FLORIDA BUILDING COMMISSION

WINDOW WORKGROUP

REPORT AND RECOMMENDATIONS
TO THE FLORIDA BUILDING COMMISSION

MAY 31, 2006

Tampa, Florida

Meeting Design & Facilitation By

Florida Conflict Resolution CONSORTIUM

Report By Jeff A. Blair
Florida State University

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http://consensus.fsu.edu

This document is available in alternate formats upon request to Dept. of Community Affairs, Codes & Standards, 2555 Shumard Oak Blvd., Tallahassee, FL 32399, (850) 487-1824.
Overview
Raul L. Rodriguez, AIA, Chair of the Florida Building Commission, has made appointments to the Window Workgroup, and they are found below. Members are charged with representing their stakeholder group’s interests, and working with other interest groups to develop a consensus package of recommendations for submittal to the Florida Building Commission.

Workgroup Membership
The following members were appointed to serve on the Window Workgroup: Robert Amoruso, Chuck Anderson, Rusty Carrol, Mark Daniels, Jaime Gascon, Dale Griener, Jon Hill, C.W. Macomber, Dave Olmstead, Craig Parrino, Roger Sanders, Jim Schock, Steve Strawn, Sigi Valentine, and Dwight Wilkes.

Summary of Workgroup’s Key Decisions

Opening and Meeting Attendance
The meeting started at 9:05 AM, and the following Workgroup members were present: Robert Amoruso, Chuck Anderson, Rusty Carrol, Jaime Gascon, Dale Griener, Jon Hill, C.W. Macomber, Dave Olmstead, Jim Schock, Steve Strawn, Sigi Valentine, and Dwight Wilkes.

DCA Staff Present
Joe Bigelow, Rick Dixon, Mo Madani, and Betty Stevens.

Meeting Facilitation
The meeting was facilitated by Jeff Blair from the Florida Conflict Resolution Consortium at Florida State University. Information at: http://consensus.fsu.edu/

Project Webpage
Information on the project, including agenda packets, meeting reports, and related documents may be found in downloadable formats at the project webpage below: http://consensus.fsu.edu/FBC/wwg.html
Meeting Objectives
The Workgroup voted unanimously, 12 - 0 in favor, to approve the agenda as presented including the following objectives:

- To Review Work Group Procedures and Guidelines
- To Hear an Overview of Workgroup’s Charge and Scope
- To Identify Inspection and Enforcement Issues to Ensure Windows Comply with Wind Pressure Requirements
- To Identify Issues Related to Window Installation and Water Intrusion
- To Propose Options for Evaluation
- To Evaluate, Rank, and Refine Proposed Options
- To Consider Public Comment
- To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

Work Group’s Decision-Making Procedures and Meeting Guidelines
Jeff Blair reviewed the Workgroup’s decision-making procedures found on page 3 of the agenda packet.

Overview of Workgroup’s Scope and Charge
Rick Dixon explained that the scope and purpose of the Workgroup is to provide recommendations on how to provide building officials with needed information for conducting field inspections to ensure windows complies with the relevant wind pressure Code requirements. In addition, the workgroup was charged with considering issues related to window installation and water intrusion.

Presentation and Q&A on Current and Pending Code Requirements Regarding window Labeling
Mo Madani, DCA staff, provided Workgroup members with an overview of the existing requirements regarding window labeling as revised by pending glitch amendments to the Florida Building Code. In addition members of the public were offered an opportunity to ask questions on the presentation.
Mo reported that window labeling requirements are found in Chapter 17 Structural Tests and Special inspections, and Glazing as required in R308. In addition, a Supplemental Label is required when design pressures are higher than indicated on the label.

Identification of Inspection and Enforcement Issues to Ensure Windows Comply with Wind Pressure Requirements
See options evaluation section of this Report.

