

## Abstract

This thesis tested the capabilities of a stainless steel wire mesh embedded in a thin beam as a preventative measure against blast loading. Two reinforced concrete beams were cast with curbs at both ends in order to create a fixed-fixed connection, which simulated the continuity of a wall slab system. The beams were tested using a slow deflection of 3 inches over 20 minutes, which included an unloading/reloading cycle, and a fast deflection of 3 inches over 5 seconds. The beams showed good resistance to the loading and were able to retain their shape. The slow-loaded beam cracked at the curb, but was able to bounce back after unloading without cracks in the span. The fast-loaded beam cracked in the span, but exhibited significant rotation at the curbs. Both suggest that the curb design was not sufficient to fully test the mesh-in-slab system. However, the system did show resistance to dynamic loading in concept and allows for more future testing.