



November 18, 2011

Mr. Doug Anderson  
Environmental Protection Agency

**Re: ENERGY STAR for Windows, Doors, and Skylights – Version 6.0 Proposed Product Specifications**

The Architectural Manufacturers Association (AAMA) welcomes this opportunity to comment on the ENERGY STAR 6.0 Product Specification Framework.

AAMA and its members encourage Americans to seek out ENERGY STAR-qualified windows and doors as they build new homes or replace windows, doors and skylights in existing ones. We believe that ENERGY STAR can and will help conserve valuable natural resources. That's why AAMA stresses that a reasonable approach and ample timeline is essential to the success of ENERGY STAR adoption by consumers and manufacturers. Product manufacturers and their suppliers would face a significant investment in time and resources to adapt their manufacturing equipment and processes, while balancing the all-important need to preserve valuable manufacturing jobs in the U.S.

While the following responses answer questions specifically posed during this review process, AAMA strongly suggests that the EPA carefully examine and consider the fragile U.S. economy in advance of imposing criteria that will require capital investments that neither homeowners nor manufacturers can bear without further risking the loss of American jobs.

The aggressive tentative timeline, which provides only one year for manufacturers to meet September, 2012 imposed program requirements, is neither reasonable nor feasible and will force companies to choose equipment retrofitting over employee retention. AAMA submits that the progress of developing the 6.0 version criteria proceed with an open-ended implementation date of 2015 and revisited at that time to ensure a sustained relief in the housing industry and improved economic conditions. The results of implementing more rigorous ENERGY STAR criteria should not outweigh manufacturers' and homeowners' capacity to absorb the additional costs of program enhancements.

The goal of AAMA members, like the goal of the EPA and the current Administration, is to provide energy-efficient, affordable products to consumers and ultimately reduce U.S. dependence on foreign oil.

The following feedback is based on both AAMA's individual member comments and the position taken by AAMA as an association representative of the fenestration industry as a whole.

- **Structural Requirements:** AAMA supports the requirement of full NAFS certification for windows and unit skylights and strongly believes that the current network of laboratories are fully-equipped and capable of any additional testing.

Additionally, AAMA supports NAFS / NFRC 400 requirements for doors. However, we question the validity of EPA's statement that "less than a quarter of ENERGY STAR's partnership base currently participates in NAFS certification."

According to the *2010/2011 U.S. National Statistical Review and Forecast* report prepared by Ducker Research Company and published by AAMA and WDMA, the entire residential window market size in 2010 was 41.6 million units. Within the AAMA Certification Program alone, 26.2 million NAFS labels were sold in 2010. Even after estimated reductions are made for labels sold for non-residential products, and especially after adding NAFS certification data from WDMA, NAMI and Keystone; it seems to be statistically impossible for less than a majority of the residential window units available in the marketplace to be certified to NAFS. With 81% ENERGY STAR penetration in the residential window market, it seemingly also would be mathematically improbable that less than a quarter of ENERGY STAR's partnership base currently participates in NAFS certification.

- **RESFEN 6:** Skylights/TDDs: There is industry concern that RESFEN 6 tool does not completely model the energy effects of toplighting. If the tool was used for justification of the skylight/TDD values proposed, AAMA requests that an opportunity to analyze the data that EPA reviewed to support those determinations.
- **Products Installed at High-Altitude:** AAMA reiterates its 2009 request to allow a U-factor stretch of 0.03 for high altitude applications (where a breather tube may negate the thermal performance improvements provided by inert gas fill). U.S population statistics indicate that 21 million people (a significant market share) reside in high-altitude areas. It is imperative to recognize that without an ENERGY STAR allowance, these products will not be available to the consumer.
- **Impact-Resistant Products:** Windborne debris regions now extend from New England to the Gulf Coast and continue to grow and encompass more single-family homes. Additionally, high-performance, impact-resistant products are becoming the choice when fenestration purchases are based on security and safety of non-coastal property in areas prone to tornados. AAMA requests that EPA reconsider its decision to exclude development of separate criteria for this emerging and necessary product line.
- **Daylighting:** AAMA supports the EPA's determination not to include Visible Transmittance (VT) in version 6.0. However, it is important that EPA retain VT on the list for future consideration as the industry develops credible criteria.
- **Life Cycle Analysis:** AAMA agrees that additional research is needed in advance of Life Cycle Analysis being introduced to the ENERGY STAR program. It is important that the EPA understand that AAMA and the industry fully support the development of an accurate and useful LCA method and that AAMA currently participates in the development of an LCA that supports those goals.
- **Tubular Daylighting Devices (TDDs):** AAMA fully supports the comments submitted by member company, VELUX America.
- **Air Leakage:** Air leakage is included within the NAFS Standard, which qualifies AAMA's support of NAFS certification. Historically, NAFS has been referenced within the IECC since inception and within the Model Energy Code, the IECC predecessor. The state of California has relied on this same certification for more than 20 years.