Identification of Issues Related to Window Installation and Water Intrusion
Overview of Discussion
AAMA 450-06 is available on the web site and approved. The Workgroup will be able to review at their next meeting. AAMA will release to DCA.
Evaluation of Options—Ranking and Refinement of Options
Results are found starting on page 6 of this Report.

General Public Comment
Members of the public were invited to address the Board. In addition, the public was encouraged to provide written comments on the form provided in the agenda packets. The Facilitator noted that all written comments would be included in the Facilitator’s Summary Reports.

Recommendations Regarding Window Labeling Provisions of the Florida Building Code to the Florida Building Commission
The members voted to make the following recommendations to the Florida Building Commission regarding the window labeling provisions of the Florida Building Code:

Prescriptive section in the code that would provide anchoring requirements with exceptions for non-standard installations. Manufacturer instructions would provide for override.

Require a Supplemental Label printed by manufacturer, licensed/validated by certification program tied to permanent label, one rating per window, DP, anchor size and spacing, safety glazing detail, and energy rating.

Define “performance characteristics” required on permanent labels in the code.

Limit of one product rating per permanent certification label.

Supplemental labels shall have a standardized template/format.
Standardized template, with specific information found in the same location on the label.

Supplemental label should indicate impact rating.

The energy rating shall be required on the supplemental label.

Require that the certification agency, testing laboratory, evaluation entity or Miami-Dade Product Approval be identified on the permanent and supplemental labels.

The product model/series number should be on the permanent and supplemental label.

FL number or NOA on the supplemental label.

Require the actual size of the window to be on the supplemental label.

Require the glazing thickness to be indicated on the supplemental label.

DP must include positive and negative pressure on supplemental label.
Additional Agenda Issues For Evaluation

Require certification agencies to verify on the BCIS that they are certifying the installation instructions.

Definition for “Performance Characteristics”.

Process for establishing a defined method for dealing with non-conformity related to labeling for certification program participants (i.e., wrong label, wrong glazing). Provide penalties. Notification of certification agencies when a violation occurs.

Rational and comparative analysis.
Consistency in rational analysis methods for how ratings are achieved.
Third party Validation on the rational analysis, to ensure interpolating is used instead of extrapolating.

Labeling for other products covered within the scope of AAMA and TAS will need to be considered.
Need to review and consider recommendations regarding garage door, shutters, and exterior doors.

Mulled windows AAMA 450-06 mulled testing standards. Water infiltration for mulled windows issue.

Consider an enforcement mechanism outside the Chapter 120 process.

Clarifying and ensuring that test labs and arch/engineers are meeting the labeling requirements.
Developing a method similar to how certification agencies comply.

Next Steps
Next meeting will meet in August.
Window WG will review additional agenda items.
Code language will need to be proposed.
HRAC will review Window Workgroup’s recommendations, and make recommendations to the Commission.
Code changes will be reviewed by TAC’s.
Mark Daniels is out of the country for several years and should be replaced as a workgroup member.
In order to consider and develop recommendations regarding garage door, shutters, and exterior doors, representation for these interests will need to included in the process.

Adjournment
The Workgroup voted unanimously, 10 – 0 in favor, to adjourn at 2:30 PM
OPTIONS ACCEPTABILITY RANKING EXERCISE RESULTS

During the meeting, Workgroup members were asked to consider the range of issues identified by the Workgroup’s building officials and to propose options to address the issues. For each issue in turn, the Workgroup was asked to propose the full range of options, to propose additional options, to seek clarification on the intent of each option, and then to evaluate each option using a four-point acceptability scale, where a 4 is acceptable, a 3 is minor reservations, a 2 is major reservations, and 1 is not acceptable.

Following the initial and additional evaluations, Workgroup members were requested to explain their range of concerns, and to identify any additional information they need in order to further consider the issue and/or option. The Facilitator explained that in general a 4 or 3 represents support for the option, and a 2 or 1 represents a lack of support for the option.

