Georgia State Supplements and Amendments to the International Energy Conservation Code

(2006 Edition)

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GEORGIA STATE MINIMUM STANDARD ENERGY CODE
(INTERNATIONAL ENERGY CONSERVATION CODE
WITH GEORGIA STATE SUPPLEMENTS AND AMENDMENTS)

The INTERNATIONAL ENERGY CONSERVATION CODE, 2006 Edition, published by the International Code Council, when used in conjunction with these Georgia State Supplements and Amendments, shall constitute the official *Georgia State Minimum Standard Energy Code.*

GEORGIA STATE SUPPLEMENTS AND AMENDMENTS

SCOPE:

Each chapter of these Georgia State Supplements and Amendments corresponds with a chapter of the *International Energy Conservation Code* (*IECC*).

- Chapter 1: Administration.
- Chapter 2: Definitions.
- Chapter 3: Climate Zones.
    - "Climate zones from Figure 301.1 or Table 301.1 shall be used in determining the applicable requirements from Chapters 4 and 5…"
- Chapter 4: Residential Energy Efficiency.
    - Compliance Pathways for Low-Rise Residential Construction:
        - Any of those delineated in this chapter; or
        - *REScheck*[1]
- Chapter 5: Commercial Energy Efficiency.
    - Compliance Pathways for Commercial and High-Rise Residential Construction:
        - Any of those delineated in this chapter; or
        - *COMcheck*[1]
- Chapter 6: Referenced Standards.
- Appendices A-E
    - Throughout the appendices there is information that may be helpful in meeting and understanding the *Georgia State Minimum Standard Energy Code.* In cases of conflict, refer to the *IECC* for clarification.

1. *REScheck* and *COMcheck* are computer programs developed by Pacific Northwest National Laboratories for the U.S. Department of Energy (D.O.E.) to assist in demonstration of compliance with the *IECC*. They may be obtained from the D.O.E. by calling (800) 270-CODE (2633) or free of charge online at www.energycodes.gov. When following the *REScheck* compliance pathway, select the Georgia Version. When following the *COMcheck* compliance pathway, select the Georgia Version (based on *ASHRAE/IESNA Standard 90.1-2004* [with 2008 Georgia State Supplements and Amendments to the 2006 *IECC*]).

The 'basic requirements' of the *IECC* apply to all compliance methods.

Where these Georgia State Supplements and Amendments conflict with either the *IECC* or *ASHRAE/IESNA Standard 90.1*, these Georgia State Supplements and Amendments shall take precedence.

Air infiltration accounts for substantial heat loss, heat gain and moisture migration in a building. Proper sealing around all doors, windows and other envelope penetrations through the walls, ceiling and foundation is as important to code compliance as are proper insulation R-values and component U-factors.

It is not the intention of this code to abridge safety or health. Where the *IECC* and these Georgia State Supplements and Amendments conflict with other mandatory *State Minimum Standard Codes*, the *IECC* and these Georgia State Supplements and Amendments shall be enforced as written provided safety, health or environmental requirements of other mandatory *State Minimum Standard Codes* are not abridged.

APPENDICES:

Appendices are not enforceable unless they are specifically referenced in the body of the code or adopted by the Department of Community Affairs or the authority having jurisdiction.

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Revise the International Energy Conservation Code, 2006 Edition, as follows:

CHAPTER 1
ADMINISTRATION

SECTION 101
SCOPE AND GENERAL REQUIREMENTS

*Delete Section 101.1, 'Title', without substitution.
(Effective January 1, 2008)

*Delete Section 101.4.4, 'Change in occupancy', without substitution.
(Effective January 1, 2008)

SECTION 102
MATERIALS, SYSTEMS AND EQUIPMENT

*Revise Section 102.1.1, 'Building thermal envelope insulation', by adding at end as follows:

102.1.1 Building thermal envelope insulation.
(Beginning of section left unchanged.)
...the job site. Insulation should be installed and the envelope sealed in accordance with Appendix A, 'AIR SEALING KEY POINTS'.
(Effective January 1, 2008)

SECTION 104
CONSTRUCTION DOCUMENTS

*Delete SECTION 104, 'CONSTRUCTION DOCUMENTS', without substitution.
(Effective January 1, 2008)

SECTION 105
INSPECTIONS

*Delete SECTION 105, 'INSPECTIONS', without substitution.
(Effective January 1, 2008)

