

February 10, 2013

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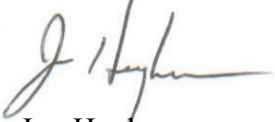
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Re: Comments of AGC Glass Company North America to Energy Star for Windows, Doors, and Skylights Version 6.0 Draft 2 Criteria

Dear Doug and Emily:

Please accept the following letter and appendix “A” & “B” as AGC Glass Company North America’s comments to the Energy Star Window criteria.

Sincerely,



Jon Hughes
Director Marketing & Programs

C.C Christopher F. Correnti
Vice President, General Counsel and Secretary

**Comments of AGC Glass Company North America to
Energy Star for Windows, Doors, and Skylights
Version 6.0 Draft 2 Criteria**

AGC Glass Company North America (“AGC”) submits the following comments to the Energy Star for Windows, Doors, and Skylights (“Energy Star” or “U.S. Energy Star Program”) Version 6.0 Draft 2 Criteria dated January 7, 2013 (“Draft 2 Criteria”).

A. EPA Responsiveness

AGC appreciates EPA’s responsiveness to stakeholder concerns expressed in response to the Draft 1 Criteria.

1. Doors

EPA responded positively to comments by the Association of Millwork Distributors, Milgard Windows & Doors, Pella Corporation and ProVia Products asking for changes in the ½ lite door U-factor criteria (changed from ≤ 0.23 to ≤ 0.25) and the full lite door SHGC criteria in the northern zone (changed to ≤ 0.40), where the ≤ 0.25 SHGC criteria was causing color mismatches between the low SHGC door glazing and more energy efficient high SHGC windows in northern homes.

AGC believes that technically, full lite doors should be subject to the same Energy Star criteria as windows. This will be more fully developed in section C. below.

2. Northern Trade-offs

EPA also responded positively to comments submitted by AGC, NSG/Pilkington Group North America, Inc. (“PNA”), the Consortium for Energy Efficiency (“CEE”) and Mathews Brothers Company suggesting that the number of trade-offs in the northern climate zone be increased (changed from a single trade-off to three).

3. Minimum Northern SHGC

EPA declined to include a minimum SHGC in the Draft 2 Criteria for the northern zone. Despite its strong belief that a minimum SHGC in the north would be cost effective and result in a significant increase in the aggregate energy that would be saved in the north, AGC will support EPA’s decision not to include a minimum SHGC in Energy Star Version 6.0; however, AGC will pursue the energy savings associated with a minimum SHGC in the next version of Energy Star criteria.

4. Northern U-factor

AGC, PNA, CEE, PPG Industries, Inc. (“PPG”), the Aluminum Extruders Council, and EverSealed Windows all sought a more stringent U-factor than proposed in the Draft 1 Criteria for the northern zone. Several stakeholders, including AGC, PNA and PPG, asked for the northern U-factor to be reduced from 0.27 to 0.25. Nevertheless, EPA declined to change the northern prescriptive U-factor from the 0.27 U-factor proposed in the Draft 1 Criteria.

B. The Northern Zone U-factor Should be Lowered to 0.25

AGC urges EPA to reconsider its decision not to reduce the northern U-factor to 0.25. There are a number of reasons that compel the conclusion that the northern zone U-factor should be 0.25.

1. Reducing U-factor to 0.25 Will Ensure a Real U-factor Improvement in the North

Setting the U-factor at 0.27 does **not** ensure any real improvement to U-factor in the northern zone. In that regard, NFRC’s draft Independent Verification Program, NFRC 713-2013 (“Verification Program”), establishes a 10% U-factor performance tolerance for northern windows.¹ This means that, under the Verification Program, an Energy Star labeled window bearing an NFRC label with a 0.27 U-factor would successfully pass the U-factor verification test with a U-factor of 0.30. Since the current Version 5.0 Energy Star northern prescriptive criteria is 0.30, reducing the northern U-factor to 0.27 does **not** ensure any real improvement in the Version 6.0 northern U-factor criteria.

Reducing the northern U-factor to 0.25 **does** ensure that there will be a real U-factor improvement in the north over Energy Star Version 5. Even taking the 10% northern U-factor performance tolerance into account, an Energy Star labeled window with an NFRC label would only successfully pass the U-factor verification if its tested U-factor was ≤ 0.28 .