The following scale was utilized for the ranking exercises:

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<thead>
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Window Workgroup’s May 31, 2006 Report  5
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Rational and comparative analysis.
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Third party Validation on the rational analysis, to ensure interpolating instead of extrapolating.

Labeling for other products covered within the scope of AAMA and TAS.

Mulled windows AAMA 450-06 mulled testing standards. Water infiltration for mulled windows issue.

Enforcement mechanism outside chapter 120.

Garage door, shutters, exterior doors, etc.

Develop a method for ensuring that test labs and arch/engineers are meeting the labeling requirements, similar to requirements for certification agencies.

Next Steps
Next meeting will be toward end of summer after the July Commission meeting.
Window WG will review additional agenda items.
Code language will need to be proposed.
HRAC will review and make recommendations to the Commission.
Code changes reviewed by TAC’s.
Mark Daniels is out of the country for several years and should be replaced as a workgroup member.
Will need garage door, shutter, and exterior door, representation to consider issues related to same.

Adjournment
The Workgroup voted unanimously, 10 – 0 in favor, to adjourn at 2:30 PM.
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WINDOW LABELING DISCUSSION—ISSUES AND OPTIONS (WIND PRESSURE REQUIREMENTS)

Issues Identified by the Workgroup’s Building Official Members
C.W. Macomber: The intent of the Code, for both commercial and residential, and existing building code is to require labeling, AAMA, other certification agencies do not have to follow AAMA’s lead, copies may not provide same information, need standard label with consistent information provided to the inspector. In Miami-Dade, you are only required to state it is Miami-Dade approved. Back up paperwork provided additional information, no one place to get information. 80% provided on State web site, incorrect information, missing, or, supplemental label in code, label with glazing thickness, not provided on label. Found 1000 windows glazed with incorrect thickness. Should be mandatory state labeling with consistent labeling, the residential should be consistent with the commercial code.

Jim Schock: A variety of supplemental labels, difficult to decipher. Inspector needs to be able to know the design pressure is within the range of requirements. Want range of design pressures on drawings with glass in window, installation information, reused in field, they do not reproduce well, missing from job site. We need rudimentary requirements, screws placement, etc. design pressure represents glazing in place.

Dwight Wilkes: Supplemental label is not the problem but the difference between the permanent label seems to be whatever they want to provide. Do not have correct glass size for pressure. Location in building and minimum pressures from engineering, can relate to drawings. Not asking for 3 inches of documents, supplemental label for minimum size of windows for frame for this pressure. Biggest problem is thickness of glass in relation to pressure.
Dale Greiner: Chapter 1603 says you must provide the design pressure, need to see that the window meets design pressures. Permanent label works and provides design pressure in original documents. If not provided, then need supplemental label.

Rusty Carrol: Spends time, 52 inspectors, workload on inspectors is not decreasing, need to keep it simple, does not have time to inspect. Some product approvals are too complicated for inspectors. Ran challenge using WINS, too many variations, too complicated to decipher. Need standardized form, should be simple, NOA and labeling. Found thin glass when not looking for it, should be QA and not inspectors responsibility, design pressure, safety, installation, energy calculations for tinted glass, etc. WINS label, is a consensus based document.

Jaime Gascon: Needs all the information available to inspector, any question at audit or manufacturer, glass thickness, types of glass certified, interlayer approved, qualified through testing. Complex NOA’s, the information is available to user. Should be simplified, it helps the inspection process, identify factors used on the job site.

Dale Greiner: Inspectors verify compliance with the Code. Faulty product is not the responsibility of the inspector to catch.

Rick Dixon: Building officials, information required by 203, CW, WINS label provides information needed for the job, where to go to find information, anchoring, configurations, place and type, don’t have to have all the information on the label, can have less or more information on the label as needed.

Dave Olmstead: We developed WINS and 203 label, now include FRC information which will be required shortly. The Label too small and difficult to read.

