

Green Building Program Updates the Residential Rating Tool

Version 7.0 of the Single Family Residential Rating Tool is being released this month. We originally intended to release the new version in October but decided to delay the new version until after the conference and the holidays. After six years with Version 6.0, we felt it was time to make some improvements. Our revisions are a result of code changes, a need for some clarifications, availability of new technologies and products, and some changes in emphasis.

Code Changes

The 2001 International Energy Conservation Code has been adopted for the entire State of Texas. As a result, some items formerly listed as optional measures by the Green Building Program are now required by code. For example, the requirement that glazing have a solar heat gain coefficient no greater than 0.40 (this was a code requirement in the City of Austin, but not in the entire Austin Energy service area) was previously listed as an optional measure in the Green Building Rating Tool but is now simply a code requirement and no additional rating points are awarded. The same is true for the requirement that recessed-can light fixtures be Type IC-AT (insulated and air-tight).

Clarifications

Under the Community section of the rating, we have clarified several issues, including:

"small lot" size is defined as one under 5750 square feet

a park or trail must be within a half-mile radius (instead of adjacent to the project)

a shopping area must be within a half-mile radius (not a 15-minute walk)

Availability of New Technologies and Products

Based on recent research, we have found that equipment and expertise to test air-flow to every room are now readily available. Points are awarded if flow meets our standard.

Additions to the Rating

Because our population is aging, because many people would like to "age in place", and because more universal design just makes good sense for everyone, we have added points for visitability and accessibility. We've also added a new category -**Testing** - because there is now an adequate number of firms in the private sector with the equipment and knowledge to do this important work.

Four tests are currently listed in the Testing category:

- a supply air-flow test
- a blower door test
- direct duct-pressure test

- combustion safety/backdraft test

We now require that testing be done and our standards met in order for a house to receive a four or five star-rating. These star levels also require that the house have a minimum of 600 square feet of living space per ton of cooling.

Changes in Emphasis

The requirement that cooling equipment be sized according to the Manual J calculation has long been a code requirement. We have removed it from the list of Program requirements to emphasize this fact. We've also removed points for a laundry room exhaust fan. We still think they are a good idea for removing excess moisture, but many homeowners may operate too many exhaust fans at the same time, thus seriously depressurizing the house and increasing infiltration and backdrafting.

Points are no longer given for irrigation systems. Although a properly designed and installed irrigation system could save water, research shows that homeowners who have them tend to use far more water than those without them. We've changed some point values to better reflect our assessment of their relative importance. For example, we've raised the installation of photovoltaics from four to five points (as well as stated a kW minimum of 1.5). Because rainwater harvesting has become more common, we now give different amounts of points for different storage capacities.

Transitioning to Version 7.0

Although Version 7.0 is not substantially different, there are many small changes, so we ask you to read it over carefully. We will be emailing a copy of Version 7.0 to all members sometime this month. We ask that you submit all future ratings in Version 7.0. For projects already under construction, we will accept the 6.0 rating, but please make the transition to 7.0 as soon as possible.

Guide to the Single-Family Residential Rating

We are also updating the Guide to the Single-Family Residential Rating tool. This guide will:

- Help you better understand and apply the rating
- Give you more ideas for green measures
- Tell you how compliance is determined
- Give you language to help explain green measures and their benefits to clients and others

Cellulose Insulation and Fire Resistance

Insulation doesn't seem to be as hot a topic during the cooler months in Central Texas as during the summer. Obviously, its role in creating a more airtight, energy-efficient space is very important when temperatures soar and air conditioners work to maintain a comfortable living environment. When choosing the type of insulation to install in their projects, builders usually consider properties such as insulative value (R-value), and occasionally acoustical performance and condensation control. However, one aspect of insulation that probably isn't considered as often is the role a building's insulation plays during a fire. No matter what the cause of the fire, one role of a building's structural and insulative components is to protect the lives of its occupants and minimize the amount of damage to the property.



