



# PUBLIC CODE CHANGE PROPOSAL FORM FOR PUBLIC PROPOSALS IN THE INTERNATIONAL CODES

## 2006/2007 CODE DEVELOPMENT CYCLE

**CLOSING DATE: All Proposals Must Be Received by March 24, 2006**

The 2006/2007 Code Development Hearings are scheduled for  
September 20 to 30, 2006 in Orlando, FL

- 1) **Name:** Ronald Majette **Date:** March 24, 2006  
**Jurisdiction/Company:** United States Department of Energy  
**Submitted on Behalf of:** United States Department of Energy  
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- 2) **\*Signature:** \_\_\_\_\_  
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**Signature for electronic submittal:** When submitting proposals electronically, to complete the submittal process, print a copy of the ICC Electronic [Copyright Release](#) form found at [www.iccsafe.org](http://www.iccsafe.org), fill in the requested information, send to ICC. One completed form is required. This must be done for each code change cycle and can be used for code changes and public comments.

- 3) Indicate appropriate International Code(s) associated with this Public Proposal – Please use Acronym: IECC  
 If you have also submitted a separate coordination change to another I-Code, please indicate the code: \_\_\_\_\_  
 (See section below for list of names and acronyms for the International Codes).

- 4) **Be sure to format your proposal and include all information as indicated on Page 2 of this form.**

- 5) Proposals should be sent to the following offices via regular mail or email. An e-mail submittal is preferred, including an electronic version, in either Wordperfect or Word. The only formatting that is needed is **BOLDING**, ~~STRIKEOUT~~ AND UNDERLINING. Please do not provide additional formatting such as tabs, columns, etc., as this will be done by ICC

Please use a separate form for each proposal submitted. Note: All code changes received will receive an acknowledgment.

Please check here if separate graphic file provided.

Graphic materials (Graphs, maps, drawings, charts, photographs, etc.) must be submitted as separate electronic files in .CDR,.IA,.TIF or .JPG format (300 DPI Minimum resolution; 600 DPI or more preferred) even though they may also be embedded in your Word or Wordperfect submittal.

Code	Send to:	<u>Acronym</u>	<u>ICC Code Name</u>
IBC	International Code Council	<b>IBC</b>	International Building Code
ICC EC	Chicago District Office	<b>ICC EC</b>	ICC Electrical Code–Administrative Provisions
IEBC	Attn: Diane Schoonover	<b>IECC</b>	International Energy Conservation Code
IFC	4051 West Flossmoor Road	<b>IEBC</b>	International Existing Building Code
IFGC	Country Club Hills, IL 60478-5795	<b>IFC</b>	International Fire Code
IPC	Fax: 708/799-0320	<b>IFGC</b>	International Fuel Gas Code
IPSDC	<a href="mailto:codechanges@iccsafe.org">codechanges@iccsafe.org</a>	<b>IMC</b>	International Mechanical Code
IPMC		<b>ICC PC</b>	ICC Performance Code
IWUIC		<b>IPC</b>	International Plumbing Code
IZC		<b>IPSDC</b>	International Private Sewage Disposal Code
		<b>IPMC</b>	International Property Maintenance Code
IECC	International Code Council	<b>IRC</b>	International Residential Code
ICC PC	Birmingham District Office	<b>IWUIC</b>	International Wildland-Urban Interface Code
IMC	Attn: Annette Sundberg	<b>IZC</b>	International Zoning Code
IRC	900 Montclair Road		
	Birmingham, AL 35213-1206		
	Fax: 205/592-7001		
	<a href="mailto:codechangesbhm@iccsafe.org">codechangesbhm@iccsafe.org</a>		

**CODE CHANGE PROPOSAL**

Please provide all of the following items in your code change proposal. Your proposal may be entered on the following form, or you may attach a separate file. However, please read the instructions provided for each part of the code change proposal. The sections identified in parentheses are the applicable sections from CP #28 Code Development. The full procedures can be downloaded from [www.iccsafe.org](http://www.iccsafe.org).