Building Officials Summary of Needs Regarding Labels
Simple, standardized, consistent, Design Pressure (DP), anchoring requirements, glazing thickness and properties.

Overview of Questions and Discussion
Chuck, Rusty, credibility is a given, John, contractor provided loose labels, .5% problem, Rusty, is it necessary for inspectors to check thickness of glass? Jon, need to develop a established standardized challenge process when there is a problem.

How to provide building officials with what they need on labels: Dave, what are the issues in the field? Consensus label, viewable from 5 ft away, correct window? Difficulty is installation instructions. Sheer strengths vary with design pressure and fastening schedule, loads differ.

Sigi, building official does not ask if the window performs. Inspect window after it was installed. Assume it was done properly.

Rick, what problem needs to be solved? CW found 1000 houses not meeting pressure requirement. Homes are at risk, need to address, performance target Is the problem significant? Dale, yes it is significant.
Jim, is there a real occurrence of windows failing due to anchorage? Glass breaking? Rick, not with branded windows, more doors than windows with anchorage problems. Jim, rudimentary requirements for standard situations. Rick, prescriptive default, Jim, identify, Rick, pressure rating for window.

Dwight, 1000 engineered windows, Dave, wrong thickness of glass with DP, third party testing, not comfortable, keep it simple for inspectors. Details and variability provided, change glass size, certify, testing to maximum, need to use the maximum size tested, supplement information or use tested size.

Chuck, wrong product falsely portrayed by the label, building officials not able to tell, labels need to have someone standing behind them, certification agencies needs to check manufacturer. Tie label to certification program.

Dave, we have overly complicated labeling, how important is anchorage? Inspector can not keep track of calculations, need certification label with basic information. 8 inches O.C. will not blow out glass, basic code requirement.

Sigi, source of 1000 windows? All agencies have problems? Was the agency notified? C.W. they were two different projects with the same certification agency. Certification agency would not pull State certification. Revocation takes months, years to pull from State web site. Handled internally.

Rick, building official has authority to take punitive action against contractor, specifier, manufacturer.

Sigi, need to notify certification agency.

Rick, WINS information, except installation instructions, can manufacturers provide to building officials?

Rusty, 2 sites, involved evaluator, need a design professional with rough openings on set of plans, when checked had triple bucks, window sizes not standardized, product approvals must be approved by building designer. Good installation, how window installed, wrong PA, complexity of NOA, manufacturer’s fault, screw spacing should be consistent, not so many options, takes too long to figure out correct spacing, match PA with window. Too many models, too much variation in screw spacing.

Dave, safety factors on windows do not always match.

Robert, competitiveness, different wind zones, manufacturer allows installer to use, manufacturer sells to installer, make the Code prescriptive. Manipulate to make window cheaper.

Rusty, number of screws does not make window cost prohibitive.
Jon, need a defined and standardized process when deficiencies are discovered. Does the building official trust the label. With consequences when fail to comply.

CW, fixing code, failures, have not had a design event since Andrew. More impact windows installed, installation a concern, do not have NOA’s, market grew since certification, not AAMAs, minimum performance based code, building official needs to justify through paperwork, need label validator.

Dwight, computer program, add O.C. spacing of fasteners. Certain size, certain DP.

Dave, pre-punched window frames, expensive software and programming, ½ million dollar investment, not practical for every manufacturer to do this.

Steve, different frames, materials, anchoring through jam, how installed, fin, jamb, difficult to pre-arrange anchoring, approval process requires installation document, direction from engineer or architect.

Dwight, inspector does not have time to download installation instructions.

**Public Comment**
Jim Krahn, Hallmark Certification of WDMA, manufacturer, here as a resource.

Jeff Burton, need to target, pressure on windows, installation right on site. People installing wrong windows on site. Hard to get right installation instructions on site. Color code the windows for pressure. Set up third party inspector to go around the State. Set up a policy, when negligent, take to court.

