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# Executive Summary – Stakeholder Comments

- **The Addition of Minimum SHGCs in the Northern Zone**
- **Adding Equivalent U-Factor / SHGC Combinations in the Northern Zone**
- **Lowering U-Factor to 0.25 in the Northern Zone**

# Minimum SHGC

- EPA's Report says that "high-gain, low U-factor products" are "extremely uncommon" and a minimum SHGC would violate the Energy Star principle that "products are broadly available." (Draft 1 Criteria and Analysis Report, pp. 26-27).

**\*\*\*\*\*These statements are incorrect\*\*\*\*\***

- **EVERY** primary glass manufacturer offers a *high-solar gain* product for sale in the U.S. marketplace.
- The same primary glass makers supply both the U.S. and Canada.
- The Canadian Energy Star database, where high-solar gain products are encouraged, shows that over 20,000 high-solar gain products are available.
- Applying the regression model developed by LBNL in 2008, numerous high-solar gain products can readily be matched with U-factors to deliver equivalent energy performance to low U-factors in the north.

# Product Availability - High-Solar Gain Low E

- PPG offers three high-solar gain products:
  - Sungate 400, Sungate 500 and Sungate 600
- Guardian offers four high-solar gain products:
  - ClimaGuard 75/68, 80/70, IS-15 and IS-20
- Cardinal offers two high-solar gain products:
  - LoE-180 and LoE-i81
- NSG/Pilkington offers one high-solar gain product – Energy Advantage
- AGC offers three high-solar gain products:
  - Comfort E2, E-PS and Ti-PS.
- Given that *13 different high-solar gain products* are available from *5 different manufacturers*, EPA's statement that such products are "extremely rare" is not correct.

# Equivalent U-factor/SHGC Combinations in the North

- **The Draft 1 Criteria will unfairly *preclude* a number of equivalent energy performing products from bearing the Energy Star label.**  
Currently, only ***one*** set of equivalent energy performing products will qualify for the Energy Star label, namely, a 0.28 U-factor with an SHGC  $\geq 0.32$ .
- **Pursuant to the regression model published in 2008 by LBNL, windows meeting these criteria will also deliver equivalent energy performance:**
  - ***U-factor = 0.29 with SHGC  $\geq 0.37$***
  - ***U-factor = 0.30 with SHGC  $\geq 0.42$***
- **There is also no legitimate basis upon which to discriminate against these equivalent energy performing windows by depriving them of an Energy Star label in the northern zone.**

# Lower Northern U-Factors

- In a recent unofficial poll, Window and Door asked readers what they thought of EPA's Draft 1 criteria. As of 8/7/12, 61% of those responding thought the criteria should have been more stringent.
- The criteria issued by DOE in 2003 resulted in an aggregate national energy savings of 12.0 trillion Btus (tBtus).
- The last criteria revision issued by DOE in 2009 resulted in an aggregate national energy savings of 9.2 tBtus.
- EPA's Draft 1 Criteria will only result in an aggregate energy savings of 2.2 tBtus, or one-fourth of the savings resulting from the last Energy Star revision cycle.
- In the last revision cycle, the northern zone alone resulted in a 1.97 tBtu savings while EPA's Draft 1 criteria will only save 0.52 tBtus, or about one-fourth of the energy savings captured in the last cycle.

# Lower Northern U-Factor

- Why are the aggregate energy savings so low in this cycle compared to earlier Energy Star cycles?
- In part, because EPA's northern U-factor criteria is so high that, instead of leading the market to the best performing products, it will continue to permit a full 41.5% of the products that are *currently* on the market to meet the new criteria. (See, Report, p. 20).
- This contradicts Energy Star's own stated goal of selecting "efficiency levels reflective of the top 25% of models available on the market." (See, Report, p. 7).
- What should be done?
- One thing that could greatly increase aggregate national energy savings in the northern zone is a reduction in U-factor to 0.25.
- EPA's own data clearly shows that 4<sup>th</sup> surface low-e double glazed units can easily achieve 0.26, 0.25 and even 0.24 U-factors.
- Figure 14 of the Report shows that 7% of the double glazed units in the CPD are 4<sup>th</sup> surface low-e windows with U-factors  $\leq 0.25$ . (See, Report p. 24).