CHAPTER 2
DEFINITIONS

*Add definition of 'AIR BARRIER' as follows:

AIR BARRIER. Any material that blocks air flow between a conditioned space and an unconditioned space, including necessary sealing to block excessive air flow at edges and seams. (Information on proper air sealing may be found in Appendix A, 'AIR SEALING KEY POINTS', on the U.S. Department of Energy's Building America website [www.eere.energy.gov/buildings/building_america], and in the Energy and Environmental

Building Association's [EEBA's] Builders Guides [www.eeba.org]. These references include guidance on identifying and sealing air barriers.)
(Effective January 1, 2008)

*Add definition of 'ATTIC KNEEWALL' as follows:

ATTIC KNEEWALL. Any vertical or near-vertical wall in the building envelope that has conditioned space on one side and unconditioned attic space on the other side. If the envelope features the insulation installed along the sloped ceiling, the vertical wall is considered an interior wall and thus does not require insulation.
(Effective January 1, 2008)

*Add definition of 'GREEN ROOF' as follows:

GREEN ROOF. Roof envelope surfaces that are either extensively and/or intensively vegetated, containing from 3 inches to 24 inches (76 mm to 610 mm) or more of growing medium, applied over a multi-layered waterproofing membrane that includes insulation and drainage/moisture retention elements.
(Effective January 1, 2008)

*Revise definition of '*R*-VALUE (THERMAL RESISTANCE)' by adding at end as follows:

***R*-VALUE (THERMAL RESISTANCE).**
(Beginning of definition left unchanged.)
...per unit area ($h \cdot ft^2 \cdot °F/Btu$) [$(m^2 \cdot K)/W$]. All *R*-values shall be stabilized (aged minimum 2 years) *R*-values.
(Effective January 1, 2008)

CHAPTER 4
RESIDENTIAL ENERGY EFFICIENCY

SECTION 401
GENERAL

*Revise Section 401.3, 'Certificate', by revising first sentence and adding at end as follows:

401.3 Certificate. A permanent certificate shall be readily accessible and shall be posted on or near the electrical distribution panel or air handler. The certificate shall be…
(Middle part of section left unchanged.)
…water heating equipment. The certificate shall also list the calculated heating load, sensible cooling load, latent cooling load and cfm for space conditioning.
(Effective January 1, 2008)

SECTION 402
BUILDING THERMAL ENVELOPE

*Delete Tables 402.1.1, 'Insulation And Fenestration Requirements By Component[a]', and 402.1.3, 'Equivalent *U*-Factors[a]', and substitute by adding new Table 402.1.1, 'Insulation And Fenestration Requirements By Component[a]', as follows:

TABLE 402.1.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION *U*-FACTOR[b]	SKYLIGHT *U*-FACTOR[b]	GLAZED FENESTRATION SHGC[b]	CEILING *R*-VALUE[c]	WOOD FRAME WALL *R*-VALUE[d]	ATTIC KNEEWALL[e]
2	0.65	0.75	0.40	*R*-30 or *U*-0.030	*R*-13 or *U*-0.082	*R*-18 or *U*-0.065
3	0.65	0.65	0.40	*R*-30 or *U*-0.030	*R*-13 or *U*-0.082	*R*-18 or *U*-0.065
4	0.40	0.60	0.40	*R*-38 or *U*-0.025	*R*-13 or *U*-0.082	*R*-18 or *U*-0.065

CLIMATE ZONE	MASS WALL *R*-VALUE	FLOOR *R*-VALUE[f]	BASEMENT WALL *R*-VALUE[g,j]	SLAB *R*-VALUE AND DEPTH[h]	CRAWL SPACE WALL *R*-VALUE[i,j]
2	*R*-5 or *U*-0.141	*R*-13 or *U*-0.064	*R*-0 *U*-0.36	0	*R*-0 *U*-0.477
3	*R*-5 or *U*-0.141	*R*-19 or *U*-0.047	5/13 *U*-0.136	0	5/13 *U*-0.136
4	*R*-5 or *U*-0.141	*R*-19 or *U*-0.047	5/13 *U*-0.136	0	5/13 *U*-0.136

For SI: 1 foot = 304.8 mm.

a. *R*-values are minimums. *U*-factors and SHGC are maximums. *R*-19 shall be permitted to be compressed into a 2 × 6 cavity. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.

