

The Impact of Changes to the 2015 International Energy Conservation Code

Each of the last two triennial issues of the International Energy Conservation Code has made significant moves to improve the energy efficiency of homes that are built to those standards. These more stringent requirements have produced the intended effect.

One concern is that these requirements have also significantly increased the cost of our built environment. This has created a level of tension between energy efficiency efforts and the majority of home builders, who have questioned the payoff of these stringent codes to homeowners. One recently approved change though, had a very different genesis.

On October 7, 2013 the International Code Council voted to incorporate an optional Energy Rating Index compliance path into the 2015 IECC. This change was proposed by a group of energy advocacy organizations including the Natural Resources Defense Council, the Institute for Market Transformation, and the Britt/Makela Group – but the group also included the Leading Builders of America. The change was not only supported by the Leading Builders of America, representing 20 of the largest builders in the nation that account for about 40% of the new single-family home market, but it also was supported by about 90 smaller builders.

The updated code will reduce energy waste in new homes beyond efforts of previous versions, but at the same time will allow more flexibility to builders in achieving those improvements. David Goldstein, of the NRDC, said “... the anticipated high level of homeowner savings, as important as it is, isn’t the biggest story here. Instead, it’s that this marks the first time in my almost 40 years of participating in code change proceedings that builders and efficiency advocates are jointly supporting a major upgrade in energy efficiency requirements.”

This proposal will provide builders much greater flexibility in meeting the guidelines while saving a typical new home buyer between \$300 and \$850 annually on their utility bills. It is estimated that these cost savings will accumulate to more than \$100 billion nationally by 2030 compared to the 2006 code. Cumulative greenhouse gas emissions reductions through 2030 will be 560 million metric tons (MMT) of carbon dioxide pollution equivalent, approximately equal to the emissions produced by 158 coal-fired power plants in a year.

“This agreement is an example of what can be accomplished when diverse groups work together to achieve a common goal. The result in this case will benefit literally hundreds of thousands of homeowners for decades to come,” said Steve Hilton, Chairman and CEO of Phoenix-based Meritage Homes and chair of LBA’s Energy Working Group.

The Energy Rating Index uses a numeric score with 100 being the equivalent of the 2006 IECC standard, and 0 reflecting a zero net-energy home. The Energy Rating Index is very similar to the Home Energy Rating System – in fact, the HERS rating can be used to comply with this new 2015 IECC

option. The HERS rating has often been compared to a Miles Per Gallon rating for a car, in that it will allow consumers to see a third party verified number that indicates the energy efficiency of a home they are building or considering to buy.

The standards set for the 2015 IECC by climate zone are:

Regions 1 & 2	52
Region 3	51
Region 4	54
Region 5	55
Region 6	54
Regions 7 & 8	53

The flexibility provided by the ERI approach allows builders to choose what they feel will be the best efficiency measures that cost the least and perform the best for any given home. This is significant. Leading Builders of America estimates that a level of energy performance that would have cost \$3,000 extra using the prescriptive approach would cost only \$1,300 with the HERS score approach, even counting the cost of the HERS rating.

There are well over one hundred national and regional builders that have already committed to having a HERS rating completed on every home they build. Now with this ERI option in the 2015 IECC, which is compatible with the HERS rating, true reflections of a home's energy efficiency will become ever more ubiquitous. As the public becomes more familiar with this simpler reflection of efficiency, demand will drive the process beyond what regulation has been able to accomplish. Real Estate Multiple Listing agencies are also joining the move, and a fair number now include a HERS rating on their listings for a home.

Even with the greater flexibility in selecting the efficiency measures afforded by the ERI change, one aspect has not changed. A builder still must meet all of the mandatory envelope requirements of the 2009 IECC. These include minimum insulation and window performance with a focus on minimizing air infiltration. A proposal to allow builders to trade off building envelope performance with mechanical systems was rejected at the October ICC I-code hearing.

Spray polyurethane foam insulations, like ThermalGuard™ by Rhino Linings, have been a natural choice to improve envelope performance for builders for years* because they seal and insulate in one step. Additional sealing methods are now being used to improve the true performance of other types of insulation.

All of these efforts to improve codes and their active implementation not only promises to achieve significant energy savings and the monetary savings that accompany them, but in fact have already achieved a great deal.

The NRDC projects that if builders will follow the performance method using the approved HERS equivalency numbers, they will achieve a 10 to 15% energy savings in every climate zone throughout

the country over 2012 code levels. They also have just released a report titled “*America’s (Amazingly) Good Energy News.*” The report cites a “remarkable turnaround” in the state of the U.S. energy economy, mostly due to energy efficiency. (The full report can be found at <http://www.nrdc.org/energy/energy-environment-report/files/energy-environment-report-2013.pdf>.)

The report says, “Because increasing energy efficiency is far less costly than adding other energy resources like fossil fuels, this is saving the nation hundreds of billions of dollars annually, helping the U.S. workers and companies compete worldwide, and making our country more energy-secure.”

While the steps taken to improve energy efficiency in residential building is only a part of this overall good report, it is a significant part. There is a lot of work yet to be done, but the latest steps taken by the ICC to better align the various groups involved are significant.

About the Author

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*To view an energy modeling case study, that uses a HERS rating to compare a home constructed with spray foam insulation and other energy-efficient envelope components with a home constructed with traditional insulation and envelope components, go to <http://spf.rhino linings.com/resources/profiles-and-studies/>.