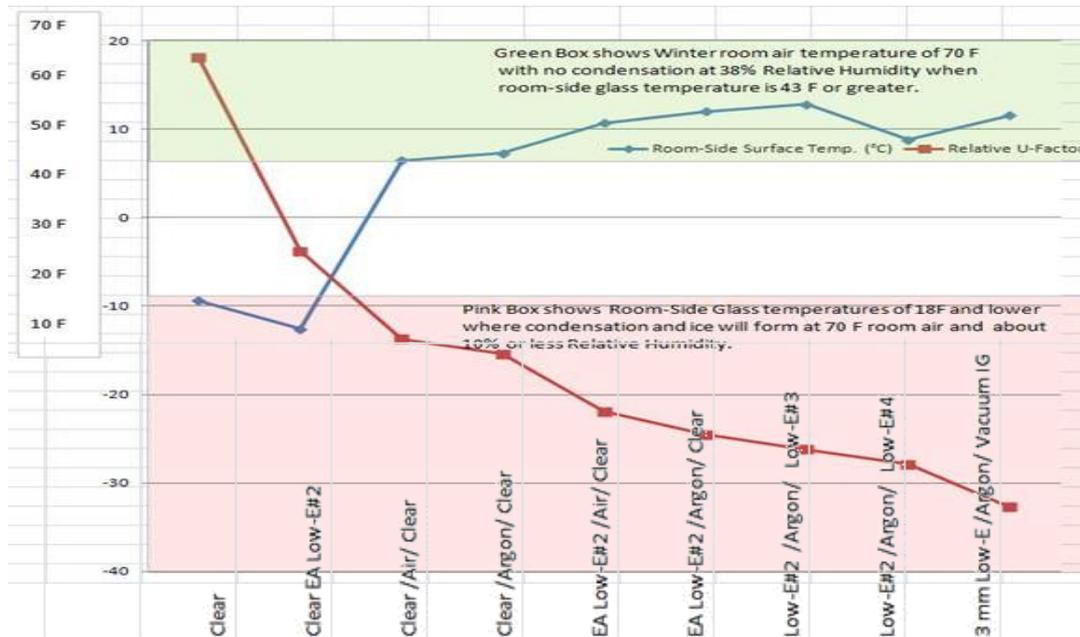
# Passive Solar & 4<sup>th</sup> Surface Low E Coatings

- The chart below shows high-solar gain Low E coatings that are marketed by the U.S. primary glass manufacturers. Every one of the U.S. glass manufacturers offers at least one #4 surface window coating:

Manufacturer	Product Name	Coating Type	4th Surface
PPG	Sungate 400	Soft Coat	No
PPG	Sungate 500	Hard Coat	No
PPG	Sungate 600	Hard Coat	Yes
NSG / Pilkington	Energy Advantage	Hard Coat	Yes
Cardinal	LoE-180	Soft Coat	No
Cardinal	LoE-181	Soft Coat	Yes
Guardian	ClimaGuard 75/68	Soft Coat	No
Guardian	ClimaGuard 80/70	Soft Coat	No
Guardian	ClimaGuard IS-15	Soft Coat	Yes
Guardian	ClimaGuard IS-20	Soft Coat	Yes
AGC	Comfort E2	Hard Coat	Yes
AGC	Comfort EPS	Hard Coat	Yes
AGC	Comfort Ti-PS	Soft Coat	No

# 4<sup>th</sup> Surface Low E Products

- Some window manufacturers have expressed concern that condensation may be an issue with use of 4<sup>th</sup> surface low-e products.
- In fact, the surface temperature of these products are at least 4° F warmer at the center of glass than double pane clear glass with a 1/2" air gap.
- Over extensive use spanning more than 25 years, there is no documented evidence to support the notion that properly manufactured double pane clear units with a 1/2" air gap have experienced harmful condensation in cold climates.
- Given that 4<sup>th</sup> surface low-e products are 4° F warmer at the center of glass, if condensation exists, it will be related to the cooler frame and spacer surfaces, not the glass.



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