b. The fenestration *U*-factor column excludes skylights. The SHGC column applies to all glazed fenestration, including doors 50 percent or more glazed. One door or window (or up to 15 square feet [1.4 m^2] of glazed fenestration) may be exempt from meeting the *U*-factor and SHGC.

c. Ends and sides of ceiling joist cavity shall be blocked with an approved air barrier. Flat ceiling insulation shall be in contact with interior side of ceiling. Ceiling areas without attic space in Climate Zone 4 may be *R*-30 (maximum of 25 percent of ceiling area). For HVAC platform and floored access path areas, ceiling insulation may be reduced to *R*-19.

d. All vertical insulation shall be in substantial contact with an air barrier on all six (6) sides.

Exceptions:

1. Unfinished basements (insulation shall be restrained to stay in place).
2. On interior side of wall in Climate Zones 2 and 3 behind tubs, showers and fireplaces (insulation shall be restrained to stay in place).

e. *R*-13 + *R*-5, *R*-15 + *R*-3, or *R*-19 compressed into a 2 × 6 cavity is deemed to meet *R*-18 minimum requirement. Attic side shall have a sealed air barrier.

f. Floor insulation shall be installed to maintain permanent contact with the underside of the subfloor decking, and insulation ends shall be blocked. Cantilevered floors shall be *R*-30 and band area above exterior wall shall be blocked.

g. *R*-5 is mass and *R*-13 is cavity and band. For basements with no direct conditioning, either the floor or all of the basement walls shall be insulated. For basements with direct conditioning, all of the basement walls shall be insulated.

h. Unheated slabs. Heated slabs shall have exterior edge insulated to *R*-5 to a depth of 2 feet (610 mm). Insulation located below grade shall be in compliance with Section 402.2.7.

i. See Section 402.2.8 of these Georgia State Supplements and Amendments.

j. Consideration should be given for mold, moisture, and for termite inspection and treatment.

Georgia is Climate Zone 3

Exceptions:

1. Climate Zone 2 Counties: Appling, Atkinson, Bacon, Baker, Berrien, Brantley, Brooks, Bryan, Camden, Charlton, Chatham, Clinch, Colquitt, Cook, Decatur, Echols, Effingham, Evans, Glynn, Grady, Jeff Davis, Lanier, Liberty, Long, Lowndes, McIntosh, Miller, Mitchell, Pierce, Seminole, Tattnall, Thomas, Toombs, Ware and Wayne.
2. Climate Zone 4 Counties: Banks, Catoosa, Chattooga, Dade, Dawson, Fannin, Floyd, Franklin, Gilmer, Gordon, Habersham, Hall, Lumpkin, Murray, Pickens, Rabun, Stephens, Towns, Union, Walker, White and Whitfield.

(Effective January 1, 2008)

*Revise Section 402.2.8, 'Crawl space walls', to read as follows:

402.2.8 Crawl space walls. As an alternative to insulating floors over crawl spaces, crawl space walls shall be permitted to be insulated when the crawl space is not vented to the outside. Crawl space wall insulation shall be permanently fastened to the wall and extend downward from the floor to within 9 inches (229 mm) of the finished interior grade adjacent to the foundation wall. A 3-inch (76 mm) inspection/view strip immediately below the floor joists shall be provided to permit inspections for termites. Exposed earth in unvented crawl space foundations shall be covered with a continuous vapor retarder (minimum 6-mil [0.15 mm]). All joints of the vapor retarder shall overlap by 6 inches (152 mm) and be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches (152 mm) up the stem wall and shall be attached and sealed to the stem wall.
(Effective January 1, 2008)

*Add new Section 402.3.7, 'Weather-stripped access doors', as follows:

402.3.7 Weather-stripped access doors. Weather-stripped access doors (maximum *U*-0.35), weather-stripped hatches/scuttle hole covers (minimum *R*-19 insulation or maximum *U*-0.05), or weather-stripped disappearing/pull-down stairs (maximum *U*-0.35) shall be calculated as a sub-element with a *U*-factor of *U*-0.05 or insulation *R*-value of *R*-19. Weather-stripping, factory applied or approved by the local building official, shall be deemed to meet the sealing requirements of Section 402.4.1.
(Effective January 1, 2008)

*Delete Option #3 from Section 402.4.3, 'Recessed lighting'.
(Effective January 1, 2008)

*Add new Section 402.4.4, 'Air barriers', as follows:

