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Via Electronic Submission

Subject: Comments in response to the ENERGY STAR® For Exterior and Interior Storm Panels – draft Analysis, Draft 1, Version 1.0 Program Requirements, and draft Consumer Checklist

The Window and Door Manufacturers Association (WDMA) appreciates this opportunity to comment on the Environmental Protection Agency's (EPA) progress in developing a new ENERGY STAR® product specification for exterior and interior storm panels.

As you know, WDMA's window, door, and skylight manufacturer members are charter partners in the long standing, highly successful, and highly credible ENERGY STAR® for Windows, Doors, and Skylights program. WDMA and our manufacturer members have worked hard with both EPA and the Department of Energy for nearly two decades to ensure the success and credibility of that program, and likewise, ensure the ENERGY STAR® brand does not fail in its promise to consumers. We therefore have a strong interest in the development of any new ENERGY STAR® program that will or could directly impact the ENERGY STAR® for Windows, Doors, and Skylights program.

Given the proposed new ENERGY STAR® product qualification program for exterior and interior storm panels will be a new ENERGY STAR® fenestration program, it will be directly associated with the ENERGY STAR® for Windows, Doors, and Skylights program. It is from that perspective and our long vested interest in ENERGY STAR® that we offer the following comments.

In general, while we appreciate and support EPA's desire to promote more energy efficient storm windows, we maintain that finalization and implementation of the proposed ENERGY STAR for Exterior and Interior Storm Windows is still premature. Among our overarching reasons are:

Lack of an established third party testing, rating and labeling certification program

Above all, we continue to assert that EPA should not finalize and implement a new program for storm windows until a third party testing, rating, and labeling certification program is firmly

established for storm windows. EPA has clearly indicated its agreement with the importance of this. In its response to Specification Framework Document Comment 16, regarding this concern, EPA stated that it, “agrees that an established third-party testing, rating, and labeling system will be necessary for the implementation of a specification for this product category.” In its response to Framework Document Comment 31 regarding the same, EPA states that it “agrees that third-party certification is a prerequisite for entry into the ENERGY STAR program; however, EPA can propose qualification criteria while the full details of a third-party certification program are still in development,” and that, “EPA will not finalize a specification until the certification process has also been finalized and stakeholders have had an opportunity to comment on EPA’s proposal in light of the certification requirements.”

While EPA is proposing certification provisions in the Draft 1, Version 1 Program Requirements, the context of EPA’s responses to the Specification Framework Document comments noted above is with respect to a third-party testing, rating, and labeling certification program, which is not included in the proposed specification. We believe such a program should be established and evaluated as discussed by EPA prior to the finalization and launch of the ENERGY STAR program for storm windows.

In addition, while the Attachments Energy Rating Council (AERC) is developing such a program and is nearing completion and launch, that has not yet occurred. Furthermore, once it does, as noted above, EPA has committed that it will not finalize a specification until such a certification process has been finalized and stakeholders have had an opportunity to comment on EPA’s proposal in light of the certification requirements. EPA should follow this course and not implement an ENERGY STAR storm window until a third-party certification program has been firmly established and not concurrently with the launch of a new testing, rating, and labeling certification program.

Lack of sufficient differentiation between low-e storm window products

Based upon a review of the Criteria Analysis Report and Draft 1 Version 1 Program Requirements for Exterior and Interior Storm Windows, the proposed program essentially only differentiates between low-e storm windows and clear storm windows.

If EPA is to have a meaningful ENERGY STAR program from storm windows, the criteria should be set more broadly to differentiate between low-e storm window products and not between low-e storm windows and clear storm windows. We do not believe the proposed single emissivity criteria of 0.22, a single solar transmittance value above or below 0.55, and single air leakage requirements for exterior products and interior products respectively, provides that differentiation. Instead it appears to simply capture nearly all of the existing low-e storm window market.

