

Code
Compliance
Case Studies



A case study of residential energy-code testing requirements in Georgia

Residential
Performance Testing
in Georgia

Winter 2012



Fast Facts

1,300+ Approximate number of certified DET Verifiers in Georgia

\$300 Average cost for performance testing

700 Approximate number of local governments in Georgia

9.6 million Population of Georgia

On January 1, 2011, the 2009 International Energy Conservation Code (IECC) took effect as the mandatory state minimum standard energy code for the state of Georgia. The 2011 Georgia Amendments to the 2009 IECC included a requirement for mandatory building-envelope and duct-tightness testing, by certified individuals, on all new residential construction. Anecdotal evidence suggests that this requirement has improved compliance rates. Building officials agreed that it would be difficult, if not impossible, for them to purchase the equipment themselves and train their staff to conduct the performance testing.

Georgia's success in implementing this requirement has largely been due to:

- an open consensus process with active involvement from all stakeholders;
- putting the onus on stakeholders to provide justification and cost data to support their position, instead of a state agency; and
- a code review and adoption process with a defined schedule and hard deadlines by which work must be completed.

Industry representatives involved with code adoption in multiple states have suggested that Georgia's open, streamlined consensus process for reviewing and adopting new codes is a model for other states and jurisdictions to follow. Georgia's process and performance testing requirements were among the reasons the Building Codes Assistance Project selected the state as one of its "Ten Places to Watch in 2010."ⁱ

Background

The Office of Construction Codes and Industrialized Buildings at the Georgia Department of Community Affairs (DCA) is responsible for promulgating the adoption of Georgia's 11 state minimum standard codes, including the IECC. Georgia law (O.C.G.A. §8-2-(20-31)) establishes the state minimum standard codes and authorizes DCA to adopt any subsequent edition, as well as any appropriate amendments with the approval of the DCA Board. The same Georgia law also establishes a 21-member State

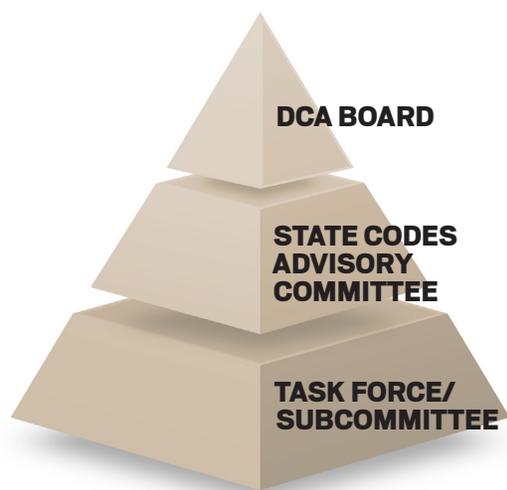


Figure 1. Hierarchy of Georgia's Construction Codes Adoption Process

Codes Advisory Committee (SCAC), and prescribes the composition of the committee, to oversee the adoption and revision of the state minimum standard codes. The members of the SCAC are appointed by the commissioner of DCA and typically meet three times per year, in January, April, and July. The adoption and revision of the IECC must also receive approval from the Division of Energy Resources at the Georgia Environmental Finance Authority (State Energy Office) prior to taking effect.

2009 IECC Adoption Process

The process for the adoption of the 2009 IECC is the same as the adoption process for Georgia's other state minimum standard codes. At the July 2009 meeting of the SCAC, the committee authorized the formation of the 2009 IECC Task Force. Following standard procedure, both the chairman and vice chairman of the task force were chosen from the SCAC. From August through October of 2009, DCA staff solicited nominations from various construction industry stakeholders across the state to fill the remaining positions on the task force. After reviewing all nominations, the chairman of the SCAC recommended task force members to the Commissioner of DCA. The Commissioner makes the final appointment of members to serve on the task force.

