Mo Madani
Technical Unit Manager, Florida Building Commission
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July 30, 2019

Dear Mr. Madani:

We understand the research to be conducted by the University of Florida, guided by Dr. David Prevatt, will be discussed July 31 during the Florida Structural Technical Advisory Committee (TAC) and Water Resistance Workgroup meeting.

On behalf of the more than 300 member companies of the American Architectural Manufacturers Association, AAMA's questions, considerations and recommendations on the proposed Florida high-rise building envelope research follow:

- AAMA supports meaningful research regarding high-rise building envelopes to better understand the leakage path(s) and possible solutions to reducing water infiltration.
- No forensic testing has been made available to determine the actual source of water penetration in buildings where water leakage was reported following Hurricane Irma. True forensic data is necessary to objectively analyze the issue. More complete research is needed.
- Test buildings that reported hurricane-related water damage using procedures in AAMA 511 and ASTM E2128.
    - Conduct tests replicating the wind-driven rains experienced during Hurricane Irma.
    - These tests should include the entire building envelope, not simply fenestration systems.
    - If leakage occurs, isolate the respective building envelope components during testing to determine the leak path(s) and identify which part(s) of the envelope allowed water to penetrate.
    - Once leak path(s) is/are determined, analyze the building envelope to determine if the component(s) failed due to installation, design, lack of proper maintenance or if the product installed was not rated high enough for the given geographic and/or climate conditions or a combination of factors.
    - If conducting mockup testing, it is not recommended to test on existing mockups that are often damaged from previous testing. Instead, conduct testing of various types of products and wall conditions in a laboratory to simulate different building materials and conditions.
- In addition to analyzing buildings that reported leakage during Hurricane Irma — or any hurricane in terms of building envelope performance — expand the research to include nearby buildings that did not experience water damage. Focus the research on what worked and why, as well as what did not, so we can better understand the similarities and differences.
- How can the research scope and focus be modified to provide truly meaningful, actionable information to the entire building industry? When testing for water penetration resistance at pressures exceeding the product's water rating under laboratory conditions, any building materials, including fenestration units could leak.
    - Revise the research approach to focus on what the water Design Pressure of the building envelope should be to meet conditions in hurricane-prone zones.
- The proposed research protocol emphasizes use of ASTM E547, a laboratory test that applies a uniform static pressure across the fenestration product while simultaneously wetting the product at a rate of 5 gal./hr./sq. ft. While useful for rating a product, it's important to understand that the relationship between laboratory performance per ASTM E547 (or E331) and real-world storm conditions like hurricanes has not yet been established.
    - Redirect the research focus to create this key correlation by comparing laboratory performance to simulated hurricane conditions resulting in useful information for those responsible for designing the building envelope and/or manufacturing, supplying, installing or maintaining components featured in it.
- Include key aspects of the building envelope in research including roofing, soffits, siding, installation, design, construction and consult respective material experts.
- To eliminate the potential for conflict of interest, please ensure that participation in the research by members of the Florida Building Commission, and any of its technical advisory committees or workgroups, is voluntary. Payment for research should be reserved for impartial third parties.

AAMA members welcome the opportunity to provide further input to help ensure that research is conducted in a manner that provides useful results to those directly involved with the building envelope, and to address questions which may arise. Please let us know how we can engage in efforts to support meaningful research that delivers objective results to Florida taxpayers, and those involved in designing, constructing, maintaining and occupying Florida buildings.

Sincerely,

Jason Seals
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