More specifically, in its discussion of the IGDB in the Criteria Analysis Report, EPA notes that clear glass has an emissivity of 0.84 and that the small number of specialty glazing types with

emissivity between 0.84 and 0.22 are not intended for storm window applications. This clearly indicates most if not all low-e storm window products will meet that requirement. Setting this performance metric at 0.22 is especially confusing given the energy savings analysis EPA has relied upon in its justification for the program is based on products with an emissivity of 0.15 (discussed below).

In its reasoning for allowing an emissivity of to 0.22, EPA states that the emissivity of 0.15 assumed in the underlying energy analysis would eliminate otherwise viable low-e options that are currently available in the market. However, there is no discussion or any indication of what those products are, the market share they represent or that EPA even considered setting the emissivity requirement somewhere between 0.22 and 0.15. We believe EPA should provide more background in this regard and reconsider the proposed emissivity criteria of 0.22 as it does not provide the meaningful product differentiation ENERGY STAR programs are intended to provide.

Need for an energy savings analysis based on proposed criteria

This is fundamental. All of the energy savings that EPA asserts can potentially be achieved by an ENERGY STAR storm window program appear to be based on PNNL's modeling using an emissivity of 0.15, not the far higher 0.22 EPA is proposing. It also appears those energy savings assumptions have not been adjusted accordingly. In that regard we can only conclude that the energy savings that can be realized by the proposed storm window program criteria are greatly overstated and should not serve as the basis for justifying the program from an energy savings perspective.

This is further exacerbated by also basing the energy savings assumptions on 10% market share for low-e storm windows. The PNNL estimate of 10% market share appears to be based upon an "informal industry estimate" from 2011, and EPA's own retail research which reports of 121 different storm window products EPA found in the Boston, MA; Miami, FL; Madison, WI; San Francisco, CA; Fort Collins, CO; and St. Louis, MO, markets, 88 of them were identified as low-e storm windows. Given those considerations, the 10% market share assumption for the current market is questionable.

EPA should conduct an energy savings analysis based on the criteria it is proposing, not something far less which may be misleading in the actual energy savings that can be assumed. In addition, EPA should further assess the market penetration of low-e storm windows based on more recent sales data to determine what the proper market share assumption should be for that analysis.

Consumer Confusion

WDMA is justifiably concerned that the addition of an ENERGY STAR storm window program will lead to consumer confusion between ENERGY STAR qualified windows and ENERGY STAR

qualified storm windows. In its response to Specification Framework Document Comment 42 raising that concern, EPA states that it “plans to communicate the differences between the two product categories on the ENERGY STAR website.” However, EPA has not yet provided any detail on what those plans are, what the explanations will be, or how they will be presented. This is a critical component that should also undergo public review and comment and be set in place prior to the implementation of a storm window program, to alleviate these concerns and ensure that consumer confusion is avoided.

In line with that action, EPA should also include the development of a label for storm window products that is more clearly distinct from ENERGY STAR windows other than that that has been proposed.

In addition to those comments above, we offer the following on the proposed Draft 1, Version Program Requirements and draft Consumer Checklist.

Draft 1 Version 1.0 Eligibility Criteria

Definitions - Performance Metrics

It is unclear why Visual Transmittance, U-factor, and SHGC are defined and included in the specification when they are not proposed performance metrics for ENERGY STAR storm window qualification. Including these terms in the specification implies that they are in fact performance metrics or that they are otherwise attributes considered as part of the ENERGY STAR qualification when they are not. Given these terms are not discussed or mentioned elsewhere in the document, they should be removed.

Air Leakage

WDMA supports the inclusion of air leakage requirements for any storm window program. As discussed in the framework and analysis documents, limits on permitted air leakage are critical to better thermal performance. We believe that including this metric is especially important to this program by providing additional distinguishing characteristics given the limited variability in the emissivity and solar transmittance metrics.

