TECHNICAL BULLETIN

2014 Florida Building Code, Energy Conservation: Effect on Doorglass

The 2014 Florida Building Code prescribes tougher thermal performance standards for swinging doors than previous versions of the Code. Swinging doors have typically been exempt in previous versions, but are now included in this edition. Swinging doors now have requirements for U-Factor and Solar Heat Gain Coefficient (SHGC).

Timing:

- The new standards take effect beginning on July 1, 2015.
- The new standards do not apply for products supplied for all units permitted through June 30th. They only apply for permits pulled July 1st and after.

Exemptions in the Code:

There are two exemptions written into the Florida Building Code.

1. Retrofits of doorglass-only has an exemption. This is explained in "Effect on Retrofits" on the top of page 2 of this document.
2. Up to 15 square feet of glazed fenestration per dwelling unit shall be permitted to be exempt from the U-factor and SHGC requirements in Table R402.1.1, per Chapter 4, page R-4.4, Section R402.3.3. This means that if the entrance has a U-factor or SHGC rating that exceeds the 0.65 or 0.40 (for U-factor) or 0.25 (for SHGC) values shown in the table and the overall daylight opening is less than 15 square feet, then that doorglass can be used, provided the homeowner doesn't need the exemption for their other fenestration. With what we know as of this date an Energy Performance Level (EPL) display card will still be required, even though this exemption is being used.

What the new Code means to manufacturers and prehangers delivering to Florida customers:

- If the U-factor and SHGC performance is not labeled on the door assembly, the door assembly is assigned relatively undesirable values for U-factor and SHGC. Those values are shown in Chapter 3, page R-3.3, Tables R303.1.3(1) and (2), and (3).
- Ideally, U-factor and SHGC performance claims are supported with documentation such as a temporary label from the National Fenestration Rating Council (NFRC), applied to the door system at the manufacturer's shop.
- Many full-lites made of clear glass do not meet the new requirements, but can still be used if the performance approach is used, see Chapter 4, Section R405.

The effect of the new building code is different for retrofit installations versus new construction.

Effect on Retrofits:

- Thankfully, the new code has no effect on glass-only retrofits because of an exemption. As long as the replacement doorglass performs as well or better than the original doorglass, there are no specific requirements for U-Factor and SHGC. Refer to page R-1.3 in Chapter 1 of the 2014 FBC-Energy Conservation bulletin, Section R101.4.3, Exemption #2: "Glass only replacements in an existing sash and frame" need not comply with the new 2014 standards.
- The building inspector will need to be shown data that supports the claim that the replacement glass performs "as well or better" than the original glass. ODL or your Inspection Agency can assist you with this by providing comparative data of one doorglass to another.
- Unfortunately, if the entrance retrofit project is expanded beyond just the doorglass to include retrofitting the original door, as well, then compliance is much more complicated. The exemption described above is void, and the building permit applicant needs to provide U-Factor and SHGC performance and that performance must meet or exceed the standards in the building code.

Effect on New Construction for a glazed entrance:

- Chapter 4, page R-4.1, Section R401.3 of the FBC-Energy Conservation specification explains that an Energy Performance Level (EPL) display card must be written for the building official. The EPL display card must also be certified by the builder to be accurate, prior to issuance to the building official. Appendix C of the FBC-Energy Conservation specification has a copy of a blank EPL display card.
- The door system must be thermally rated and labeled for U-factor and SHGC. Ideally, your door provider will already know these ratings and will share the results with you. You will need to work with the NFRC and an inspection agency to begin a labeling program.
- The U-factor and SHGC performance of the entrance must comply with items A-B (the "prescriptive" approach) or C (the "performance" approach) below.

Prescriptive:

A. The U-factor performance must meet the criteria set forth in Table R402.1.1 in Chapter 4 of the 2014 FBC-Energy Conservation bulletin. For instance, the U-factor requirements for a home in Zone 1 are 0.65 or less and are 0.40 or less for Zone 2. (see page R4.1 in Chapter 4).
B. The SHGC performance must meet the criteria set forth in the same table. That performance requirement is 0.25 or less for both Zones 1 and 2.

Performance:

C. If A or B fail to meet the standards, the other "performance" approaches to compliance are described in Section 405 of Chapter 4. These methods can best be summarized as the shortcomings of the entrance are compensated by the over-performance of the glazing, home insulation, or other heating/cooling equipment in the home. Completing this form requires knowledge of the performance of the glazing and/or other equipment in home. Appendix B and C explain these details.

How well does ODL doorglass perform relative to the new requirements?:

First, this disclaimer. The doorglass isn't solely responsible for the performance of the entrance. Any doorglass provider who is labeling or making claims of thermal performance of their doorglass without knowing the door it will be joined to is not being honest with you. The door and doorframe affect the thermal performance, too. With that said, here are some general guidelines:

Commodity Glass: *[½" and 1" units]*	Meets: ¼-lites & ½-lites with Clear or Low-E. ¾-lites with Low-E, Mixed, (varies by door): ¾-lites with Clear and full-lites with Low-E. Requires Exemption R402.3.3: Full-lites with Clear.
Simulated Div. Lights:	Meets: Low-E in both ¾ and full-lite. Requires Exemption R402.3.3: Clear units for both ¾ and full-lites.
Blinds, dual-glazed:	Meets: ½ and ¾-lites in both Clear and Low-E, full-lites in Low-E. Requires Exemption R402.3.3: Full-lites with Clear.
Blinds, triple-glazed:	Meets: ½-lites in both Clear and Low-E, full-lites in Low-E. Requires Exemption R402.3.3: Full-lites with Clear.
Decorative:	Meets: ¼, ½, and ¾-lites with Clear or Low-E. Full-lites with Low-E. Requires Exemption R402.3.3: Full-lites with Clear.
Vent, 22x36:	Meets: All of them….Low-E & Clear, 1-lites and GBG's.
Internal Wrought Iron: *[Offered only With Clear glass]*	Meets: ¼ and ½-lites with Clear. Mixed, (varies by door): ¾-lites with Clear. Requires Exemption R402.3.3: Full-lites with Clear.
Severe Weather: [Deco, Blinds, and Commodity with GBG's]	Meets: ¼ and ½ and ¾-lites with Clear and Low-E, full-size Clear Deco, full-size Blinds and GBG's with Low-E. Mixed, (varies by door): Full-size Blinds and GBG's with Clear.
Severe Weather: [Int. Wrought Iron and Commodity 1-lites]:	Meets: ¼, ½, and ¾-lites with Clear and Low-E, full-lites with Low-E. Requires Exemption R402.3.3: Full-lites with Clear.

Recommended next steps for manufacturers:

1. Consult with an Inspection Agency to learn how to claim U-factor and SHGC performance for your products. The two most prominent Inspection Agencies are National Accreditation and Management Institute (NAMI, found online at namicertification.com) and Keystone Certifications (found online at keystonecertifications.com) to get started on an official labeling program for the thermal performance of your door assemblies.
2. Join the National Fenestration Rating Council to learn how to accurately label the performance of your products.
3. Purchase and study the Florida Building Code, Energy Conservation (Fifth Edition, 2014). It is available from the International Code Council. Focus your attention on Chapter 1, Chapter 3, Chapter 4, Appendix B, and the Energy Performance Level (EPL) Display Card shown in Appendix C.

4. Check with your builder customers to see if they are prepared to submit the necessary forms and documents to local code enforcement officials. Check with your local code enforcement officials to get their advice on best practices.

If you have any questions regarding this information please contact your nearest ODL representative.

June 30, 2015

****