

December 19, 2016

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RE: ENERGY STAR® for Exterior and Interior Storm Panels  
Additional Feedback in Response to EPA Comment Response Document 8/11/16

AAMA is offering additional and updated points from its membership concerning the proposed after-market storm panel promotion to ENERGY STAR status. AAMA's members primarily disagree with the EPA responses to our previously stated concerns, and the following content should supply more information for reconsideration.

**Consumer Safety** - We are especially concerned about consumer safety, which is the highest priority of our members. Many building code requirements and safety enhancements have been regulated in the prime window, doors, and skylights market, but not in the after-market storm product market. During discussions with code officials, we learned that they share our concerns.

It is imperative that EPA include safety requirements, especially concerning safety glazing and engineered wind resistant glazing specifications. Storm doors are required to have safety glazing, however other after-market storm products have no such requirements.

1. If EPA decides to make ENERGY STAR certification available to after-market storm products it cannot ignore the safety of American consumers. Relying on only a requirement that egress information be given to consumers by the after-market storm product manufacturers, is inadequate. It is essential that EPA refrain from promoting after-market storm products without safety as a first requirement.

2. EPA's comment responses also noted that non-energy performance related certification would not be considered. This appears to be inconsistent with the fact that EPA already calls for insulating glass (IG) certification in the prime window, door, and skylight ENERGY STAR program. If EPA would simply require NAFS certification, most concerns would be resolved. At a minimum, the EPA is urged to include requirements as shown in Attachment A, and as summarized below:

International Residential Code (2015 IRC) Section R308 indicates that safety glazing must be tested to ANSIZ97.1. Also, R308.1 is very clear about hazardous locations requiring safety glazing. Specifically, when:

1. The exposed area of an individual pane is larger than 9 square feet (0.836 m<sup>2</sup>);
2. The bottom edge of the glazing is less than 18 inches (457 mm) above the floor;
3. The top edge of the glazing is more than 36 inches, (914 mm) above the floor; and
4. One or more walking surfaces are within 36 inches (914 mm), measured horizontally and in a straight line, of the glazing.

For after-market storm panels that can be used on sloped products, if they are not specifically excluded from the proposed program, additional safety provisions are found in Section R308.6.2.

EPA is urged to delay the program “ENERGY STAR for Exterior and Interior Storm Panels” until the same safety glazing requirements for prime products are applied to after-market storm products. EPA should also protect the consumers directly by requiring ASTM E1300 compliance, and pressure testing for glazing deflection and stress, which both come with compliance with NAFS.

The Department of Energy Storm Window VPP Program, the precursor to this ENERGY STAR investigation, required NAFS certification as referenced in Attachment B. The EPA is urged to follow the guidance that DOE deemed a critical component.

### **Installed Performance -**

1. EPA is urged to reconsider their responses on comments related to solar heat gain control. The full energy impact of after-market storm panel installation over a prime product must be considered as a single unit and their combined performance evaluated in the proposed program. The addition of a second or third glazing product, especially with a Low-e coating, may dramatically lower visible transmittance (VT) and SHGC. The proposed after-market storm product program must not simply use NFRC glazing library data as if the after-market storm product is acting alone, as suggested by AERC. EPA must study this concern in more depth with internal and external after-market storm products, to determine how to ensure homeowners are not misled on SHGC benefits.

For example, our analysis shows that adding a Low-e after-market storm product over a dual clear prime window reduces the VT by 8 – 10% and reduces SHGC by approximately 14%. These types of overall performance reductions must be accounted for in the consumer advisory process.

2. EPA has cited the Vermont Storm promotional program run by D&R as relevant to its case for affordability and effectiveness. The core concern we have with this study is its flaws in not running a blind comparison with pocket replacement windows at the same time. This study simply notes that more after-market storm products can be sold if: (a) a 46% discount is applied, (b) extensive and expensive promotional efforts are run by state government that only share the benefits of after-market storm products, and (c) that if you have exclusive in-store sales personnel promoting subsidized after-market storm products. AAMA requests that this study, or other similar based studies not be included or considered unless they also are giving both after-market storm products and prime windows the same criteria. See attached Vermont white paper (Attachment C).

AAMA is concerned that the heat buildup damage to prime products was not given due consideration. Our members have seen temperatures in excess of 200 degrees F inside after-market storm products over prime windows, doors, and skylights. While a percentage of prime product framing can withstand this level of heat, some are not recommended above 165 degrees F. IG sealants, weather-stripping, sealants, coatings and gaskets are not designed to meet heat loads of this nature. The addition of after-market storm products, especially Low-e after-market storm products, will cause frequent premature failure of these components, and adversely affect actual performance.

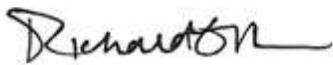
Our analysis using DOE Windows Thermal Analysis software shows a 24 degree F heat flow buildup in a simple calculation, as shown in the table below (This does not account for solar radiation effect, which will add to the total heat load):

Outside Air	Layer 1		Layer 2	
	Outer Surface	Inner Surface	Outer Surface	Inner Surface
180.0	192.2	192.8	204.7	204.6
189.0	197.9	198.5	209.3	209.1

EPA must not promote devices that will harm existing products that consumers already own. EPA must complete an extensive study of this concern and AAMA would offer our help in this test setup. EPA must do no harm to existing infrastructure due to promotion of after-market storm products that are effectively “greenhouses.”

Please consider the additional points raised in this letter concerning safety glazing, heat load, and consumer education. The EPA is encouraged to contact AAMA for a phone conference or a face-to-face meeting to continue the dialogue on the development of this program. Thank you for your continued approach to hear all the voices and concerns of industry and AAMA members.

Sincerely,



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Enclosures