- With respect to testing, we agree that the most appropriate air leakage testing of storm windows may require a more specific test method using a calibrated base window and understand that AERC 1.2 has been developed for use in accordance with ASTM 283 to that end. However, that is a new test procedure and as such we are concerned EPA is relying upon a procedure that has yet to be fully established and implemented for actual certifications. Furthermore, while the new test method may be sound, there is little discussion in the Criteria Analysis Report regarding EPA’s assessment of the new procedure and why it is appropriate. EPA should provide a more detailed explanation in that regard. These concerns, again, are among the reasons why we believe finalization

and implementation of an ENERGY STAR program for storm windows is premature at this time.

- In addition, if AERC 1.2 is incorporated as the required air leakage test procedure for ENERGY STAR certification, the “Test Method Reference” in Table 4 of the Eligibility Criteria should be revised to state “AERC 1.2 in accordance with ASTM E283” rather than the other way around as currently included in the Draft 1 document so that it is consistent with the provisions of AERC 1.2, 5.5.
- With respect to Section 3, A., Air Leakage Requirements, in the draft Eligibility Criteria, there are no labeling requirements as there are for ENERGY STAR windows. Given the importance of air leakage and as a storm window program metric, EPA should include such labeling requirements consistent with those for ENERGY STAR windows.

Emissivity

See discussion above under Lack of sufficient differentiation between low-e storm panel products.

Installation instructions

- Given the importance of providing thermal breaks when installing storm windows over metal frame windows, the installation instructions should be clear in stating that thermal breaks are necessary. We recommend revising instruction item iv., as follows:

“Guidance on the need for thermal breaks and providing them when installed over metal frame primary windows and instructions for installing thermal breaks. (Inclusion of diagrams/pictures is preferred, but optional.)”

- It is possible that new storm windows will be replacing older storm windows over the same primary window. We therefore recommend inclusion of guidance on safe removal of old storm windows and disposal or recycling as follows:

“General guidance on safely removing old storm window products and proper disposal or recycling of products being removed.”

AERC as an alternative

See discussion above under Lack of an established third party rating, certification and labeling program.

Consumer Checklist

WDMA supports the inclusion of a “Consumer Checklist” as part of a storm window program. We agree it is an important means for consumers to better understand the product and what aspects should be taken into account when considering storm windows as an option. To that end, we believe the checklist can be improved by providing additional detail in the explanations and information.

Specifically, regarding the question, “Why are ENERGY STAR certified storm windows better”?, it should be made more clear the distinction is between storm window types and not windows in general. The question could for example be reworded as, “Why are ENERGY STAR certified storm windows a better choice when purchasing storm windows”?, or something similar.

Under “What else should I consider in my purchase decision”?:

Are your current windows still in good condition?

- After the first sentence add, “Windows in poor condition could make proper installation of storm windows impossible and reduce the energy efficiency benefits of them.”
- To the second sentence insert “ENERGY STAR” between “new” and “windows.”
- Add a new sentence pointing out that the installation of ENERGY STAR storm windows is not the same as replacing windows with ENERGY STAR windows, and that the same energy efficiency savings from storm windows versus replacing windows with ENERGY STAR windows can not be expected. In addition, provide more detailed guidance regarding that energy efficient improvements from the installation of storm windows will vary depending the characteristics of the existing windows.

Do your current windows open and close?

- Provide additional guidance clearly indicating that emergency escape and rescue openings are required by code and impeding them or decreasing the clear opening size could reduce safety and be in violation of buildings codes.

Conclusion

We support EPA’s promotion of low-e storm windows when storm windows are opted for. However, we believe that EPA can effectively achieve that objective through a more robust consumer education program rather than the development to an ENERGY STAR storm window program based on our comments above. At the very least, EPA should not finalize and implement such a program until a comprehensive third-party testing, rating, and labeling certification process specific to exterior and

interior storm panels is completed and well established, and, after EPA has conducted a more representative energy analysis and low-e storm window market share study to better justify the need.

Please let me know if you have any questions on any the matters raised.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey T. Inks". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jeffrey T. Inks
Vice President, Advocacy