Any air leakage qualification data should be indicated as pass/fail only.

AAMA only supports an air leakage requirement with an accompanying operating force prerequisite.

- **Installation Instructions:** As the developer of InstallationMasters™, the nation's foremost window and door installation instruction and certification program, AAMA fully supports the inclusion of product installation instructions.

As proper installation is essential to optimum product performance, AAMA is in support of providing printed installation instructions, preferably with the inclusion of online availability. However, recognizing the variations in installation practices by region and/or product, AAMA believes that it should be left to each individual manufacturer how to best convey installation instructions.

### Proposed Revisions to Product Criteria

AAMA members fully support ENERGY STAR performance criteria for windows, doors, and skylights; however, it is imperative that criteria values are affordable and provide both homeowners and manufacturers with a reasonable return on investment. .

The following tables include manufacturer recommended U-Factor and SHGC levels based on production costs versus homeowners anticipated Return on Investment (ROI) in energy savings.

### Window Criteria

Climate Zone	Current ES Criteria Maximum U-Factor	Proposed ES 6.0 Criteria Maximum U-Factor to be set between	AAMA Recommendation	Current ES Criteria Maximum SHGC	Proposed ES 6.0 Criteria Maximum SHGC to be set between	AAMA Recommendation
Northern (IECC 5-8)	0.30	0.25-0.27	0.30	Any	Any	Any
North Central (IECC 4)	0.32	0.28-0.30	0.30	0.40	0.35-0.40	0.40
South-Central (IECC 3)	0.35	0.30-0.32	0.32	0.30	0.25	0.25
Southern (IECC 1& 2)	0.60	0.40	* Information on Proposed U-factor development needed	0.27	0.20-0.25	No lower than 0.25

\*AAMA requests that EPA provide the data used in the development of the 0.40 U-Factor proposed for the Southern Zone. There are some indications that establishing U-factors lower than 0.6 in the Southern climate zones do not significantly contribute to energy savings, and may in fact be detrimental due to heat trapped in the home during times of seasonal transition from the heating to cooling mode.

### Door Criteria

Doors do not follow climate zones like windows. A higher SHGC should be permitted for glass doors (> 50% glazing) so that homeowners can achieve uniformity in fenestration throughout the residence. Additionally, exterior overhangs are frequently used to shade this fenestration element.

Glazing Level	Current ES Maximum U-Factor	*Proposed Version 6.0 Maximum U-Factor to be set between	AAMA Recommendation	Current ES Maximum SHGC	Proposed Version 6.0 Maximum SHGC	AAMA Recommendation
Opaque	0.21	0.15-0.19	0.19	No Rating	No Rating	No Rating
≤ 1/2 – Lite	0.27	0.22-0.25	0.25	0.30	0.25	0.25
> 1/2-Lite	0.32	0.27-0.30	0.30	0.30	0.25	0.30

\*Air leakage for sliding doors must be ≤0.3 cfm/ft<sup>2</sup>

\*Air leakage for swinging doors must be ≤0.5 cfm/ft<sup>2</sup>

## Skylight Criteria

	Current ES Criteria	Proposed 6.0 Version	AAMA Recommendation	Current ES Criteria	Proposed 6.0 Version	AAMA Recommendation
<b>Climate Zone</b>	Maximum U-Factor	Maximum U-Factor to be set between	Maximum U-Factor	Maximum SHGC	Maximum SHGC to be set between	Maximum U-Factor
<b>Northern</b>	0.55	0.43-0.45	0.47-0.52	Any	0.25-0.35	Any
<b>North-Central</b>	0.55	0.45-0.47	0.52-0.55	0.40	0.25-0.30	0.35-0.40
<b>South-Central</b>	0.57	0.48-0.50	0.55-0.58	0.30	0.25	0.30
<b>Southern</b>	0.70	0.55-0.60	0.58-0.65	0.30	0.25	0.30

AAMA believes that for the ENERGY STAR program to maintain its enormous brand recognition and continue to move products to be more energy efficient, new criteria must be both challenging and attainable. If manufacturers or homeowners are burdened with costs that neither can afford, energy efficiency suffers and utilities will be forced to bring on more generating capacity.

At a time when consumers are scrutinizing their purchases and their investments in their home more carefully, it is crucial that the EPA remain focused on the impact of any revisions that may add significant product costs and force homeowners to delay home energy-efficiency upgrades.

Thank you.



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