

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



OFFICE OF
AIR AND RADIATION

July 7, 2021

Dear ENERGY STAR® Residential Window, Door, and Skylight Partner or Other Interested Stakeholder,

With this letter, the U.S. Environmental Protection Agency (EPA) is launching a revision of the ENERGY STAR specification for residential windows, doors, and skylights (WDS). We welcome your input on the [ENERGY STAR Version 7.0 Residential Window, Door, and Skylight Draft 1 Specification](#). Stakeholders are encouraged to provide comments on this draft specification no later than August 20, 2021. EPA will host a **stakeholder webinar** regarding this Draft 1 Specification on **July 27, 2021 from 1 – 4 PM Eastern Time**. Please register at this [web site](#) if you plan on attending. (See below for full web address).

This Draft 1 proposal is informed by extensive advance work, done in collaboration with partners. Since 2014, EPA has been working to expand data sets and developing new and updated analysis tools to help determine the performance and payback of improved fenestration products. In December of 2014, EPA held a stakeholder meeting to discuss updating the analysis approach used for Version 6. In January of 2017, EPA released a white paper on analyzing technology pathways and a subsequent data set to demonstrate the approach. In September of 2019, EPA released a discussion guide asking for input from stakeholders on numerous topics related to energy analysis, product cost data, climate zones, and payback to name a few. In each of these releases, EPA offered analysis, data, and provided opportunities for stakeholders to collaborate by providing input. All the background documents and comments can be found on the [ENERGY STAR WDS Partner](#) website.

The current ENERGY STAR criteria for residential WDS went into effect on January 1, 2016, and the market share of products meeting these criteria has grown significantly to about 86% for windows, 80% for hinged doors, 84% for patio doors, and 72% for skylights. Considering this high market share and the availability of products in the market that exceed the current ENERGY STAR criteria, stronger requirements are necessary to provide meaningful differentiation of highly efficient residential WDS for consumers.

With this revision, EPA seeks to recognize advances in energy efficiency performance for residential WDS. Key changes in Draft 1 are highlighted below, and the rationale for these proposed changes are explained in the Criteria Analysis Report and summarized in note boxes throughout the specification. Four (4) [data packages](#) that provide EPA's datasets associated with the Draft 1 analysis accompanies this announcement as well.

Here is a summary of the criteria changes:

- **Windows:** EPA proposes lower U-factors in all 4 ENERGY STAR climate zones. EPA also proposes lower SHGC levels in the 2 most Southern Climates zones and setting a minimum SHGC of ≥ 0.17 in the Northern zone.

Energy Efficiency Prescriptive Requirements for Windows		
Climate Zone	U-Factor ¹	SHGC ²
Northern	≤ 0.22	≥ 0.17
North-Central	≤ 0.24	≤ 0.40
South-Central	≤ 0.28	≤ 0.23
Southern	≤ 0.32	≤ 0.23

¹ Btu/h ft²·°F

² Solar Heat Gain Coefficient

EPA also proposes 4 equivalent energy performance levels for the Northern Zone.

Equivalent Energy Performance for Windows		
Climate Zone	U-Factor ¹	SHGC ²
Northern	0.23	≥ 0.35
	0.24	≥ 0.40
	0.25	≥ 0.45
	0.26	≥ 0.50

¹ Btu/h ft²·°F

² Solar Heat Gain Coefficient

- **Sliding Glass Doors:** EPA proposes changing the criteria for Sliding Doors to have the same criteria as windows.
- **Swinging Doors:** EPA proposes lowering the U-factor for both > half-lite doors and ≤ half-lite doors. The SHGC levels are also lowered for all ≤1/2-lite doors and >1/2-lite doors in the Southern parts of the U.S.

Energy Efficiency Requirements for Swinging Doors		
Glazing Level	U-Factor ¹	SHGC ²
Opaque	≤ 0.17	No Rating
≤ ½-Lite	≤ 0.23	≤ 0.23
> ½-Lite	≤ 0.28	Northern and North-Central ≤ 0.40
		South-Central and Southern ≤ 0.23

¹ Btu/h ft²·°F

² Solar Heat Gain Coefficient

- **Skylights and Tubular Daylighting Devices (TDDs):** EPA proposed two changes to the criteria. First, to simplify the criteria by reducing the number of climate zones for skylights and TDDs to two by combining the North-central, South-central, and Southern zones into a single zone. Second, to improve performance of the products by reducing the U-factor in all zones and reducing the SHCG of the combined Southern zone.

