



Plastics Division

September 30, 2019

ENERGY STAR  
U.S. Environmental Protection Agency (EPA)  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Delivered Via Email To: [windows@energystar.gov](mailto:windows@energystar.gov)

**Re: ENERGY STAR® Windows, Doors, and Skylights Version 7.0 Specification Discussion Guide**

Dear U.S. EPA ENERGY STAR:

Thank you for the opportunity to comment on the ENERGY STAR® Windows, Doors, and Skylights Version 7.0 Specification Discussion Guide.

The American Chemistry Council (ACC) is a national trade association representing chemicals and plastics manufacturers in the United States, providing over 542,000 direct jobs. Our members are committed to the safety of their products and to the protection of public health. Over 96% of all manufactured goods are directly touched by the business of chemistry, making this industry an essential part of every facet of our nation's economy. The ACC's Plastic Glazing Coalition (PGC) promotes and defends plastic glazing in building codes and green building initiatives through advocacy, outreach and research. The PGC provides an industry voice on codes and standards and provides officials with credible information on plastic glazing products.

The ENERGY STAR® Windows, Doors, and Skylights Version 7.0 Specification Discussion Guide poses a question of whether the skylight ratings should be simplified or sunset. At the heart of this question is the complexity of energy analysis for skylights.

The Plastic Glazing Coalition is working on establishing a National Fenestration Rating Council (NFRC) rating for non-planar (domed) skylights that will resolve some of this difficulty. The NFRC Board has approved a project concept and directed development of a draft request-for-proposals. While we do not anticipate this work being completed in time for EPA to use the new research for this iteration of the ENERGY STAR ratings, we feel it is important to highlight that we anticipate that the NFRC project will have new software tools to ease analytical challenges and enable more skylight products to receive specific U-factor and SHGC values.

Skylights are becoming a more important component of passive design for the provision of daylighting features in today's architecture, providing energy efficiency through the reduction in artificial lighting. While plastic skylights using domed shapes



are common in the market, currently manufacturers must qualify products for energy ratings through individual performance tests without the opportunity to model using NFRC simulation. In lieu of testing for each skylight based on its construction and size, default values are available to establish code compliance, but the defaults are necessarily conservative, and often punitive. The lack of a simulation method creates a disadvantage in the marketplace for plastic domed skylights due to the cost of testing to develop accurate energy ratings.

Past NFRC-funded research resulted in the development of heat transfer algorithms for non-planar skylights (Fomichev and Curcija 2007). These algorithms are necessary to calculate U-factor and SHGC. The new project being considered by NFRC is to complete development of NFRC simulation methods for calculating solar-optical performance of non-planar systems, implement the necessary thermal and solar optical methodology in NFRC energy rating software tools THERM and WINDOW to validate the new simulation methodology and tools by measuring U-factors and SHGC of a selection of non-planar systems, and to update NFRC 100 and 200 with the additional simulation options.

With this work on the horizon, we believe it is premature for EPA to sunset the skylight rating.

Thank you for your time and consideration.

Sincerely,

David Mann

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