

# Hurricane Resistance Lightweight Concrete AeroDwell Panels

## Objectives:

- Produce lightweight foam-based concrete with optimized unit weight of approximately 90 pcf, to be used for structural members such as wall panels and beams
- Identify design parameters of the foam-based concrete such as pull-out strength; coefficient of modulus of rupture; etc.
- Build model buildings with the aforementioned concrete and to subject them to internal pressure in order to simulate wind pressure.

## The Foam



## Concrete Mix Ingredients:

- Cement
- Water
- Sand
- Foaming Agent (40%)
- Fibers

## Mix Preparation



## Pouring of Concrete



## Lightweight Concrete Panel



## Beam Casting



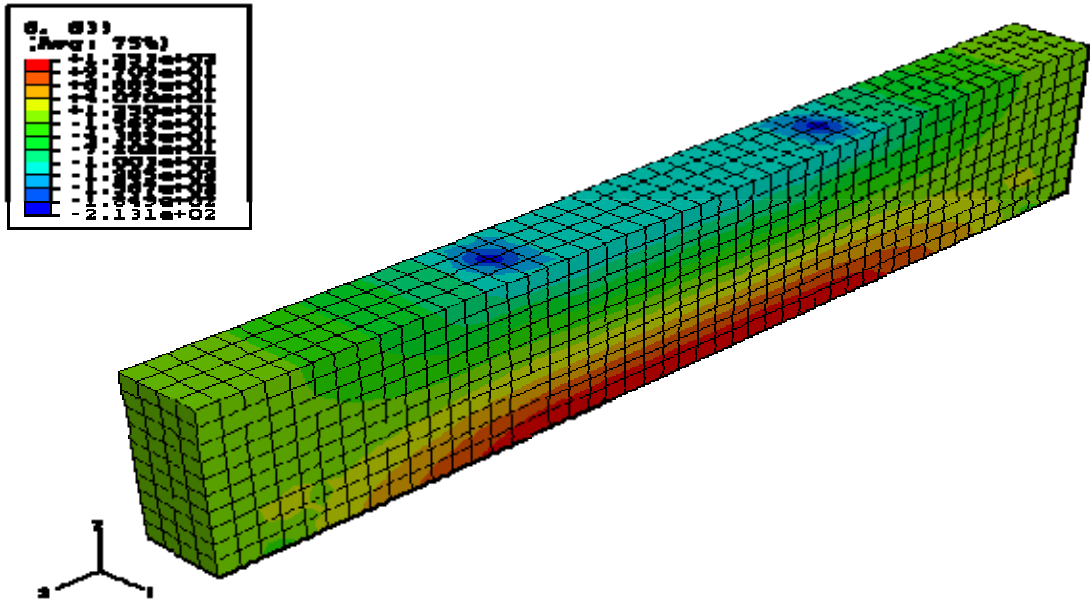
## Beam Test



## Typical Tested Beam

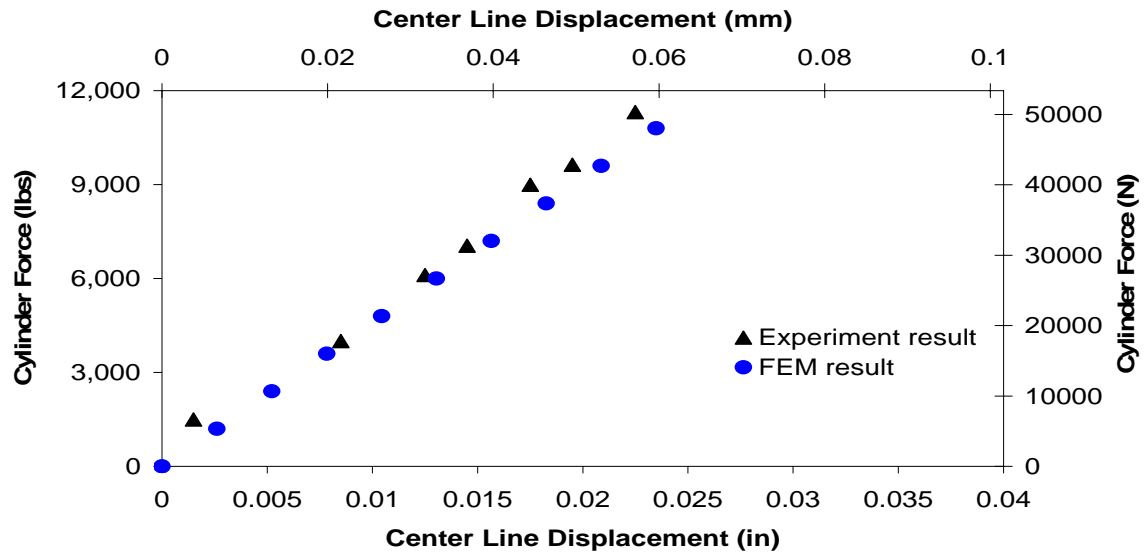


## Finite Element Modeling



## FEM vs Experiment

Load versus displacement plot



## Beam Test

