

## **Response of Simply Supported Laminated Glass Panels to Semtex 1A Explosions**

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Laminated glass is commonly used in structures requiring blast resistance due to its ability to dissipate energy and limit fragmentation. This study examines the performance of two configurations of multi-layer laminated glass panels subjected to Semtex 1A explosions. The panels were designed with a sacrificial ply concept, where one glass layer absorbs energy through fracture, while the remaining layers sustain residual loads. Simply supported panels were tested to simplify boundary conditions and enable numerical and analytical reproduction. Explosive tests measured reaction forces and mid-span deflections, with Semtex 1A chosen for its low soot generation and mass adaptability. Quasi-static three-point bending tests assessed the residual bending strength of blast-damaged panels and compared the bending strength under quasi-static and dynamic conditions for undamaged panels. The findings enhance understanding of the dynamic response and residual strength of laminated glass, contributing to improved designs for blast-resistant structures.