CURTAIN WALL TESTING IN LARGE SHOCK TUBE

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The Large Blast/Thermal Simulator (LB/TS) at White Sands Missile Range, New Mexico is operated and maintained by the Defense Threat Reduction Agency (DTRA). The simulator includes a 550-ft-long tunnel with a semi-circular cross section with a radius of 32.8 ft. Blast simulations have been performed in the facility that involved exposing a curtain wall structure to a specified blast environment. The blast was created using a high explosive charge hung in a vertical plane and uniformly distributed over the cross section of the tunnel.

The results from five preliminary tests in the LB/TS that used detonating cord (PETN) distributed across the tunnel cross-section were used for making predictions for subsequent tests.

This paper will include an analysis of the results from the series of curtain wall tests. It will cover the methods used to predict charge weight and distance from the curtain wall. The physics of the blast wave along with the efficiency of simulating the characteristics of a plane wave will be reviewed. The overall goal will be evaluating the validity of using the cross-section of detonating cord to simulate a plane wave in a tunnel environment.