Andersen CORPORATION

Submitted electronically

May 4, 2018

Doug Anderson
Program Manager
ENERGY STAR for Exterior and Interior Storm Windows
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Comments on *ENERGY STAR® Program Requirements for Exterior and Interior Storm Windows Draft 2 Version 1.0* and Related Documents

Dear Doug:

On behalf of the Andersen Corporation, we appreciate your invitation to comment on EPA's latest draft documents released April 4, 2018 related to the proposed ENERGY STAR storm windows program. As you know, Andersen consistently supports energy efficiency in general and specifically the mission of the ENERGY STAR program to promote energy efficient products that will benefit consumers and advance the national public interest. Our comments and recommendations are based on our technical and marketing experience related to energy efficiency in the window industry.

We have actively participated in this process to date and have already offered two sets of comprehensive comments:

- February 12, 2016 Comments on Framework Document
- August 31, 2017 Comments on ENERGY STAR Program Requirements for Exterior and Interior Storm Windows, Draft 1

We recognize that EPA has reviewed these comments, adopted or otherwise addressed some of our suggestions and recommendations, and rejected others. We appreciate your consideration of our comments and your willingness to adopt some of our recommendations. However, we continue to have some fundamental differences with your proposed resolution to the issues and we urge you to reconsider your position on other issues we have identified in these comments. Rather than reiterate all of these previous comments, we instead incorporate our two previous sets of comments by reference into this letter.

To supplement our previous comments, we have outlined below the more important issues and highlighted our recommendations and concerns in light of the latest version of the proposal and accompanying documents:

- We continue to see no compelling reason to create another ENERGY STAR program for storms. Given your admitted and stated goal of promoting low-e storms versus other types of storms, please reconsider whether a complex ENERGY STAR storms program is a necessary and valuable

program at all, and whether it will create unintended consequences and potentially mislead the public. Low-e storms could be effectively promoted to potential purchasers of storms with a well-designed educational program and without a new, expensive, regulatory program.

- While we appreciate the significant improvements that have been made in the proposal to provide some differentiation between ENERGY STAR windows and storms, if the storms program moves forward, we think that more can and should be done:
    - Promotional and educational materials for any program should go farther to make the fundamental differences clear to consumers so that no consumer will assume that an ENERGY STAR storm is the equivalent to an ENERGY STAR window.
    - As an example, the Consumer Checklist still seems to promote ENERGY STAR storms as a reasonable alternative to an ENERGY STAR window, despite the potentially widely disparate performance. Instead, we would take the opposite view and state that potential storm window purchasers should first give careful consideration to replacing the existing window with an ENERGY STAR certified window for long-term, reliable energy cost savings, comfort and other benefits. However, if they have decided to install storm windows instead, then they should install ENERGY STAR storms.
    - Here are some additional specific improvements for the Checklist:
        - In differentiating ENERGY STAR storm windows and ENERGY STAR windows, it should be explained that unlike ENERGY STAR windows (which provide consistent performance), the efficiency, occupant comfort and cost savings and other benefits delivered from an ENERGY STAR storm depends heavily on the existing window and its installation.
        - Given the wide range of performance and the potential for misunderstandings, we caution against developing annual energy savings performance estimates and making them available on the ENERGY STAR storms webpage.
        - We suggest that the guidance on using storms for noise reduction seems out of place and should be deleted. Noise reduction has nothing to do with energy efficiency and can be achieved with all storms, not just low-e storms. Also, we suggest deleting the comment that it is easier to install storms than replacement windows. Professional installation should be encouraged in both cases.
    - More differentiation can be achieved by eliminating the word “window” from the name of the program. If the label and name cannot be “ENERGY STAR Storm Panels”, how about simply “ENERGY STAR Storms” or “Storm Attachments”? We continue to believe that including “window” in the name will mislead or create confusion for some consumers.
    - Most importantly, there should be an express disclaimer on the ENERGY STAR storms label and in the promotional materials that the storms’ performance will not be equivalent to ENERGY STAR windows and, unlike an ENERGY STAR window, performance of storms will vary widely depending on the window over which the storm is installed.
- We are concerned that the criteria for ENERGY STAR storms are not sufficiently rigorous, particularly in comparison to the requirements for ENERGY STAR windows. Note that for ENERGY

STAR windows, for example, far more is required to meet the stringent criteria for the program than simply having a low-e coating. In this context, please consider the following performance metrics considerations and possible improvements:

