

# 2006 CHANGES TO THE INTERNATIONAL ENERGY CONSERVATION CODE

by  
Darrell K. Winters, P.E., C.E.M.

The 2006 edition of the International Energy Conservation Code (IECC) contains major changes from the 2003 edition. Chapters 1 – 4 have been totally revised. Many of the terms used in the code have been redefined. This paper describes the changes in each chapter of the energy code published by the International Code Council.

Chapter 1 contains the administrative and enforcement provisions. The scope now states that this code is applicable to one and two family residences and townhouses, and commercial buildings. The applicability to existing buildings and renovations to them was also restated. Four exemptions are contained in the additions, alterations, renovations or repairs section. These exemptions pertain to the installation of storm windows, glass only replacements, the exposure of existing ceiling, wall or floor cavities and construction where the ceiling, wall or floor cavity is not exposed. Code officials are now permitted to approve computer software, worksheets, compliance manuals and other materials that meet the intent of the code. The solar heat gain and U-factor properties of glazed windows, doors and skylights have been revised. The tables and the format presenting these factors have been condensed. A totally new section has been included which allows the local authority to deem a national, state or local energy efficiency program to exceed the energy efficiency required by the IECC. This approval is considered to show compliance with the IECC.

All definitions pertinent to the energy code are contained in chapter 2. Nine terms now have new definitions, and eight others were revised.

In chapter 3 the number of climate zones has been reduced from 19 to 8. A moisture regime has been added dividing the country into moist, dry or marine subcategories. A national map is included in the code which shows all the above divisions (a copy of the map is shown in the figure at the end of this article). Table 301.1 is a climate zone list by state and county / parish. The major climate types and international climate zones are defined in tables 301.3(1) and 301.3(2), respectively.

Chapter 4 covers residential energy efficiency. Section 401.2 lists the provisions that must be followed in mandatory, prescriptive or performance methods of compliance with the code. A permanent certificate, completed by the builder or registered design professional, must be posted in or on the electrical distribution panel. This certificate shall list insulation R-values and fenestration U-factors and solar heat gain coefficients of the installed components. It must also list the type and efficiency of the mechanical equipment. The prescriptive requirements for insulation and fenestration, mandatory requirements for air leakage and moisture control, and climate zone specific insulation and fenestration requirements are shown in section 402. Section 403 covers duct insulation, mechanical system piping insulation and the sizing of the mechanical system. Compliance using the simulated energy performance method is shown in section 404. The following table lists the insulation and fenestration requirements in each of the two climate zones of Louisiana. This table

provides answers to the most frequently asked questions about the energy requirements of the new code.

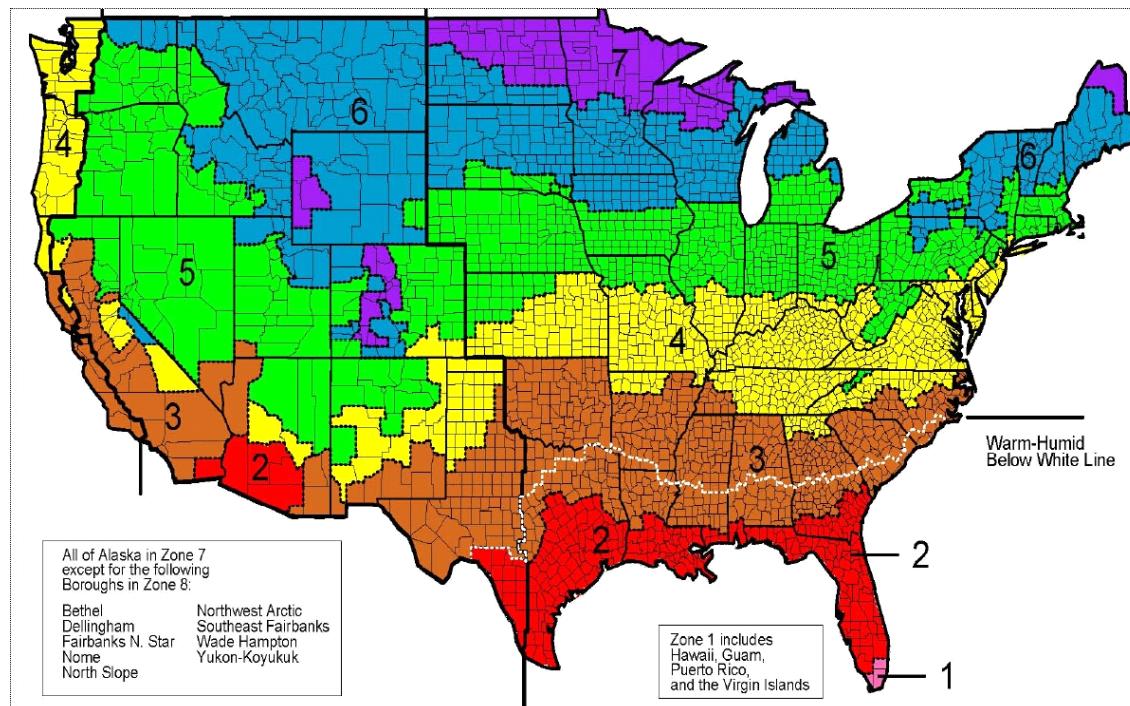
### Insulation and Fenestration Requirements in Louisiana

Climate Zone	2	3
Fenestration U-Factor	0.75	0.65
Skylight U-Factor	0.75	0.65
Glazed Fenestration SHGC	0.40	0.40
Ceiling R-Value	30	30
Wood Frame Wall R-Value	13	13
Mass Wall R-Value	4	5
Floor R-Value	13	19
Crawl Space Wall R-Value	0	5/13 <sup>a</sup>

<sup>a</sup>The 1<sup>st</sup> R-Value applies to continuous insulation; the 2<sup>nd</sup> to cavity insulation.  
Either meets the requirement of the code.

The energy efficiency requirements for commercial buildings are detailed in chapter 5. In June 2005, Louisiana upgraded its Commercial Building Energy Conservation Code (CBECC) to ASHRAE 90.1-2001. Since the requirements of the CBECC differ from chapter 5 of the 2006 IECC, the 17 sectional changes to the IECC will not be discussed in this article.

Climate Zone Map



Source: <http://www.energycodes.gov/October 2006>