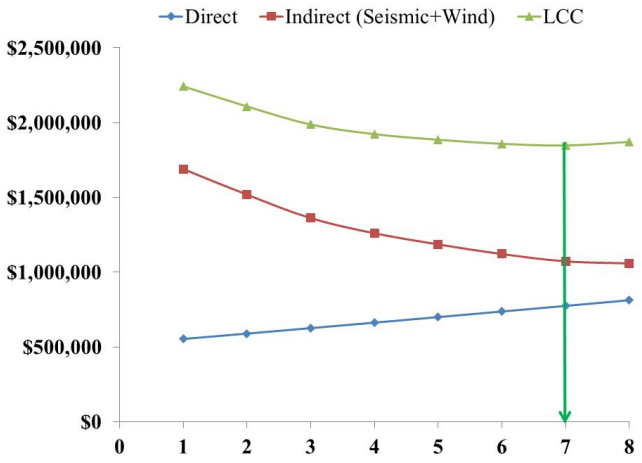
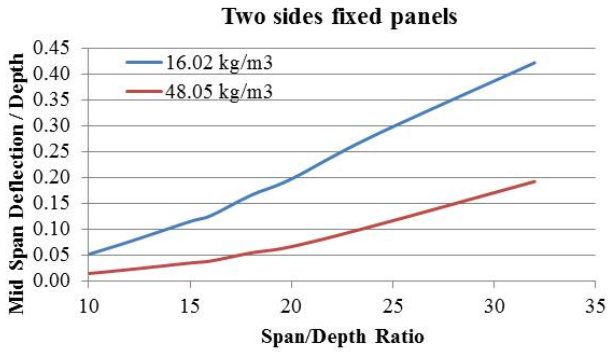
Structural Panels for Hazard Resistant Structure

---- funded by National Science Foundation

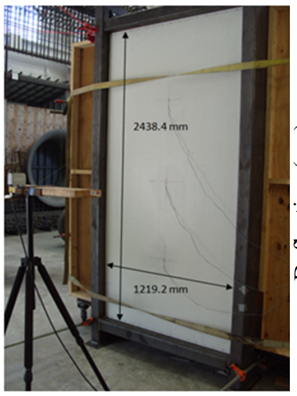
The proposed Composite Structural Insulated Panels (CSIPs) are made of a low-cost, thermoplastic orthotropic glass/poly-propylene (glass-PP) laminate as the face sheet and expanded polystyrene (EPS) foam as the core, with a high face sheet/core moduli ratio. A series of study were performed on the innovative CSIPs as the following shows.



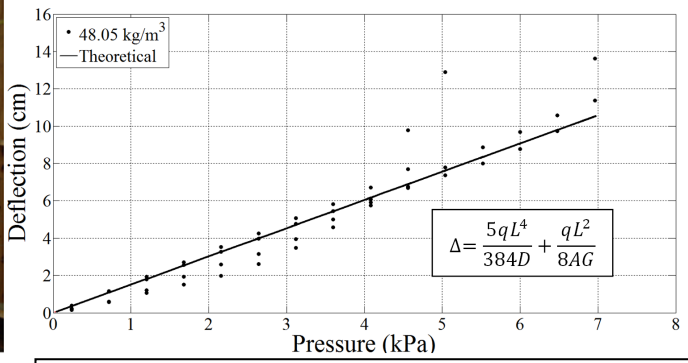
Life cycle analysis on multi-hazards



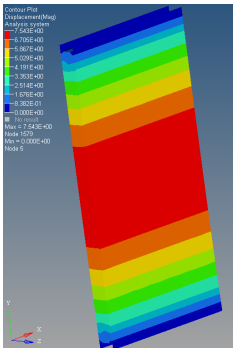
Panel design chart based on FE models in ANSYS



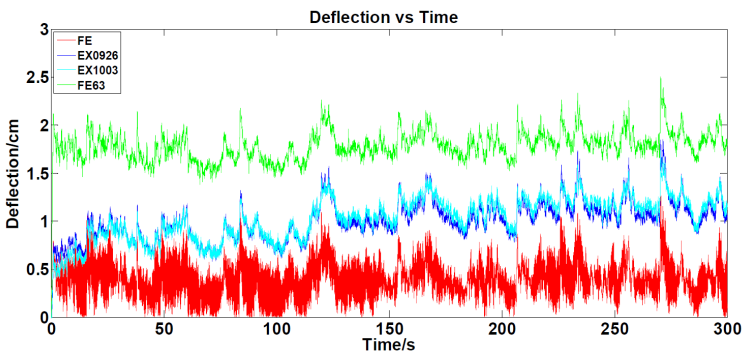
Simulated wind pressure tests
(F. J. Masters, UF)



Numerical modeling for mid-span deflection
(F. J. Masters, UF)



FE modeling in LS-DYNA



Results comparison between FE and experiments