



**PPG Industries, Inc.**

Glass Business and Development Center, 400 Guys Run Road, Cheswick, Pennsylvania 15024 USA  
Telephone: (412) 820-4926 Fax: (412) 826-2299 E-mail: pwbush@ppg.com

**Paul W. Bush**  
Manager, Technical Services  
Performance Glazing Products

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United States Environmental Protection Agency  
ENERGY STAR for Windows, Doors and Skylights Program  
1200 Pennsylvania Ave NW  
Washington, DC 20460

Subject: Stakeholder Comments from PPG on ENERGY STAR® for Windows Version 6.0.

Dear EPA Agency,

PPG Industries wishes to thank you for the opportunity to once again provide input to the proposed improvements to the ENERGY STAR for Windows, Doors, and Skylights Program. As you may know, PPG has long supported the development of energy conservation programs promoting the efficient use of glass and window products. The following comments on the ENERGY STAR for Windows, Doors and Skylights Version 6.0 Product Specification Framework Document are intended to assist in the continued development of a program which enhances energy efficiency, is good for the environment, offers consumers savings and improved comfort while enhancing product performance.

Pursuant to the guiding principles of ENERGY STAR we propose splitting the “**Northern**” **climate zone** so that the true “Northern” climate zone requires ENERGY STAR windows with a U-Value of 0.20 or less. The “Northern” climate zone would correspond to IECC zones 6-8. Given that:

- Implementation of the proposed ENERGY STAR changes in the fall of 2013 is two years away;
- ENERGY STAR market share is currently 71% or higher, (81% for windows);
- “EPA’s research has demonstrated that, based on currently available product, a significant reduction in U-Value is feasible”;
- Currently the ENERGY STAR “Northern” climate zone includes the IECC climate zones 5, 6, 7, & 8; which means the current “Northern” zone is significantly greater than 50% of the country;
- There are over 80,000 double-hung products in the NFRC Certified Product Directory with U-Factor’s less than or equal to 0.25. This is considerable when noting that current programs and codes do not require products to be better than 0.30 U-Factor.
- A U-factor of 0.20 or below can be achieved with several non-proprietary technologies.
- The “EPA is looking to establish criteria that recognize the highest-performing doubles and bring a greater number of triple pane windows into the mainstream”.

All of the above is compelling evidence that a U-factor of 0.20 be required for the ENERGY STAR “Northern” climate zone that comprises IECC zones 6, 7 & 8. IECC zone 5 would become the ENERGY STAR “North-Central” zone and the current ENERGY STAR “North-Central” zone would be renamed the “Central” zone. This is a simple, straight forward change in an area of the market that makes the most sense for energy efficiency in the “Northern” climate.

Stakeholder Proposed Version 6.0 ENERGY STAR Criteria for Windows		
Climate Zone	Maximum U-Factor	Maximum SHGC
Northern (IECC 6-8)	0.20	Any
North-Central (IECC 5)	0.25	Any
Central (IECC 4)	0.28	0.35
South-Central (IECC 3)	0.32	0.25
Southern (IECC 1 & 2)	0.40	0.20

Air leakage must be  $\leq 0.3$  cfm/ft<sup>2</sup>

Implementation of the proposed ENERGY STAR changes in the fall of 2013 is two years away. This seems like a lot of time for incremental improvements yet would be an appropriate amount of time for more substantial improvements in the requirements of the program. Improvements in the U-Factor of windows for the Northern most portions of the country are a positive action for all of the ENERGY STAR guiding principles including reduced energy consumption; reduced consumer energy bills and helping to protect the environment.

We agree with and support the other proposed requirements in the Version 6.0 Specification Framework Document as they represent an opportunity to raise the bar while at the same time maintaining product features and helping to facilitate reduced energy consumption and consumer savings:

- Support an **Air Leakage** Requirement – Like the EPA, PPG gets phone calls on air leakage too and from any point of view, especially the consumer’s point of view it makes sense that products focused on enhanced efficiency include an air leakage requirement.
  - In conjunction with an air leakage requirement we support allowing the **AAMA Gold label and WDMA label** in addition to or instead of listing air leakage on the NFRC temporary label.
- **Installation Instructions** – we support requiring that detailed installation instructions be available to consumers and installers online. Good installation practices benefit everyone. Perhaps this should go further to require the availability of installation training courses.
- **Northern Climate Zone:**
  - Split the Northern climate zone as described above and shown in the rendition of the ENERGY STAR map in Appendix A.
  - PPG is okay with eliminating the equivalent energy performance criteria.
- **Other ENERGY STAR Climate Zones:**
  - We support the U-Factor and SHGC improvements shown in the table above. We support the lower end of the original proposed ranges given the time table to implementation of the Version 6.0 specification.
- We support the **Door Criteria** as proposed including maintaining the classification of doors by glazing level and allowing the door specification to continue to apply to all climate zones.

- For **Skylights** we recommend splitting the Northern zone the same as we recommended for Windows above and offer the following proposed specification based on Skylight availability per the CPD and improved overall energy efficiency:

<b>Stakeholder Proposed Version 6.0 ENERGY STAR Criteria for Skylights</b>		
<b>Climate Zone</b>	<b>Maximum U-Factor to be set between</b>	<b>Maximum SHGC to be set between</b>
<b>Northern (IECC 6-8)</b>	<b>0.40-0.43</b>	<b>0.25-0.35</b>
<b>North-Central (IECC 5)</b>	<b>0.43-0.45</b>	<b>0.25-0.35</b>
<b>Central (IECC 4)</b>	<b>0.45-0.47</b>	<b>0.25-0.30</b>
<b>South-Central (IECC 3)</b>	<b>0.48-0.50</b>	<b>0.25</b>
<b>Southern (IECC 1 &amp; 2)</b>	<b>0.55-0.60</b>	<b>0.25</b>

Air leakage must be  $\leq 0.3$  cfm/ft<sup>2</sup>

We trust that these comments will be helpful and thank you in advance for due consideration of our input in the development of the final Version 6.0 Product Specification Framework Document. As always we look forward to continued involvement in your efforts.

Please let me know if I can be of further assistance, particularly if there are any questions on our proposed specification revisions.

Sincere regards,



Paul W. Bush  
 Manager, Technical Services  
 PPG Performance Glazings



**Glass Technology**  
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# Appendix A: Rendition of Proposed ENERGY STAR Climate Zone Map