402.4.4 Air barriers. Materials used as air barriers shall have air leakage of less than 0.004 cfm per square foot (0.02 L/s/m^2) when tested in accordance with ASTM E 2357 or ASTM E 2178, and ASTM E 283.
(Effective January 1, 2008)

*Add new Section 402.7, 'Minimum insulation values for envelope components. (Mandatory).', as follows:

402.7 Minimum insulation values for envelope components. (Mandatory). The minimum insulation *R*-values and maximum fenestration *U*-factors for thermal envelope components in projects complying under Sections 402.1 through 402.3 (Prescriptive and Total UA, including use of RES*check*) shall be according to Table 402.7.1 of these Georgia State Supplements and Amendments.
(Effective January 1, 2008)

*Add new Table 402.7.1, 'Summary Of Minimum Insulation *R*-Values And Maximum *U*-Factors For Envelope Components', as follows:

TABLE 402.7.1
SUMMARY OF MINIMUM INSULATION *R*-VALUES
AND MAXIMUM *U*-FACTORS FOR ENVELOPE COMPONENTS

ELEMENT[1]	MODE	MINIMUM *R*-VALUE OR MAXIMUM *U*-FACTOR
Walls Stud	Heating or Cooling	*R*-13
Walls Masonry/CMU[2]	Heating or Cooling	*R*-5
Attic Kneewalls[3]	Heating or Cooling	*R*-18
Roof/Ceiling	Heating or Cooling	*R*-19
Floor Over Unheated Spaces	Heating or Cooling	*R*-13
Windows[4]	Heating or Cooling	*U*-0.65 with Maximum 0.40 SHGC

1. Weather-stripped access doors (maximum *U*-0.35), weather-stripped hatches/scuttle hole covers (minimum *R*-19 insulation or maximum *U*-0.05), or weather-stripped disappearing/pull-down stairs (maximum *U*-0.35) shall be deemed to meet the minimum insulation *R*-values of any element.
2. Any mass wall above or below grade.
   Exception: Climate Zone 2.
3. See definition of 'ATTIC KNEEWALL' in these Georgia State Supplements and Amendments.
4. Maximum window *U*-factor shall be 0.65 and maximum SHGC shall be 0.40.

(Effective January 1, 2008)

SECTION 403
SYSTEMS (Mandatory)

*Revise Section 403.2.1, 'Insulation', to read as follows:

403.2.1 Insulation. Supply and return ducts in unconditioned attics and exterior locations shall be insulated to a minimum of *R*-8. All other ducts located outside the building thermal envelope shall be insulated to a minimum of *R*-6.

Exception: Ducts or portions thereof located completely inside the building thermal envelope.

(Effective January 1, 2008)

*Revise Section 403.2.2, 'Sealing', to read as follows:

403.2.2 Sealing. All ducts, air handlers, filter boxes, and building cavities used as ducts shall be sealed. Joints and seams shall comply with Section M1601.3.1 of the *International Residential Code*. Air handlers with a manufacturer's designation for an air leakage of no more than 2 percent of the design air flow rate when tested at an air pressure of 1-inch water gauge when all air inlets, air outlets, and condensate drain port(s) are sealed shall be deemed sealed. Air handlers with filter boxes shall be tested with the filter box in place.

(Effective January 1, 2008)

CHAPTER 5
COMMERCIAL ENERGY EFFICIENCY

SECTION 501
GENERAL

*Add new Section 501.3, 'ASHRAE/IESNA Standard 90.1 compliance pathway', (*title only*) as follows:

501.3 ASHRAE/IESNA Standard 90.1 compliance pathway.
(Effective January 1, 2008)

*Add new Section 501.3.1, 'Permanently vegetative green roofs', as follows:

501.3.1 Permanently vegetative green roofs. When following the ASHRAE/IESNA Standard 90.1 compliance pathway, any portions of a roof that are permanently vegetative green roofs may use the Roof *U*-Factor Multipliers of [ASHRAE/IESNA Standard 90.1] Table 5.5.3.1 for calculation of minimum roof *U*-factor.
(Effective January 1, 2008)

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*Add new Table 501.3.2, 'Assembly *U*-Factors For Metal Building Roofs', (ASHRAE/IESNA Standard 90.1 Table A2.3, 'Assembly *U*-Factors For Metal Building Roofs', *with revisions*) as follows:

