FGIA
Fenestration & Glazing Industry Alliance

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November 12, 2024

To: Florida Hurricane Research Advisory Committee (HRAC) members

From: Fenestration and Glazing Industry Alliance (FGIA) Florida International University (FIU) Sliding Glass Door (SGD) Mid-Rise Residential Buildings Literature Review Research Technical Advisory Committee (TAC) members

The fenestration industry is committed to providing products that comply with Florida codes to meet the needs of Floridians, and to help protect structures and the people who occupy them from the elements. FGIA representatives served on the Research Technical Advisory Committee (TAC) for the Sliding Glass Door (SGD) in Mid-Rise Residential Buildings Literature Review project funded by the Florida Building Commission (FBC), and conducted at Florida International University (FIU), commencing with the first research TAC meeting September 12, 2024, until the fifth and final hour-long TAC virtual meeting on October 31, 2024.

The project's final research report contains inaccurate interpretations, and unsubstantiated recommendations which in many cases were not discussed with the TAC, nor do the opinions and recommendations represent the consensus of the TAC. FGIA detailed our specific concerns to the principal investigator at FIU and DBPR staff previously in writing. Some of our industry's concerns were addressed in the final report, other significant, substantive concerns as noted below were not.

The fenestration industry's specific concerns with the final report as presented for HRAC consideration November 13 include:
A) FEMA reports do not include necessary forensics data. FEMA Mitigation Assessment Team (MAT) **observations mentioned in the research report were largely based on limited visual observations and not actual forensics that enabled a true root cause analysis.** In fact, FEMA observations occurred considerably after FEMA's own time window, up to 110+ days after hurricanes. FEMA admitted in its reports that it was difficult to draw factual conclusions about which building envelope aspects did/did not perform.

B) Therefore, this line in the literature review report's Executive Summary should be revised to state "may" rather than "will."

> *"The FEMA MAT reports are based on surveys and visual observation that might lack detailed forensic analysis, however, they explicitly stated that testing standards for door and window assemblies do not appear to adequately help prevent water infiltration and that current testing standards* ***may*** ~~***will***~~ *need adjustment."*

C) Likewise, our industry requests that the following language in the Executive Summary also be stricken since it is inaccurate.

> *"Also, the typical 15% design pressure (DP) protocols listed in TAS 202, and the AAMA standards did not adequately assess building envelope rain intrusion, which was much lower than what a sliding glass door might face during actual hurricanes, making it insufficient for real-world conditions."*
>
> *"A set of recommendations were proposed based on these findings including improvement to the current standards in terms of wind and rainfall hazard modeling. More field data should be collected to understand the nature of WDR and how field data compare with the testing results from FIU and UF. Then, holistic testing of WDR impact on SGDs in a state-of-the-art testing facility (e.g., FIU Wall of Wind or the UF facility) is needed to compare the testing results with the collected field data. Modifications to the testing protocol in the industrial testing facilities used for product approvals can then be proposed to have comparable results to the holistic testing approach."*

In addition, **the fenestration industry recommends that the final report reflects the recommendations FGIA has previously shared with Principal Investigator Dr. Omar Nofal of FIU and Florida Department of Business and Professional Regulation (DBPR) Building Codes and Standards Office Technical Director Mo Madani.**

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Those final revisions are as follows:

1) Wind-driven rain research and the wind-driven rain maps developed through a study funded by the FBC with the University of Florida as the principal investigator together with Cornell University's Department of Meteorology provides real, factual data and should be used to better understand the exact conditions experienced in Florida for wind, and wind-driven rain to help specifiers better select the right products with the right levels of performance to meet specific geographical needs.

2) Current industry standards for SGDs work. There is no forensics evidence to the contrary. In fact, as pointed out to researchers and the TAC, **the North American Fenestration Standard (NAFS) already allows for a secondary designator to provide higher levels of water performance and testing of such in SGDs. However, the final report fails to recognize this fact.**

3) The report fails to mention the challenges of competing interests. Current building codes and federal regulations can often present direct conflicts. For example, to improve the water penetration resistance of SGDs requires higher sill heights (door thresholds) to resist water penetration requirements, set by code-adopted industry standards. However, higher sill heights conflict with requirements to meet the Americans with Disabilities Act (ADA) or other federal regulations for accessibility.

4) Florida's product approval system allows for subjecting mitigating devices to the same types of rigorous testing that building components already undergo before earning Florida product approval. FGIA suggests that any aftermarket mitigating devices need to be attached to the structure, as is now the case for exterior shutters, rather than attaching directly to SGDs, which can often void the SGD manufacturer's warranty.

5) Previous research conducted at FIU and the University of Florida involving SGDs in other studies did not include statistically significant sample sizes. FGIA expressed that valid concern previously and requested the actual number of samples tested be included in the final report for full transparency. In one case, only one SGD was tested at the U of F for another project. In another study, only four SGDs were tested at FIU. **Those extremely low numbers of SGDs tested for other projects are not sufficient for drawing conclusions or making recommendations.**

6) If further research projects are desired in Florida, focus on what is truly needed to fill essential information gaps. That could include gathering true forensics after hurricanes to provide the necessary objective data to help determine a root cause analysis of which building products performed and which did not and whether that was due to the lack of compliance with the current building codes, improper product specification for the wind-driven rain conditions in the geographical area, improper installation, lack of proper maintenance, etc. Or study the gap of what is currently specified and approved for installation in Florida's mid-rise residential buildings against the wind-driven rain study conducted at the U of F together with Cornell University, published in 2022.