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Blast Load Simulation in an Academic Environment

Clay Naito

Assistant Professor, Department of Civil and Environmental Engineering,
Lehigh University

Richard Sause

Professor, Department of Civil and Environmental Engineering, Lehigh University

Hassan H. Abbas

Visiting Research Scientist, Department of Civil and Environmental Engineering,
Lehigh University

Industry Participants

High Concrete

Abstract

Deliberate attacks have been carried out on our civilian infrastructure at home and abroad at an alarming rate in the past decade. The design and retrofit of civilian structures to reduce the potential for progressive collapse due to extreme blast loads is currently receiving significant attention from researchers in the US. In order to enhance our understanding of the behavior of structural components and systems under blast loads, and to verify the analytical methods used in design, experimental research is required. Experiments using detonation of explosives are unlikely to be accepted in an academic environment, and there is a need for developing experimental methods that can be used safely and reliably to simulate the response of structural components to blast loading. The main goal of the current research program is to propose, develop, and evaluate new experimental methods that can be used to simulate blast load effects on structural columns and beams. The project will include participants from industry and will provide support for a postdoctoral researcher.