



September 28, 2012

Mr. Doug Anderson  
ENERGY STAR Program Manager  
U.S. Environmental Protection Agency

RE: ENERGY STAR for Doors, Windows and Skylights Specification Version 6.0 Draft 1 Feedback

Mr. Anderson,

This letter contains ProVia's response to ENERGY STAR's proposed Product Specification for Residential Windows, Doors, and Skylights, Draft 1 Version 6.0. Thank you for the opportunity to provide feedback concerning the proposed criteria prior to implementation. ProVia's comments and questions for clarification are below by section.

#### Product Types

What dimensions were used to calculate the door glazing area percentages? ProVia gets slightly different glazing area percentages than what are listed in the ENERGY STAR draft criteria glossary. ProVia's calculations are based on the swinging door model size listed in NFRC 100-2010<sub>[E0A6]</sub> Table 4-3 and the door glazing areas in Table 5-1.

The door glazing area should be expressed in square inches or millimeters rather than a percentage to be consistent with NFRC's designation of lite sizes. An 8'0" door with 29.8% glazing area would be rated as a 3/4 lite per NFRC 100 Table 5-1 but would fall under ENERGY STAR's 1/2 lite criteria. This will create confusion.

NFRC's door task group submitted a ballot to change the door glazing area in NFRC 100 Table 5-1. This change will likely be approved at NFRC's 2012 Fall Membership Meeting in October. The 1/2 lite glazing area referenced in the ENERGY STAR Draft Criteria will change to 901 in<sup>2</sup>.

#### Product Subcategories

ProVia is still confused whether sidelites and transoms are included in ENERGY STAR. NFRC 100 Table 4-3 lists sidelites and transoms as individual product types. The sidelites and transoms become swinging doors and fixed windows only after they exceed a specified dimension (see Table 4-3 footnotes). Does that mean standard sized sidelites and transoms are not included in ENERGY STAR but oversized sidelites and transoms are? Please clarify.

#### Qualification Criteria – Door SHGC

ProVia recommends making the door SHGC requirement less stringent in ENERGY STAR's Northern climate zone. LBNL's presentation at the stakeholder's meeting stated, "Savings due to changed SHGC



over existing Energy Star are small in most instances.” A high SHGC is desirable in northern climates, yet doors are required to have a very low SHGC. This contradiction makes doors more expensive and increases a home’s net energy consumption in northern climate zones, the opposite of ENERGY STAR’s objectives.

Low SHGC doors in Northern climate zones also create a visual appearance problem. To meet the SHGC requirement glazed doors must use a triple silver low-e glass in northern climates. Windows, having no SHGC requirement in the north, typically use a double silver low-e glass. When placed on the same wall the triple silver low-e glass is noticeably darker and more reflective than the double silver low-e glass.

ProVia compared the optical properties of PPG’s double and triple silver low-e coated glass using Lawrence Berkley National Laboratory’s (LBNL) Optics 5 and Window 6 software. The center of glass visible transmittance and front of glass reflection for PPG’s double silver low-e, Solarban 60, is 0.80 and 0.06 respectively. PPG’s triple silver, Solarban 70XL, low-e has a visible transmittance of 0.71 and front of glass reflection of 0.08, yielding an 11% reduction in visible light transmittance and a 33% increase in visible reflectance. The Optics 5 spectrum analysis shown in Figure 1 illustrates the differences in visible light transmission, color and reflectance between the two glass types. Glass samples have been mailed to D&R International attention Emily Zachery for your physical review.