Testing Methods

Standards organizations, such as the [National Institute of Standards and Technology \(NIST\)](#), measure the ASTM E84 Flame Spread Index (FSI) of most insulating materials, however, this does not apply to cellulose insulation. The [Consumer Products Safety Commission \(CPSC\)](#), with the help of NIST, determined that the ASTM E970 method is a better test for attic insulation. The method uses a radiant panel to measure the critical radiant flux value (CRF). The CPSC mandates cellulose insulation to have a CRF of 0.12 or higher. For comparison, a CRF of 0.12 or higher will have a FSI of 25 or lower, which the International Building Code allows for a concealed insulation.

Big Burn Demonstrations

Notable demonstration projects have taken place to show the impacts insulation has on a residential fire. The "Big Burn of 1978" in Warwick, Rhode Island was conducted by Rhode Island Energy, a cellulose insulation manufacturer. Three wood structures, one uninsulated, one insulated with fiberglass insulation, the other insulated with cellulose insulating, were burned. The results of this demonstration showed that insulated structures remained intact longer than the uninsulated structure, whose ceiling collapsed after only 11 minutes and structure collapsed after 65 minutes. The ceiling in the house insulated with fiberglass collapsed after 21 minutes and the structure collapsed after two hours and 17 minutes. The ceiling in the house insulated with cellulose collapsed after 70 minutes of burning and the entire structure remained intact. These results were verified during the "Big Burn of 1998" conducted by GreenStone Industries, also a cellulose insulation manufacturer, at the Maryland Fire and Rescue Institute under the supervision of both The Code Consortium, Inc. and Steven Winter Associates. The results of this project showed that the structure insulated with cellulose maintained structural integrity for almost 25 minutes longer than the fiberglass insulated structure.

Know Your Attic's Heat Sources

These tests and demonstration projects help with real life decision-making, but there are some other important considerations. For example, if blow-in cellulose insulation is chosen for the attic cavity, it is of great importance to consider where the heat sources are located. Some possible heat sources include HVAC equipment, electrical wiring, switches, junction boxes, and recessed can lights. The only recessed lights that can be safely covered with thermal insulation are "IC rated" fixtures, this is written on the label inside the can. Before blowing in cellulose insulation, make sure all can fixtures are accounted for and that they are properly protected if they are not IC rated. If not protected from any type of insulation material, heat may build up around these heat sources and cause combustion.



Other Considerations

There are also special considerations for the fire department when they are dealing with a fire in a structure that has been insulated with cellulose. The properties of the dense, fire retardant cellulose insulation restrict the supply of oxygen within the insulation, causing combustion in the assembly to spread slowly instead of rapidly in a full blaze. "When fire occurs in a cellulose-insulated structure the fire company often does have to [inspect] more thoroughly and take extra care to seek out hidden hot spots in insulated assemblies," says Dan Lea, Executive Director of CIMA. "The fire company may have to do more work during overhaul and clean-up, but the fact that there is anything left to overhaul may be because of the cellulose insulation."



The fire resistance properties of insulating materials are very important to consider when choosing between the different types of insulation that are available. Cellulose products have been found to meet building codes and provide extra minutes for occupants to exit to safety during a fire.

Member Bulletin Board

Welcome Provisional Green Building Program Members

The Green Building Program would like to welcome our newest provisional members, especially those who attended the December Basics seminar.

Company Name	Contact Name	Phone Number
ILCOR	Kathy Wimbish	512/476-7568
C & C Engineering *	Matt Stevens	512/467-7003
Jodi Lane	Jodie Lane	512/458-1427
Vehko Architects *	Lotte Vehko	512/458-9791
The Henderson Group	Marla Henderson	512/495-1885
G. Creek Construction *	Matt Haralson	512/452-5640
DPR Construction, Inc. *	Leah Payne	512/345-7699
The Beck Group	Matt Williamson	512/997-5000
Thrailkill Construction *	Paul Thrailkill	512/916-9450
LaRue Architects *	James LaRue	512/347-1688
Sun & Stone *	Mark Lind	512/708-1458
Alpine Interiors	Kimberlee Elsner	512/732-2300
The Warrick Company *	Mark Warrick	512/467-1313
Larry Anderson Construction*	Larry Anderson	512/657-3858

*attended Green Building Basics in December 2002.

Hot On Austin

Beginning the 1st Sunday in February, look for 13 new commercials from the Green Building Program to air during the HotOn! Austin show, Sundays at 10:30 am on channel 24 (KVUE). The show is aimed at residential realtors and prospective home buyers.