

2011 Wind Provision Survey Results

NCSEA Wind Engineering Committee
NCSEA National Conference
Oklahoma City, Oklahoma
October 22, 2011



Survey Statistics

- Survey sent to over 9,500 practicing structural engineers
- Over 980 responses received (10%)
- Distribution of responses based upon NCSEA regions
 - East Region – 15% of responses
 - Southeast Region – 18% of responses
 - Midwest Region – 26% of responses
 - West Region – 41% of responses
- Distribution matches NCSEA membership distribution



Survey Results

- Which edition of the IBC is used?
 - 2009 IBC – (35%)
 - 2006 IBC – (53%)
 - 2003 IBC – (5%)
 - Other - (7%)



Survey Results

- Which edition of ASCE 7 is used?
 - ASCE 7-10 – (2%)
 - ASCE 7-05 – (92%)
 - ASCE 7-02 – (3%)
 - Other – (3%)



Survey Items

- **Survey reviewed the use of the following provisions**
 - IBC Alternate All-Heights Method
 - ICC 600 Provisions
 - ASCE 7 Method 1 – Simplified Provisions
 - ASCE 7 Method 2 – All-Heights Provisions
 - ASCE 7 Method 2 – Low-Rise Provisions
 - ASCE 7 Method 2 – Flexible Provisions
 - ASCE 7 Method 3 – Wind Tunnel Provisions



Survey Results

- **Percentage of “Frequently & Whenever Applicable” Use**
 - IBC Alternate All-Heights Method - (20%)
 - ICC 600 Provisions – (2%)
 - ASCE 7 Method 1 – Simplified Provisions – (53%)
 - ASCE 7 Method 2 – All-Heights Provisions – (81%)
 - ASCE 7 Method 2 – Low-Rise Provisions – (17%)
 - ASCE 7 Method 2 – Flexible Provisions – (11%)
 - ASCE 7 Method 3 – Wind Tunnel Provisions – (2%)
- **Responses were consistent across all regions of country**



Survey Results

“What modifications or additions would you like to see in the wind design sections of the IBC?” (643 Responses)

1. Simplify the provisions
2. Combine all wind provisions into either IBC or ASCE, but not both
3. Provide a flow chart for using the wind provisions
4. Improve the maps
5. Add information on additional specialty items
6. Delete alternate basic load combinations



Survey Results

“What modifications or additions would you like to see in the wind design sections of ASCE 7?” (557 Responses)

1. Simplify the provisions (45%)
2. Go back to UBC/IBC type of provisions (9%)
3. Stop changing (5%)
4. Improve guidance on open structures, canopies, etc... (5%)
5. Already done in ASCE 7-10 (5%)



Recommendations for ASCE-7 and IBC Committees

1. **Reduce Number of Methods to one (1) Computational Method for All Buildings and one (1) Tabular Method for Buildings < 60' in height.**
 - Move Envelope Provisions to the Appendix
2. **Consolidate Wind Provision currently in both ASCE 7 and IBC to ASCE and simplify the provisions.**
 - Remove Discontinuity in C&C Loading at 60 feet.
3. **Provide loading criteria for additional commonly encountered conditions, i.e. Canopies, Tall Parapets, Mechanical Screens and PV Panels.**



Recommendations for ASCE-7 and IBC Committees

4. Provide design procedures for Roof Top Units and Penthouses on Buildings > 60'.
5. Simplify Free Standing Wall Provisions.
6. Provide guidance for Irregular Building configurations.