TABLE 501.3.2
ASSEMBLY *U*-FACTORS FOR METAL BUILDING ROOFS[1]

INSULATION SYSTEM	RATED *R*-VALUE OF INSULATION[2]	TOTAL RATED *R*-VALUE OF INSULATION	OVERALL *U*-FACTOR FOR ENTIRE BASE ROOF ASSEMBLY	OVERALL *U*-FACTOR FOR ASSEMBLY OF BASE ROOF PLUS CONTINUOUS INSULATION (UNINTERRUPTED BY FRAMING) RATED *R*-VALUE OF CONTINUOUS INSULATION					
				R-5.6	*R*-11.2	*R*-16.8	*R*-22.4	*R*-28.0	*R*-33.6
STANDING SEAM ROOFS WITH THERMAL BLOCKS									
SINGLE LAYER	None	0	1.280	0.162	0.087	0.059	0.045	0.036	0.030
	R-6	6	0.167	0.086	0.058	0.044	0.035	0.029	0.025
	R-10	10	0.097	0.063	0.046	0.037	0.031	0.026	0.023
	R-11	11	0.092	0.061	0.045	0.036	0.030	0.026	0.022
	R-13	13	0.083	0.057	0.043	0.035	0.029	0.025	0.022
	R-16	16	0.072	0.051	0.040	0.033	0.028	0.024	0.021
	R-19	19	0.065	0.048	0.038	0.031	0.026	0.023	0.020
DOUBLE LAYER	*R*-10+*R*-10	20	0.063	0.047	0.037	0.031	0.026	0.023	0.020
	R-10+*R*-11	21	0.061	0.045	0.036	0.030	0.026	0.023	0.020
	R-11+*R*-11	22	0.060	0.045	0.036	0.030	0.026	0.022	0.020
	R-10+*R*-13	23	0.058	0.044	0.035	0.029	0.025	0.022	0.020
	R-11+*R*-13	24	0.057	0.043	0.035	0.029	0.025	0.022	0.020
	R-13+*R*-13	26	0.055	0.042	0.034	0.029	0.025	0.022	0.019
	R-10+*R*-19	29	0.052	0.040	0.033	0.028	0.024	0.021	0.019
	R-11+*R*-19	30	0.051	0.040	0.032	0.027	0.024	0.021	0.019
	R-13+*R*-19	32	0.049	0.038	0.032	0.027	0.023	0.021	0.019
	R-16+*R*-19	35	0.047	0.037	0.031	0.026	0.023	0.020	0.018
	R-19+*R*-19	38	0.046	0.037	0.030	0.026	0.023	0.020	0.018
SCREW DOWN ROOFS									
	R-10	10	0.153	0.082	0.056	0.043	0.035	0.029	0.025
	R-11	11	0.139	0.078	0.054	0.042	0.034	0.028	0.025
	R-13	13	0.130	0.075	0.053	0.041	0.033	0.028	0.024
	R-19	19	0.085	0.058	0.044	0.035	0.029	0.025	0.022
FILLED CAVITY WITH THERMAL BLOCKS									
	R-19+*R*-10	29	0.041	0.033	0.028	0.024	0.021	0.0198	0.017

1. Based on purlins spaced five feet (1524 mm) on center. For other purlin spacing use Figure 6-2 to calculate overall *U*-factor.
2. Multiple *R*-values are listed in order from inside to outside.

(Effective January 1, 2008)

*Delete Tables 503.2.3(1), 503.2.3(2) and 503.2.3(5) and substitute as follows:

TABLE 503.2.3(1)
UNITARY AIR CONDITIONERS AND CONDENSING UNITS, ELECTRICALLY OPERATED, MINIMUM EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE	SIZE CATEGORY	SUB-CATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY[b]	TEST PROCEDURE[a]
Air Conditioners, Air Cooled	< 65,000 Btu/h[d]	Split System	13.0 SEER	ARI 210/240
		Single Package	13.0 SEER	
	≥ 65,000 Btu/h and < 135,000 Btu/h	Split System and Single Package	10.3 EER[c] (before Jan 1, 2010) 11.2 EER[c] (as of Jan 1, 2010)	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Split System and Single Package	9.7 EER[c] (before Jan 1, 2010) 11.0 EER[c] (as of Jan 1, 2010)	ARI 340/360
	≥ 240,000 Btu/h and < 760,000 Btu/h	Split System and Single Package	9.5 EER[c] 9.7 IPLV[c] (before Jan 1, 2010) 10.0 EER[c] 9.7 IPLV[c] (as of Jan 1, 2010)	
	≥ 760,000 Btu/h	Split System and Single Package	9.2 EER[c] 9.4 IPLV[c] (before Jan 1, 2010) 9.7 EER[c] 9.4 IPLV[c] (as of Jan 1, 2010)	
Through-the-Wall, Air Cooled	< 30,000 Btu/h[d]	Split System	10.9 SEER (before Jan 23, 2010) 12.0 SEER (as of Jan 23, 2010)	ARI 210/240
		Single Package	10.6 SEER (before Jan 23, 2010) 12.0 SEER (as of Jan 23, 2010)	
Air Conditioners, Water and Evaporatively Cooled	< 65,000 Btu/h	Split System and Single Package	12.1 EER	ARI 210/240
	≥ 65,000 Btu/h and < 135,000 Btu/h	Split System and Single Package	11.5 EER[c]	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Split System and Single Package	11.0 EER[c]	ARI 340/360
	≥ 240,000 Btu/h	Split System and Single Package	11.5 EER[c]	

For SI: 1 British thermal unit per hour = 0.2931 W.
a. Chapter 6 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
b. IPLVs are only applicable to equipment with capacity modulation.
c. Deduct 0.2 from the required EERs and IPLVs for units with a heating section other than electric resistance heat.
d. Single-phase air-cooled air conditioners < 65,000 Btu/h are regulated by the National Appliance Energy Conservation Act of 1987 (NAECA), SEER values are those set by NAECA.

(Effective January 1, 2008)

TABLE 503.2.3(2)
UNITARY AND APPLIED HEAT PUMPS, ELECTRICALLY OPERATED,
MINIMUM EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE	SIZE CATEGORY	SUB-CATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY[b]	TEST PROCEDURE[a]
Air Cooled (Cooling Mode)	< 65,000 Btu/h[d]	Split System	13.0 SEER	ARI 210/240
		Single Package	13.0 SEER	
	≥ 65,000 Btu/h and < 135,000 Btu/h	Split System and Single Package	10.1 EER[c] (before Jan 1, 2010) 11.0 EER[c] (as of Jan 1, 2010)	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Split System and Single Package	9.3 EER[c] (before Jan 1, 2010) 10.6 EER[c] (as of Jan 1, 2010)	ARI 340/360
	≥ 240,000 Btu/h	Split System and Single Package	9.0 EER[c] 9.2 IPLV[c] (before Jan 1, 2010) 9.5 EER[c] 9.2 IPLV[c] (as of Jan 1, 2010)	
Through-the-Wall (Air Cooled, Cooling Mode)	< 30,000 Btu/h[d]	Split System	10.9 SEER (before Jan 23, 2010) 12.0 SEER (as of Jan 23, 2010)	ARI 210/240
		Single Package	10.6 SEER (before Jan 23, 2010) 12.0 SEER (as of Jan 23, 2010)	
Water Source (Cooling Mode)	< 17,000 Btu/h	86°F Entering Water	11.2 EER	ARI/ASHRAE-13256-1
	≥ 17,000 Btu/h and < 135,000 Btu/h	86°F Entering Water	12.0 EER	
Groundwater Source (Cooling Mode)	< 135,000 Btu/h	59°F Entering Water	16.2 EER	ARI/ASHRAE-13256-1
Ground Source (Cooling Mode)	< 135,000 Btu/h	77°F Entering Water	13.4 EER	ARI/ASHRAE-13256-1
Air Cooled (Heating Mode)	< 65,000 Btu/h[d] (Cooling Capacity)	Split System	7.7 HSPF	ARI 210/240
		Single Package	7.7 HSPF	
	≥ 65,000 Btu/h and < 135,000 Btu/h (Cooling Capacity)	47°F db/43°F wb Outdoor Air	3.2 COP (before Jan 1, 2010) 3.3 COP (as of Jan 1, 2010)	
	≥ 135,000 Btu/h (Cooling Capacity)	47°F db/43°F wb Outdoor Air	3.1 COP (before Jan 1, 2010) 3.2 COP (as of Jan 1, 2010)	ARI 340/360
Through-the-Wall (Air Cooled, Heating Mode)	< 30,000 Btu/h[d]	Split System	7.1 HSPF (before Jan 23, 2010) 7.4 HSPF (as of Jan 23, 2010)	ARI 210/240
		Single Package	7.0 HSPF (before Jan 23, 2010) 7.4 HSPF (as of Jan 23, 2010)	
Water Source (Heating Mode)	< 135,000 Btu/h (Cooling Capacity)	68°F Entering Water	4.2 COP	ARI/ASHRAE-13256-1
Groundwater Source (Heating Mode)	< 135,000 Btu/h (Cooling Capacity)	50°F Entering Water	3.6 COP	ARI/ASHRAE-13256-1
Ground Source (Heating Mode)	< 135,000 Btu/h (Cooling Capacity)	32°F Entering Water	3.1 COP	ARI/ASHRAE-13256-1