Dave Martin, small certification labels, positives stay at one point in field, negatives vary, building officials do not see the need to match design pressure to opening. Supplemental label match DP of product with the opening.

Dennis, keep it simple, NOA on window does not have basic information as on AAMA label, NOA enforces other side, trust NOA label. Inspectors required to inspect installation, but are not doing it. Information provided by manufacturer, inspector not doing it. Go after engineers and certification bodies.

Dick Wilhelm, support color coding, must have a hammer, go after people causing the problems.

How do we ensure a genuine or counterfeit label is in place.
Identification and Evaluation of Options Exercise Results

Single NOA/product approval for single one window, not multiple variations.

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Members Comments and Reservations (5/31/06):
May be limited to one size of window, one model or series of window ok, different subcategories, impact rating, Too specific, will kill manufacturers

Require WINS label information, data, on each window.

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Members Comments and Reservations (5/31/06):
Don’t have to print the whole thing.

Prescriptive section in the code that would provide anchoring requirements with exceptions for non-standard installations. Manufacturer instructions would provide for override. If the manufacturer chooses to override, provide information.

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Revised manufacturer’s override

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Members Comments and Reservations (5/31/06):
Default anchoring, superceded by manufacturer, general guidelines provided, prescriptive. Code cannot address every type. Where is the information on the label. 4 sheets of 7x11 information Manufacturer’s override, how would this work? Override prescriptive method, require anchoring information. Require anchoring installations. HVHZ, attach details, everything is special. Too many installation options to include them all.
Supplemental label printed by manufacturer, licensed/validated by certification program tied to permanent label, one rating per window, DP, anchor size and spacing, safety glazing detail, and energy rating.

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**Members Comments and Reservations (5/31/06):**

Already covered by the Code.
Label required.
Just another label to put on with more detail than necessary.
Prescriptive information, still all the variations on the attachment.
Bucking glass already.
Exterior entry doors, skylights, storefronts? Look at entire package. What will it do?

Define “performance characteristics” required on permanent labels in the code.

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**Members Comments and Reservations (5/31/06):**

This was in the standard building code. Defines performance requirements in the code. The code requirements are minimum requirements of the product. Have to define them. Need Definitions of performance characteristics.

**Limit of one product rating per permanent certification label**

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**Members Comments and Reservations (5/31/06):**

What does it say?
Some programs allow multiple configurations of same product on same label. Will know which applies.

Supplemental labels shall have a standardized template/format.

Standardized template, certain information found in certain location on label.

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**Members Comments and Reservations (5/31/06):**

Prevents flexibility in certification agencies, standardized format could be the same information in the same general areas of label, standardized format.
Inspectors have only a few minutes to do the inspection.
Placement within label, where to look.
Supplemental label should indicate impact rating.

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Members Comments and Reservations (5/31/06):
Supplemental label considered a label tab? Temporary label on glass that can be peeled off later.

The Energy rating shall be required on a supplemental label.

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Members Comments and Reservations (5/31/06):
Default ratings on label?
NFRC rated, not on label, has required label format.
Gone off track, presume NFRC label required.
Can label with test results without NFRC.
Manufacturer’s selling elsewhere may not want Florida info on label.

Require that the certification agency, testing laboratory, evaluation entity or Miami-Dade Product Approval be identified on the permanent and supplemental label.

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Members Comments and Reservations (5/31/06):
Administrator validator, reviews test reports.
Redundant with code requirements.
Not on supplemental.

The product model/series number should be on the permanent and supplemental label.

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Members Comments and Reservations (5/31/06):
Dade does not have Miami-Dade.
Not sure it should be on either label.
Could put any model on it.
Forced entry specified on supplemental label.

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Members Comments and Reservations (5/31/06):
Already on the permanent label.

FL number or NOA on the both labels.