The northern prescriptive U-factor should be reduced to 0.25 in order to ensure that there is a real U-factor improvement in the north. Changing it from the 0.30 specified in Version 5 to 0.27 is a mere 10% reduction that does nothing more than match the U-factor tolerance for northern windows under the Verification Program. Such a small reduction is, simply, too small to assure that any **real** improvement to northern U-factor will actually be made.

2. Adding Trade-offs to a 0.25 Prescriptive U-factor Provides Maximum Flexibility from which to Achieve Compliance

If the northern prescriptive U-factor is reduced to 0.25 and the same trade-off principles from the Draft 2 Criteria are applied, numerous U-factor and SHGC combination windows will be available to achieve compliance with the northern Energy Star criteria. In that regard, the prescriptive U-factor with equivalent performing U-factor and matching SHGC window products would look like this:

U-factor	SHGC
≤ 0.25	NR
= 0.26	≥ 0.22
= 0.27	≥ 0.27
= 0.28	≥ 0.32
= 0.29	≥ 0.37
=0.30	≥ 0.42

¹ NFRC Independent Verification Program, 713-2013, Table 2, p. 12.

If adopted, these northern criteria would enable manufacturers to use numerous U-factor and SHGC combinations to achieve compliance with Energy Star's criteria. It would provide those developing and manufacturing Energy Star compliant windows with significant flexibility along with an opportunity to benefit from both manufacturing and distribution efficiencies in ways that are consistent with consumers achieving maximum energy savings. As but one example, under this 0.25 prescriptive U-factor criteria, a 0.29 U-factor window with an SHGC between 0.37 and 0.40 could comply with Energy Star criteria in **both** the northern and north central climate zones. This would allow manufacturers to maximize manufacture and distribution efficiencies in these zones while assuring that consumers will reap the benefits of significant energy savings.

3. A 0.25 Prescriptive U-factor is Achievable and Technically Justified as Evidenced by its Adoption in the Canadian Energy Star Program.

A 0.25 prescriptive U-factor is clearly achievable and technically justified. This is evident from the fact that Canada's Energy Star Program is adopting a prescriptive 0.25 U-factor for Climate Zone 2, its most populace region.

On December 21, 2012, Natural Resources Canada ("NRCan") issued its Revised Proposed Changes to the Canadian ENERGY STAR technical Specification ("NRCan Technical Specification").² In exchange for a modest extension of time for compliance, NRCan stakeholders generally agreed to accept more stringent qualifying levels, including a 0.25 prescriptive U-factor in Canada's most populace Climate Zone 2: The "[m]ore stringent qualifying levels were generally accepted by stakeholders ... if the industry was given more time to adapt which NRCan is now proposing to do."³

NRCan's qualifying levels consist of two parts, a prescriptive U-factor path and an Energy Rating ("ER") path.

The prescriptive U-factor path in the NRCan Technical Specification is very much like the prescriptive U-factor found in the Draft 2 Criteria's northern zone. Likewise, although not exactly the same, the ER path in Canada is similar to the types of northern trade-offs that are now proposed in the Draft 2 Criteria. In that regard, both the ER path and the northern trade-offs match U-factors with SHGCs to identify windows that will provide an energy performance equivalent to the prescriptive U-factor path.

NRCan has three climate zones. Climate zone 1 (<3500 HDD) is a relatively small Pacific coastal zone and Zone 3 (≥ 6000 HDD) is Canada's far north. Zone 2 (3500 to < 6000 HDD) covers most population centers in Canada and shares the same climate as much of the U.S. Energy Star's northern zone (3000 to < 5000 HDD).

When NRCan's new Technical Specification takes effect on February 1, 2015, Energy Star labeled windows in NRCan's Zone 2 will be required to meet a prescriptive U-factor path of 0.25 or

² A copy of Natural Resources Canada's Revised Proposed Changes to the Canadian Energy Star Technical Specification dated December 21, 2012, is attached as Appendix A ("NRCan Technical Specification").

³ NRCan Technical Specification, p. 2.

a U-factor and SHGC combination that together yield an equivalent energy performance as expressed in an ER of 29.

The fact that a 0.25 U-factor (or equivalent ER) will be required for Energy Star labeled windows throughout Canada's most populace Climate Zone 2 is compelling evidence that a 0.25 prescriptive U-factor is both achievable and technically justified in the northern climate zone of the United States. This is especially true since Canada's Climate Zone 2 is essentially the same as the northern climate zone in the United States. Given the strong climate similarities between Canada's Zone 2 and the northern climate zone of the U.S., there is nothing in an artificial border line drawn on a map that would justify using a lower U-factor on one side of the border and a higher U-factor on the other side. The very same windows that will be manufactured for Energy Star labeling in Canada's Zone 2 will be equally available for sale just across the border in the northern zone of the United States.