The 2009 IECC Task Force had 17 members representing a cross section of the construction industry. At its first meeting in November 2009, the task force was given its charge of assessing the differences between the existing Georgia Energy Code (2006 IECC with Georgia Amendments) and the 2009 IECC, and making a recommendation regarding adoption of the latter and any necessary Georgia supplements and amendments. The general public was permitted to submit proposed amendments to the 2009 IECC until December 15, 2009. December 15 of each year is the annual deadline for the general public to submit proposed amendments to any of Georgia's state minimum standard codes. Task force members were permitted to

Stakeholders Represented on the IECC Task Force (1 or more members)

State Codes Advisory Committee	Building Owners and Managers
Conditioned Air Contractors	Profession of Engineering
Electric Utilities	Profession of Architecture
Building Officials	Apartment Association
Gas Utilities	General Contractors
Home Builders	Georgia Environmental Finance Authority
Insulation Industry	Construction Suppliers

Stakeholder Involvement

Georgia encourages stakeholders to be involved in the code review and adoption process and welcomes code amendment proposals. However, it is also expected that the proponents explain and defend their proposals with appropriate cost and energy-savings data. DCA staff provide support to the SCAC and task forces, but are not responsible for determining potential cost and energy-savings figures for code change proposals. Putting the onus on proponents or opponents to provide information for or against a proposal keeps the state impartial in the adoption process.

propose amendments at any time during the review process. All task force and SCAC meetings were open to the public and interested parties were encouraged to attend and provide input. Having active engagement from stakeholders during the review process greatly reduces the chances for opposition and derailing adoption during the formal public hearing.

Between December 2009 and April 2010, the task force conducted five meetings to discuss the proposed amendments to the 2009 IECC. A subcommittee formed to review several “hot topic” items, including the performance testing requirement. The subcommittee meeting was open to the public and it provided for a focused discussion on specific items that needed resolution. The subcommittee reached a decision and its recommendation was then reported back to the full task force for a formal vote.

At its final meeting on April 22, 2010, the task force had concluded its charge and took a final vote to recommend to the SCAC the adoption of the 2009 IECC with amendments. At its meeting in July 2010, the SCAC voted to approve the recommendation of the task force and recommend the adoption of the 2009 IECC with amendments to the DCA Board. In September 2010, a formal public hearing was held. All public comments offered at the public hearing were then relayed to the DCA Board prior to its vote to approve the SCAC’s recommendation to adopt. Finally, the DCA filed the 2009 IECC and amendments with the Georgia Secretary of State in December 2010 and the new code took effect on January 1, 2011.

Georgia’s Performance Testing Requirements

Georgia’s 2011 Amendmentsⁱⁱ to the 2009 IECC require building-envelope and duct-leakage testing to be performed by a certified Duct and Envelope Tightness (DET) Verifier. The amendments define a DET Verifier as someone who holds a Home Energy Rating System (HERS) Certification or

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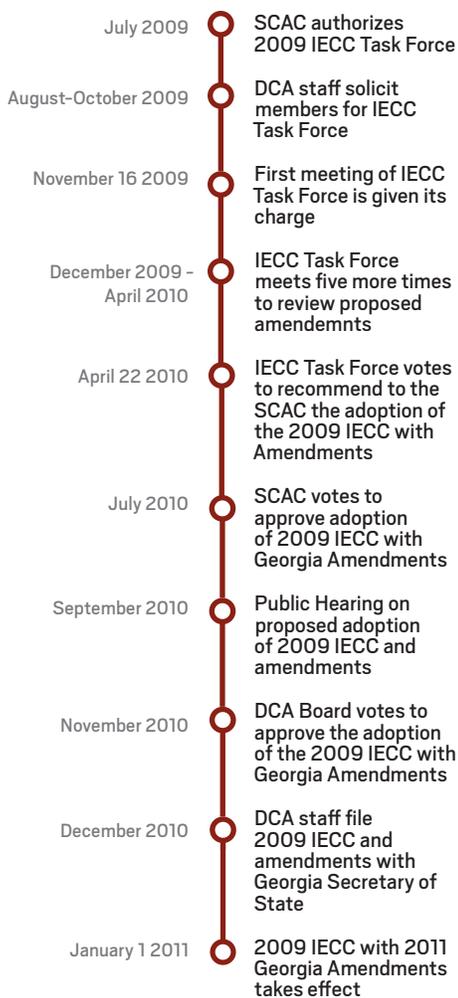


