

P42 The Effects of Direct Shear Resistance Models on the Simulated Behavior of Buried RC Roof Slabs Subjected to Airblast Induced Ground Shock

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Abstract:

Direct shear is a known response mechanism in RC slabs subjected to blast loads that resulted in their catastrophic failures. Resistance functions for direct shear in RC elements were introduced in the 1970s, and their adaptation for the analysis of structural response under blast and ground shock effects has been used since the 1980s. Recent direct shear impact tests were conducted on RC shear specimens with three reinforcement ratios, and the results were used to derive modified direct shear resistance functions. However, it was not known if the new resistance functions could accurately represent the behavior of buried RC roof slabs subjected to Airblast induced ground shock. This paper is focused on the assessment of several direct shear resistance functions for such analyses, and the results from the parametric study were compared with test data published in the 1980s. Finally, the results were compared also with those obtained from previous direct shear models to identify the behavioral parameters that could explain the observed behavior.

This paper will present the study, the findings, and provide conclusions and recommendations.

Notes: