



# Code-Change Proposals Aim to Simplify IECC

The International Code Council has posted the code-change proposals that will result in the 2015 ICC Group B codes, including the 2015 International Residential Code, 2015 International Energy Conservation Code and 2015 International Existing Building Code. These proposals are available for review at [www.iccsafe.org/cs/codes/Pages/12-14-Proposed-Group-B.aspx](http://www.iccsafe.org/cs/codes/Pages/12-14-Proposed-Group-B.aspx).



While it's too early to know the results of these proposals, there are some trends worth noting.

For example, many of the proponents of the 250-plus code-change proposals for the residential provisions of the 2015 IECC say their intent is to coordinate the residential and commercial provisions in order to make the IECC easier to use, understand and enforce. There is no mandate in this cycle to increase the stringency of the IECC. The intent, it would seem, is to revise the code so everyone can better understand how to meet the strict requirements established during the last code-change cycle.

There have been complaints that the 2012 IECC is too complex, and this might be part of the reason that, to date, only a handful of states have adopted and begun enforcing it.

Within the code arena, we refer to this type of refinement process as "tweaking," but the manner in which this tweaking is to occur is not clear. Proposed approaches vary significantly.

### RESIDENTIAL SHGCs AND U-FACTORS

A good example of the variety of proposed approaches can be found in the multiple proposals for residential solar heat gain coefficient.

The prescriptive design provisions

of the 2012 IECC establish a maximum SHGC for fenestration in residential buildings of 0.25 in Climate Zones 1-3 (Florida through Oklahoma) and 0.40 in CZ 4 (Tennessee through Kentucky). It does not contain any provisions for varying the maximum SHGC if the fenestration is provided with shading by overhanging projections, as stated in the 2012 IECC for commercial fenestration.

There have been attempts in the past to introduce variation of SHGC based upon overhanging projections into the residential prescriptive provisions of the IECC. Some argue this would make the residential and commercial provisions more consistent. But proponents' opinions differ as to how it should be done, or even if it should be done.

One proposal for this year's ICC code-change cycle would apply the same adjustment factor to vertical fenestration in residential construction as is permitted for commercial fenestration oriented to the south, east and west in the 2012 IECC. Another proposal would exempt glazing from any maximum SHGC limit if it is provided with an overhanging projection of a specified depth. The width required to qualify for this exemption would be based upon the orientation of the glazing. A third proposal would maintain the current maximum SHGC of 0.25 in CZs 1-3, but establish a lower maximum SHGC of 0.20 in those same CZs when 10 percent or more of the vertical glazing is oriented to the west. This last proposal would also lower the maximum U-factor in CZs 4-8 from 0.35 or 0.32 to 0.20.

Consideration of orientation to determine maximum SHGC is included in the provisions of the 2012 IECC for glazing in commercial buildings. However, in the commercial provisions, orientation is only considered with

regards to the increase in maximum SHGC that is permitted when overhanging projections are provided.

There are multiple proposals that challenge the assumption that lower SHGCs provide for more energy efficient homes. There are proposals that would raise the maximum SHGC of 0.25 permitted in CZs 1-3 to 0.30 and eliminate the limit in CZ 4 completely.

There is also a proposal that would establish a minimum SHGC of 0.40 in CZs 5-8. Another proposal would permit the maximum U-factor in CZ 5-8 to be increased by as much as 0.05, in increments of 0.01, if the SHGC of the fenestration is increased in increments of 0.05.

Other proposals would create a footnote that increases both maximum U-factor and SHGC for impact-resistant glazing in CZs 2 and 3, or permits up to 75 square feet of replacement fenestration to have a higher maximum SHGC of 0.35 in CZs 1-3. An additional proposal would lower the maximum U-factor and SHGC for sunroom additions in those same three Climate Zones.

### VISIBLE TRANSMITTANCE

Although there are multiple proposals addressing visible transmittance for fenestration in commercial buildings, there are none for fenestration in residential buildings. The IRC already requires a certain percentage of glazing in residences to provide lighting and ventilation, but exceptions are made for spaces where artificial lighting and mechanical ventilation are provided at certain levels. There are no proposals this cycle to require a certain amount of daylighting in one- and two-family residences.

### DYNAMIC GLAZING

While evaluation of dynamic glazing in commercial buildings is a

new addition to this code cycle, only one question has been raised on the residential side: Should an increase of 0.02 in U-factor be permitted for automatic modulating glazing in CZs 5-8? A proposal to do so while lowering maximum U-factors to 0.25 in CZs 5-8 is under consideration.

### **PERFORMANCE CAPS**

Other questions that have arisen from this year's code-change proposals include: should the current performance caps be replaced with provisions that limit the percentage area weighted average U-factor? Should SHGC be increased when the various other compliance paths are used? If so, to what extent should they be limited? Is limiting the increase in area weighted average U-factor to 25 percent, but allowing an increase of up to 50 percent for SHGC, appropriate? Should the limits be applied to all compliance paths, or to just certain ones? Should the performance caps be applied for SHGC on glazing that is shaded with deep overhangs? Or do the overhangs provide sufficient shading to make limiting the SHGC unnecessary? And if so, how deep should the overhang be?

### **RESNET**

Finally, there are proposals to add new compliance paths to the IECC. Some of them are based on RESNET, with or without performance caps on fenestration. One uses the Canadian equation to determine an energy rating of fenestration in CZs 6, 7 and 8.

Most of these proposals are intended to make the IECC more user friendly, and thus more likely to be adopted and enforced. The problem is determining which of them will actually accomplish that. ☐

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