Energy Efficiency Requirements for Skylights		
Climate Zone	U-Factor ¹	SHGC ²
Northern	≤ 0.45	Any
North-Central	≤ 0.50	≤ 0.25
South-Central		
Southern		

¹ Btu/h ft²·°F

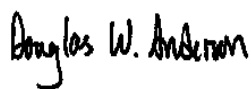
² Solar Heat Gain Coefficient

Schedule:

Stakeholder engagement is vital to the success of the ENERGY STAR program, and EPA looks forward to collaborating with stakeholders to develop the Version 7.0 specification. Stakeholders are requested to provide **comments** on the Version 7.0 Draft 1 Specification **no later than August 20th, 2021**. Please send comments via e-mail to windows@energystar.gov. All comments received will be posted to the ENERGY STAR Residential Window, Door, and Skylight Version 7.0 Specification Development webpage.

Please contact windows@energystar.gov, myself at anderson.doug@epa.gov, or Brian Booher at BBooher@drintl.com with any questions or concerns about the draft specification. Thank you for your continued support of the ENERGY STAR program.

Sincerely,



Douglas W. Anderson
Product Manager for Windows, Doors, and Skylights
ENERGY STAR Labeled Products

Enclosures:

Response to Comments (Part 2) on Version 7.0 Specification Discussion Guide

<https://energystar.gov/sites/default/files/asset/document/Response%20to%20Comments%20%28Part%20%29%20on%20Version%207.0%20Specification%20Discussion%20Guide%20-%20July%202021.pdf>

ENERGY STAR Version 7.0 Residential Windows, Doors, and Skylights Draft 1 Specification

https://energystar.gov/sites/default/files/asset/document/ES_Residential_WDS_Draft%201_V7_Spec.pdf

ENERGY STAR Version 7.0 Residential Windows, Doors, and Skylights Draft 1 Criteria Analysis Report

https://energystar.gov/sites/default/files/asset/document/ES_Residential_WDS_Draft%201_Criteria%20Analysis%20Report.pdf

Draft 1 Data Package 1 – Product Cost Data Spreadsheet

https://energystar.gov/sites/default/files/asset/document/WDS_V7_Draft%201%20Data1%20-%20Product%20Cost.xlsx

Draft 1 Data Package 2a – Certified Product Directory Pathways Analysis – Windows

https://energystar.gov/sites/default/files/asset/document/WDS_V7_Draft%201%20Data2a%20-%20CPD%20Analysis%20-%20Windows.xlsx

Draft 1 Data Package 2b – Certified Product Directory Pathways Analysis – Doors and Skylights

https://energystar.gov/sites/default/files/asset/document/WDS_V7_Draft%201%20Data2b%20-%20CPD%20Analysis%20-%20Doors%20and%20Skylights.xlsx

Draft 1 Data Package 3a – Results and Assumptions

https://energystar.gov/sites/default/files/asset/document/WDS_V7_Draft%201%20Data3a%20-%20Results%20and%20Assumptions.xlsx

Draft 1 Data Package 3b – North and North Central Savings Data

https://energystar.gov/sites/default/files/asset/document/WDS_V7_Draft%201%20Data3b%20-%20North%20and%20North%20Central.xlsx

Draft 1 Data Package 3b – South and South Central Savings Data

https://energystar.gov/sites/default/files/asset/document/WDS_V7_Draft%201%20Data3c%20-%20South%20and%20South%20Central.xlsx

Draft 1 Data Package 4 – Climate Zone Adjustments and Updated Zone Map

https://energystar.gov/sites/default/files/asset/document/WDS_V7_Draft%201%20Data4%20-%20Updated%20Climate%20Zones%20and%20Map.xlsx

Links:

Stakeholder Webinar Registration: <https://attendee.gotowebinar.com/register/6029160332345826320>

Residential Windows, Doors, and Skylights Partner Page (see “In Development” tab):

https://www.energystar.gov/products/building_products/residential_windows_doors_and_skylights/partners