4. The International Residential Code ("IRC") will consider a 0.25 U-factor with Trade-offs in its Climate Zones 5-8 in its Current Development Cycle.

The IRC development cycle began on January 3, 2013, with the submission of code change proposals. It will end in with the conclusion of the International Code Council's Final Action hearings on October 9, 2013.

AGC and PNA submitted a proposed change which, if adopted, would change the criteria for IRC climate zones 5-8 (which coincides with Energy Star's northern zone) to a prescriptive U-factor of 0.25 with the U-factor and SHGC trade-offs listed in B.2. above.⁴

It will not be known until October 9, 2013, whether the proposed change submitted by AGC and PNA will be adopted. However, if it is, it will become a part of the IRC as of January 1, 2015. Since Energy Star's Version 6 is scheduled to take effect on January 1, 2014, it is possible that Energy Star will have a 0.27 northern climate zone criteria on January 1, 2014, while the IRC will have moved to a prescriptive 0.25 U-factor. That will either result in the IRC being more stringent than the Energy Star criteria in the northern zone or necessitate changes to Energy Star's Version 6 between October 2013 and its proposed effective date of January 1, 2014. Otherwise, it would require EPA to move the effective date back of Version 6 back in order to institute changes that would keep Energy Star at least current with the prescriptive requirements of the IRC.

The easiest way to avoid these potentially difficult issues is to, simply, change the northern U-factor to a prescriptive 0.25 with the trade-offs listed in B.2. above.

C. The SHGC for a Full Lite Door Should be "NR" in the Northern Zone

A full lite sliding door is essentially a large, operable window from the standpoint of energy performance. There is no reason for a full lite door to have a different SHGC Energy Star criteria in the north than the SHGC associated with the prescriptive U-factor criteria for Energy Star windows. Since the SHGC associated with the prescriptive U-factor criteria for windows in the northern zone is "NR" the SHGC criteria for a full lite door should also be "NR."

⁴ A copy of the proposed code change is attached hereto as Appendix B.

In the NRCan's most recent ENERGY STAR development cycle, a separate criteria for sliding glass doors was eliminated and they are now subject to the same criteria as windows. Canada's change is sensible and technically correct. The EPA should follow Canada's lead as to full lite doors.

IV. Conclusion

Lowering the prescriptive U-factor in the north to 0.25 is an important step necessary to ensure that Energy Star Version 6 makes a **real** improvement that will benefit northern consumers. Adding trade-offs to that more stringent 0.25 criteria will ensure that multiple paths exist for manufacturers to comply with the new, more stringent criteria.

The fact that NRCan is adopting a prescriptive 0.25 U-factor in its most populace zone, a climate zone that significantly overlaps with the northern zone of the U.S., establishes not only that a 0.25 prescriptive U-factor is feasible, but also that it is technically sound and desirable. When NRCan's Energy Star revisions take effect on February 1, 2015, Energy Star labeled windows with a 0.25 U-factor will be readily available on both the Canadian and U.S. sides of the border. Specifying a prescriptive 0.25 U-factor in NRCan's Energy Star Zone 2 virtually assures the availability of 0.25 U-factor windows for Energy Star labeling in the northern zone of the U.S.

The American Architectural Manufacturers Association (AAMA), Associated Materials, Incorporated, Champion Window Mfg. & Supply Co., Jeld-Wen Windows & Door, and the Window and Door Manufacturers Association (WDMA) have all asked that the effective date of Version 6 be extended. If, as in Canada, an extension of the effective date is needed to give industry more time to adapt to a more stringent criteria, then the effective date should be extended as Canada has done. Otherwise, EPA runs the risk that the U.S. Energy Star Program will fall substantially behind Canada in stringency and that the IRC's prescriptive criteria will become more stringent than Version 6, within a few short months of the effective date of Version 6 as currently proposed.

In short, there is no technical, practical or other real impediment to reducing the prescriptive U-factor in the northern zone to 0.25. It will save significantly more aggregate energy in the north than the 0.27 U-factor as currently proposed. EPA should reconsider its 0.27 prescriptive northern U-factor and reduce it to 0.25.