Figure 2. Timeline for Georgia's Adoption of the 2009 IECC

a Building Performance Institute (BPI) Building Analyst Certification; is a Home Performance with Energy Star Contractor; or who completes the 8-hour DET Verifier Course, as approved by DCA, and successfully passes the practical and written exam. The builder is responsible for hiring someone with one of these certifications to perform the building-envelope and duct-leakage testing. The results of the testing would then be submitted to the local building official. It is estimated that the testing will cost around \$300 per home.

Although Georgia's code does require that the testing be done for new residential construction and that it be done by a certified individual, it does not require that individual to be an independent third party. As a compromise with the home-building industry, if a home builder or any employee of a home builder held one of the certifications, they could perform their own testing. This could be seen as a loophole in Georgia's code, but officials believe that home builders who are willing to expend the time, effort, and money to obtain the proper certification, as well as purchase the equipment necessary for the testing, will be inclined to ensure that their employees and/or sub-contractors are performing high quality, code-compliant work. Another 2011 Georgia Amendment, which adds an optional Appendix C, Third Party Verification, to the 2009 IECC, would require third-party verification of all energy code requirements when the Appendix is adopted by the local jurisdiction.

Certifying DET Verifiers

DCA does not perform the trainings to certify DET Verifiers, but approves qualified organizations wishing to offer the training. The organizations that offer the training are responsible for tracking the individuals who achieve the certification. Since the performance testing requirements took effect, there have been more than 1,300 DET Verifiers certified.

Responsibility of Local Building Officials

Although a builder or building owner is responsible for contracting with a certified DET Verifier, this compliance model relies on local building officials to verify that the testing was done and that it was done by a certified individual. Therefore, this model does require some administrative oversight on the part of the local building official, but it is substantially less than if the building official had to conduct the performance testing. As with most code requirements, the DET Verifier requirement does allow for some level of inconsistency in enforcement across jurisdictions. Nevertheless, Georgia's DET Verifier program can be an effective model for local and state governments wanting to enforce the energy code but lacking the resources for in-house inspection or administrative oversight.

Concluding Remarks

Georgia's DET Verifier requirements prove that states can enact and implement performance testing requirements through a consensus process with very little administrative or cost burden placed on the state or its local governments. As more states and local jurisdictions are looking to adopt the 2012 IECC, which requires duct and envelope leakage testing in new residential construction, Georgia's lead in implementing a statewide performance testing program should serve as a model and proof that it can be done.

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About the Institute for Market Transformation

The Institute for Market Transformation (IMT), founded in 1996, is a Washington, D.C.-based 501(c)(3) nonprofit organization promoting energy efficiency, green building, and environmental protection in the United States and abroad. The prevailing focus of IMT's work is energy efficiency in buildings. In particular, IMT aims to strengthen market recognition of the link between building energy efficiency and financial value. Our activities include technical and market research, policy and program development, and promotion of best practices and knowledge exchange. IMT is the U.S. hub of the Global Buildings Performance Network. For more information, visit www.imt.org.

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The Global Buildings Performance Network (GBPN) has a mission to significantly reduce greenhouse gas emissions associated with building energy use by

- Promoting best practices in building energy efficiency and performance
- Offering world class energy efficiency expertise to policymakers and business leaders
- Advancing policies and programs that promote low carbon, energy-efficient buildings worldwide

The GBPN operates in the United States, Europe, China, and India with its global center in Paris. For more information, visit www.globalbuildings.org.

i <http://www.bcap-ocean.org/ten-places-watch-2010>

ii 2011 Georgia Amendments to the 2009 IECC