**Code Sections/Tables/Figures Proposed for Revision (3.3.2): IECC Table 404.5.2(1)**

**Name/Company/Representing (3.3.1):** Ronald Majette / United States Department of Energy

**Proposal:**  
**IECC:**

Revise as follows:

**Table 404.5.2(1) Specifications for the Standard Reference and Proposed Designs**

<p>Glazing:<sup>a</sup></p>	<p>Total area<sup>b</sup>= (a.) The proposed glazing area; where the proposed glazing area is less than 18% of the conditioned floor area. (b.) 18% of the conditioned floor area; where proposed glazing area is 18% or more of conditioned floor area. Orientation: equally distributed to four (4) cardinal compass orientations (N, E, S, &amp;W) U-factor: from Table 402.1.2 SHGC: <u>Zones 1-3: 0.30 if proposed level is equal to or less than 0.30. Same as proposed if proposed level is between 0.30 and the value in Table 402.1.1. From Table 402.1.1 if proposed is higher than the value in Table 402.1.1.</u> <u>Zones 4-8: 0.40</u> <del>from Table 402.1 except that for climates with no requirement (NR) SHGC = 0.40 shall be used</del> Interior shade fraction: Summer (all hours when cooling is required) = 0.70 Winter (all hours when heating is required) = 0.85 External shading: none</p>	<p>As proposed</p> <p>As proposed</p> <p>As proposed</p> <p>As proposed</p> <p>Same as standard reference design<sup>c</sup></p> <p>As proposed</p>
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Remainder of table unchanged.

**Supporting Information (3.3.4 & 3.4):**

The purpose of this code change is to set a more appropriate solar heat gain for glazing in the simulated performance alternative. Currently, the reference design solar heat gain coefficient (SHGC) matches the prescriptive code requirement from Table 402.1.1 (0.40 SHGC) for all climate zones. The reference design is a hypothetical building intended to represent a typical design that meets the minimum code requirements. However, the code SHGC requirement of 0.40 in zones 1-3 does not represent a typical glazing product but rather sets an upper limit for low solar gain glazing. DOE believes that Low-E glass is by far the most popular method of achieving low solar heat gain in glazed fenestration due to its modest cost, high visible light transmittance, and excellent energy efficiency characteristics. In fact, approximately 60% of new residential windows nationwide are low-E (Door and Window Maker Magazine, April 2005). Data from the National Fenestration Ratings Council ratings indicate only 2% of all double-glaze “soft-coat” low-E horizontal slider products in the NFRC have a SHGC above 0.40. Therefore 0.40 does not represent a typical value but a worst case. The 0.30 SHGC proposed here is the value provided for double-glazed low-solar low-E windows with a wood or vinyl frame from the Efficient Windows Collaborative website ([http://www.efficientwindows.org/glazing\\_cfm?id=8](http://www.efficientwindows.org/glazing_cfm?id=8)). Sixty percent of the horizontal sliders in the NFRC database are at 0.30 SHGC or lower.

The performance alternative reference design often sets the baseline for beyond-code programs such as Energy Star Homes; therefore, this proposal has implications for future updates of these beyond-code programs. The current baseline of 0.40 SHGC in Zones 1-3 allows an easy credit that undercuts the leading-edge nature of Energy Star. For example, REM-Design 12.0 indicates a reduction of SHGC from 0.40 to 0.30 achieves 30% of the improvement beyond IECC code levels needed to qualify for Energy Star for a typical house in Orlando (2000 ft<sup>2</sup> floor area, 360 ft<sup>2</sup> windows, equally on north, south, east, and west).

This proposal leaves the prescriptive requirement at 0.40 to allow for less common low solar gain product types that may have SHGC values

## LOWER SHGC

above 0.30 (examples may include tinted and reflective glass, and aluminum framed windows). DOE is not opposed to lowering the prescriptive requirement, but considers that a lower priority because of the scarcity of products that would be affected by reducing the prescriptive level. On the other hand, lowering the reference design SHGC requirement applies to all designs when the simulated performance alternative is used in the affected climate zones.

Although this proposal may appear to create a mismatch between the stringency of the prescriptive and simulation approaches, this is not the case. The proposed requirement is in no way more stringent in the performance path compared to the prescriptive path and in fact allows credit not available in the prescriptive approach. The minor differences created by this proposal are similar to other performance path departures from the prescriptive path such as the exemptions of one door and 15 sq. ft. of glass that are not carried into the reference design.

**Referenced Standards (3.4 & 3.6):** N/A

**Cost Impact (3.3.4.6):** The code change proposal will increase the cost of construction.