- While we suggested eliminating the climate zones as an alternative, if there are to be two climate zones differentiated by solar transmission/control, shouldn't there be greater differentiation between the two zones than simply using a solar transmission of 0.55 as a cross-over point? What is the magic of this value? Is 0.54 solar transmittance really low solar gain and 0.56 solar transmittance really high solar gain?
    - The analysis to support this criteria as cost-effective does not even use 0.55 solar transmission, but instead uses a 0.459 storm to justify the proposed 0.55 criteria for the southern zone. If this storm is the basis for the criteria, why not set the maximum value for the southern zone at 0.46 or ideally much lower? After all, data in earlier EPA analyses suggested much lower solar transmittances were available in the market. Did EPA examine whether additional cost-effective energy savings could be obtained from lower SHGCs than 0.55 or even 0.46? Note that the SHGC of this 0.46 solar transmission storm product over a single pane wood window is 0.33. A 0.55 storm would have a much higher SHGC. In contrast, the comparable SHGC requirement for ENERGY STAR windows, 0.25, is far better than either product.
    - Similarly, the high solar transmission products studied are not even close to the 0.55 criteria – instead their solar transmission ranges from 0.69 to 0.77, with resulting SHGCs over single pane that range from 0.458 to 0.502. Again, if the northern zone is to be limited only to high solar transmission, why not use at least a 0.65 value as the minimum criteria?
- Likewise, on the emissivity criteria, while 0.22 may be cost-effective, is this enough to support a choice of this particular value? Is simple cost-effectiveness enough to "confirm" the criteria proposed? What if more than one value is cost-effective, as is claimed in this case? Why not set the requirement at the level that saves more energy (at least a lower emissivity in the northern climate)?
- If there is to be a program, the criteria should be developed so that the program will not be a barrier to future innovation and improved efficiency in products. One good example of the potential for improved storm performance is an insulating glass unit storm product which, if properly designed, could be more efficient. Unfortunately, no method has been established under the criteria to permit this type of product to comply. This idea should not be rejected simply because there is not a big market share for such product at the moment. If the program does not provide a means to recognize the benefits of the product, it is less likely that the product will ever be produced.
- Finally, better air leakage performance can be required now. The studies cited by EPA justify far lower values and we see no good reason not to require at least somewhat better values than those initially proposed. While we realize that the standard can be improved later, it would be better to do so now. Simply because improved air leakage is not a basis

used to justify the program is not a good reason not to require good performance. Again, the proposed air leakage maximum appears to be far worse than ENERGY STAR windows. Hopefully, at a minimum, EPA will require actual test performance values to be collected and reported so that it can re-evaluate this issue and strengthen the criteria early on.

- Comprehensive, rigorous, and effective third-party testing, certification and labeling is essential. The proposal takes a number of important steps in this regard, but we still have comments and questions on a few key components:
    - The certified label should also be required to show the actual certified performance values for the specific product; this can be important information for the consumer to distinguish between ENERGY STAR products. We see no good reason not to include this information. Informing the consumer so that he/she can make the best energy efficiency decisions should be an important objective of ENERGY STAR and the label.
    - Plant inspections should be a mandatory part of the certification process, particularly for this type of program. Otherwise, how can EPA, or more importantly, the public, have reasonable assurance that the products actually produced meet the performance that is claimed by the manufacturer? After-market verification testing, with the limited number of products verified and the limitations on the methodology, cannot provide sufficient assurance alone.
    - Once granted, does the certification (or components of it, such as test results) ever expire? Under what conditions?
    - The testing approach prescribed for the low-e characteristics is unclear. It does not seem that the specific storm product is actually being tested for its properties, but rather the test result is a comparison to a sample glass product to determine whether there is a match. Why was this approach chosen?

We recognize that this is the first set of criteria for a proposed new program, and as EPA has expressly acknowledged, it can revise and make the criteria more stringent in the future. Nonetheless, we believe that if there is to be a storms program, the failure to improve the criteria now (and make it more than just a low-e promotion) is a significant missed opportunity for the program.

We thank you again for the opportunity to provide our comments. We reserve the right to change and/or amplify our comments and position as we further consider and better understand the implications of the proposed program. Please let me know if you have any questions or comments.

Sincerely,

Mark T. Mikkelson

Director, Corporate Regulatory Affairs