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<th>2= major reservations</th>
<th>1= not acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Ranking 5/31/06</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Revised FL on Supplemental only</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Members Comments and Reservations (5/31/06):
System does not exist to do this. No room on database to add FL#’s. 49 other states and international sales. NOA #’s changes as it is filed, adds confusion in the field.

Tested size of window on supplemental label

<table>
<thead>
<tr>
<th></th>
<th>4=acceptable</th>
<th>3= minor reservations</th>
<th>2= major reservations</th>
<th>1= not acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Ranking 5/31/06</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Revised, actual window size</td>
<td>10</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Members Comments and Reservations (5/31/06):
Could have label R-50, every window 44x60. Easy to see, model and size. Does not give inspector enough information on permanent label. This is where we are now. Inspectors want to see actual size of the window. Comparative analysis? WINS label. How to create a label from database? Actual size of window comes out of manufacturer’s database. Different certification programs. Actual window size will not help.
Require Glazing thickness on supplemental label

<table>
<thead>
<tr>
<th></th>
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<th>3= minor reservations</th>
<th>2= major reservations</th>
<th>1= not acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Ranking</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5/31/06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Members Comments and Reservations (5/31/06):**
Not address, inspector does not need to check glazing.

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DP must include positive and negative pressure on supplemental label.

<table>
<thead>
<tr>
<th></th>
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<th>3= minor reservations</th>
<th>2= major reservations</th>
<th>1= not acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Ranking</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5/31/06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Members Comments and Reservations (5/31/06):**
“Can” better than “must.”

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Simplified color coded labels to indicate design pressure, etc.

<table>
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<th>1= not acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Ranking</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>5/31/06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Members Comments and Reservations (5/31/06):**
How many colors needed? 60 over minimum, 10-12 colors.
Simplicity, not achievable, too many options.
Color blind issues.

**Rational and comparative analysis**
For evaluation at a subsequent Workgroup meeting.

**Members Comments and Reservations (5/31/06):**
Certification agencies allow, Miami-Dade.
Others do not allow.
State program, not checking.

*Other products: AAMA and TAS Windows, skylights, doors, 101(not garage doors) 202*

For evaluation at a subsequent Workgroup meeting.

**Require certification agencies to verify on the BCIS that they are certifying installation instructions.**
For evaluation at a subsequent Workgroup meeting.
ATTACHMENT 1

WINDOW WORKGROUP

May 31, 2006—Tampa, Florida

Meeting Evaluation Results

*Average rank using a 0 to 10 scale, where 0 means totally disagree and 10 means totally agree.*

1. **Please assess the overall meeting.**

   - **8.4** The background information was very useful.
   - **7.8** The agenda packet was very useful.
   - **8.7** The objectives for the meeting were stated at the outset.
   - **8.5** Overall, the objectives of the meeting were fully achieved.
   - **8.2** Identification of inspection and enforcement issues to ensure windows comply with wind pressure requirements.
   - **7.4** Identification of issues related to window installation and water intrusion.
   - **8.8**
   - **7.8** Adoption of Workgroup’s Product Approval Validation Recommendations.

2. **Please tell us how well the Facilitator helped the participants engage in the meeting.**

   - **8.6** The members followed the direction of the Facilitator.
   - **9.7** The Facilitator made sure the concerns of all members were heard.
   - **9.5** The Facilitator helped us arrange our time well.
   - **9.2** Participant input was documented accurately.

3. **What is your level of satisfaction with the meeting?**

   - **8.8** Overall, I am very satisfied with the meeting.
   - **9.2** I was very satisfied with the services provided by the Facilitator.
   - **8.1** I am satisfied with the outcome of the meeting.

4. **What progress did you make?**

   - **8.1** I know what the next steps following this meeting will be.
   - **8.0** I know who is responsible for the next steps.

5. **Member’s Written Evaluation Comments.**
   - Website, under workgroup, did not have agenda or address of meeting.
   - Facilitator seemed to want to rush discussions.
   - No naked pizza.