

Dub Taylor
Director
Texas State Energy Conservation Office
Comptroller of Public Accounts
P.O. Box 13528
Austin, Texas 78711-3528

June 29, 2009

RE: Comments of the Building Codes Assistance Project (BCAP) on the 2009 IRC for Texas

Dear Mr. Taylor,

Thank you for giving BCAP the opportunity to comment on the 2009 International Residential Code (IRC) adoption in Texas. BCAP commends the state for adopting an energy code that will increase energy efficiency for new homes, additions and renovations statewide. We are concerned, however, with the stringency of the 2009 IRC and strongly believe that the state will benefit from the adoption of the 2009 International Energy Conservation Code (IECC) for single-family homes. As you know, the American Recovery and Reinvestment Act (ARRA) specifies the adoption of the 2009 IECC as a pre-condition for compliance, hence earning all of the \$218.7 million in federal funding Texas is eligible to receive from the U.S. Department of Energy's State Energy Program (SEP).

In comparison with the 2009 IECC for residential buildings, we believe that the 2009 IRC is less stringent in the following areas:

- The solar heat gain coefficient (SHGC) requirement for windows in Texas climate zones 2 and 3, which represent the majority of the state of Texas, is SHGC-.30 in the IECC, while the IRC allows SHGC-.35. The lower (more stringent) requirement of SHGC-.30 in the 2009 IECC will lower heat gain in homes, reducing cooling energy use by an average of 5% according to Lawrence Berkeley National Laboratory energy modeling software. Many windows sold today already meet the better SHGC-.30 or lower, so there would not be an increase of cost with the new standard. The windows that do not presently meet SHGC-.30 could comply by switching to the latest solar-control low-E coatings. This lowers the SHGC to below .25 and reduces cooling energy use by 10-15%, providing even greater energy savings that on average would pay back their minimal increased cost in less than 7 years. Peak cooling demand and air conditioning sizing needs are also reduced by lower solar heat gain through windows, which can lead to smaller, less costly air conditioning equipment.
- Also, the requirements for cathedral ceilings, a popular feature in many new homes, are also less restrictive in the IRC than the IECC. The IECC limits the allowance for R-30 insulation in ceilings without attics to 500 ft² or 20% of the total insulated ceiling area (whichever is less). The IRC limits the allowance to 500 ft² without regard to the total ceiling area. This will only impact homes in climate zone 4 – which encompasses much of Northwest Texas – and will allow the reduction of R-38 to R-30 insulation there.
- The IRC contains no “tradeoff cap” for trading off glazing U-factor or SHGC levels, like the IECC does. The IECC has an SHGC trade-off cap of 0.50 in Texas climate zones 2 and 3 (402.5.) and a U-factor cap of U-0.48 in zone 4. As these caps do not increase the stringency of the code (but rather restrict trade-off options), there is no direct impact on annual energy costs. There may be, however, some impacts on occupant comfort and/or resistance to moisture condensation due to HVAC impacts.
- The air barrier and insulation inspection tables (IECC 402.4.2 and IRC N1102.4.2) differ slightly. The IECC requires checking that “Air-permeable insulation is inside of an air barrier” (right column in the first row). The IRC is missing this language. This could be an issue for assuring that moisture buildup does not occur in insulation falling outside the air barrier.

Building Codes Assistance Project
1850 M. St. NW Suite 600 Washington, DC 20036
202.530.2211 www.bcap-energy.org

In addition, most Texas builders use the IC3 compliance software developed by Texas A&M Energy Systems Laboratory, which is based on the performance compliance method. Since the IRC does not include a performance compliance method, there may be some conflict with the continued use of Texas' IC3 software if the IRC is adopted rather than the IECC. Incorporating a performance-based compliance option also provides much more flexibility to members of the building community.

We encourage SECO to adopt the IECC for single-family homes rather than the IRC. This should be done to achieve higher levels of efficiency in Texas homes, simplify the code process for builders by only using one energy code, and to meet the governor's assurances to the U.S. Department of Energy in regards to funding under ARRA. BCAP specifically recommends that SECO either delete the energy efficiency chapter of the IRC (Chapter 11) and replace it with a reference to the IECC, or create a package of amendments to the IRC to strengthen its provisions to the level of the IECC. BCAP is willing to work closely with SECO to develop such amendments.

Regards,



Aleisha Khan
Executive Director
202-530-2211
akhan@ase.org



Michael C. DeWein
Technical Director
518-664-1308
mdewein@ase.org



Robin Snyder
Program Director
202-530-2226
rsnyder@ase.org