

Trends

Building Wind Performance Post-

Hurricanes Hugo (89) and Andrew (92)

(Excluding Tornadoes)

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Significant Wind Performance Improvement



Model Building Codes

- Pre-Andrew: Very Few Building Envelope Requirements
- 2015 IBC and IRC: Many Envelope Requirements

ASCE 7: new Post-Andrew Provisions

- Wind-borne debris
- Topography
- Coefficients for hip, monoslope, sawtooth, multispans gable, stepped roofs, domes, open canopies
- Rooftop equipment
- Parapets
- Roof zones: 2016 revisions

New Post-Andrew Test Methods

- ASTM E 1896 – glazing debris impact
- ASTM D 3679 – vinyl siding
- ASTM D7158 – asphalt shingles
- FMG 4470 (**revised**) – low-slope roof
- SPRI ES-1 – edge flashings
- SPRI GT-1 – gutters

New Post-Andrew Design Guides

- AIA: *Buildings at Risk ...*
- IBHS: *Fortified*
- FEMA: P-55 (**revised**), 424, 499, 543, 550, 577, 804
- National Research Council of Canada: NRC-IRC-16785

Improvement Implications on Complexity of Design & Construction

- Challenging for envelope designers & contractors to keep up with improvements & properly execute them

Vulnerability
assessment
tools, workforce
development, &
robotics