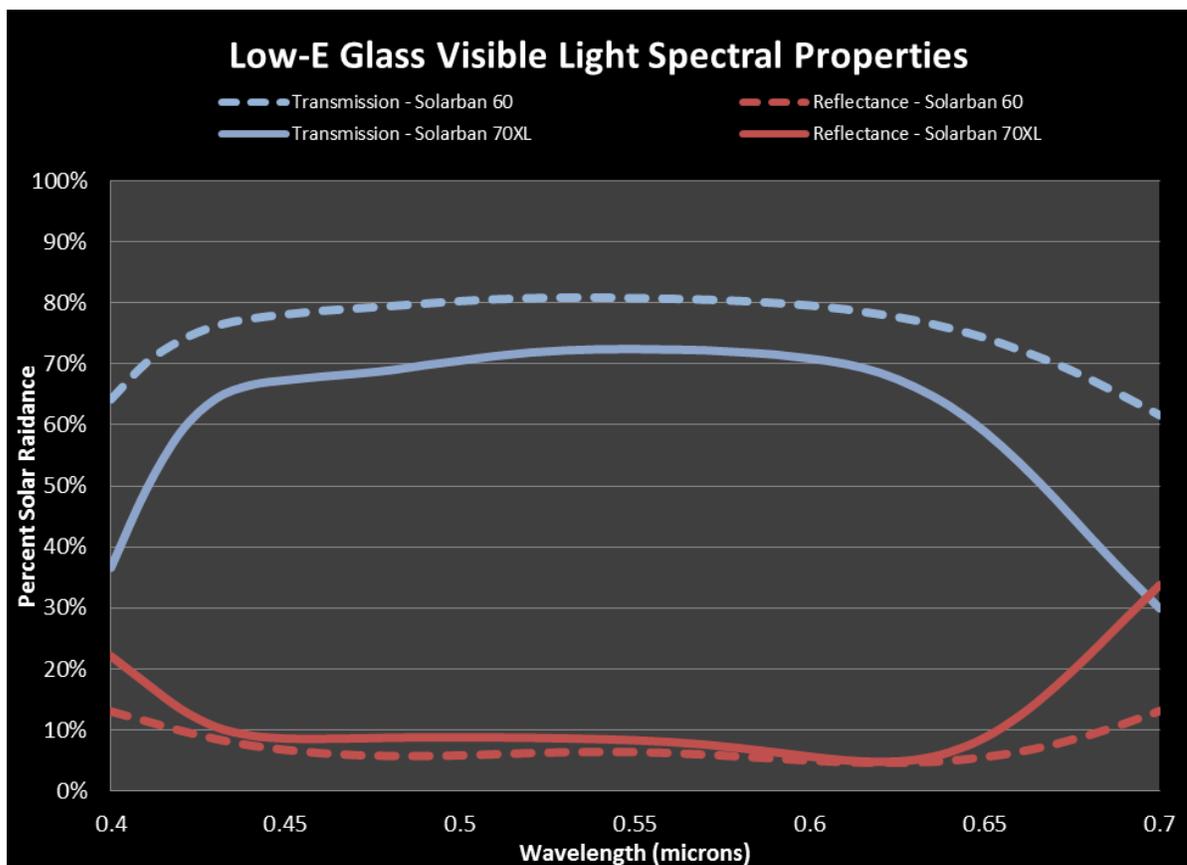


Figure 1. Visible light spectral properties for double and triple silver coat low-e glass.



The door SHGC requirement must be properly balanced between the Southern and Northern climate zones considering doors use a one size fits all approach for the SHGC criteria. ProVia recommends setting the door SHGC requirement at 0.30, or splitting the SHGC requirement for doors into two climate zones.

#### Qualification Criteria – Door U-factor

The door ½ lite and full lite proposed u-factor criteria are not proportional. A full lite will qualify for ENERGY STAR but a ½ lite will not qualify for some glass options all things else equal. The proposed spread between a ½ lite and full lite u-factor criteria is 0.07. ProVia analyzed our three most common door styles and five most common glass options. The average u-factor spread between ½ lites and full lites was 0.039. (Note: The u-factor spread between ½ lites and full lites is largely dependent on the glass option. ProVia's clear glass has a spread of 0.07. With ultra-high performance glass the u-factor spread is only 0.01. The key point is glass options that have u-factors near the ENERGY STAR criteria have a u-factor spread around 0.04.)

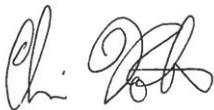
ProVia's recommends setting the door u-factor requirement for ½ lites at 0.26 and full lites at 0.30 to make the criteria proportional. Try explaining to a consumer why a full lite door is ENERGY STAR qualified but the ½ lite version of the same door and glass type does not qualify.

#### Installation Instructions

Item 4 in the installation instructions requires detailed flashing instructions. ProVia's products are used primarily in the replacement market. Many replacement applications do not allow an opening to be flashed. ProVia recommends the EPA make flashing a recommendation, not a requirement, since there are many installation applications where flashing is not possible.

Again, thank you for the opportunity to provide feedback to ENERGY STAR. ProVia greatly appreciates their partnership with ENERGY STAR and looks forward to working with you in the future.

Best Regards,



Chris Nolt  
ProVia Products