ratio of incident to reflected pressure was determined. This type of experiment is needed for obtaining reliable data for model validation. It is further needed for studying response of scaled down plastic fibre reinforced concrete slabs.

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