For SI: °C = [(°F) - 32] / 1.8, 1 British thermal unit per hour = 0.2931 W.
db = dry-bulb temperature, °F; wb = wet-bulb temperature, °F

a. Chapter 6 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
b. IPLVs and Part load rating conditions are only applicable to equipment with capacity modulation.
c. Deduct 0.2 from the required EERs and IPLVs for units with a heating section other than electric resistance heat.
d. Single-phase air-cooled heat pumps < 65,000 Btu/h are regulated by the National Appliance Energy Conservation Act of 1987 (NAECA), SEER and HSPF values are those set by NAECA.

(Effective January 1, 2008)

TABLE 503.2.3(5)
BOILERS, GAS- AND OIL-FIRED, MINIMUM EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE[f]	SIZE CATEGORY	SUB-CATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY[b]	TEST PROCEDURE
Boilers, Gas-Fired	< 300,000 Btu/h	Hot Water	80% AFUE	DOE 10 CFR Part 430
		Steam	75% AFUE	
	≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h	Minimum Capacity[b]	75% E_t and 80% E_c	DOE 10 CFR Part 431
	> 2,500,000 Btu/h[f]	Hot Water	80% E_c	
		Steam	80% E_c	
Boilers, Oil-Fired	< 300,000 Btu/h	----------	80% AFUE	DOE 10 CFR Part 430
	≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h	Minimum Capacity[b]	78% E_t and 83% E_c	DOE 10 CFR Part 431
	> 2,500,000 Btu/h[a]	Hot Water	83% E_c	
		Steam	83% E_c	
Boilers, Oil-Fired (Residual)	≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h	Minimum Capacity[b]	78% E_t and 83% E_c	DOE 10 CFR Part 431
	> 2,500,000 Btu/h[a]	Hot Water	83% E_c	
		Steam	83% E_c	

For SI: 1 British thermal unit per hour = 0.2931 W.
a. Chapter 6 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
b. Minimum ratings as provided for and allowed by the unit's controls.
c. E_c = Combustion efficiency (100 percent less flue losses). See reference document for detailed information.
d. E_t = Thermal efficiency. See reference document for detailed information.
e. Alternative test procedures used at the manufacturer's option are ASME PTC-4.1 for units greater than 5,000,000 Btu/h input, or ANSI Z21.13 for units greater than or equal to 300,000 Btu/h and less than or equal to 2,500,000 Btu/h input.
f. These requirements apply to boilers with rated input of 8,000,000 Btu/h or less that are not packaged boilers, and to all packaged boilers. Minimum efficiency requirements for boilers cover all capacities of packaged boilers.

(Effective January 1, 2008)

CHAPTER 6
REFERENCED STANDARDS

*Revise referenced ARI standards as follows (standards not listed remain unchanged):

ARI

Air Conditioning and Refrigeration Institute
4301 North Fairfax Drive
Suite 200
Arlington, VA 22203

Standard reference number	Title	Referenced in code section number
340/360—2004	Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment	Table 503.2.3(1), Table 503.2.3(2)

(Effective January 1, 2008)

*Revise referenced ASHRAE standards as follows (standards not listed remain unchanged):

ASHRAE

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329-2305

Standard reference number	Title	Referenced in code section number
119—88 (RA 2004)	Air Leakage Performance for Detached Single-family Residential Buildings	Table 404.5.2(1)
13256-1 (2005)	Water-source Heat Pumps—Testing and Rating for Performance—Part 1: Water-to-air and Brine-to-air Heat Pumps (ANSI/ASHRAE/IESNA 90.1-2004)	Table 503.2.3(2)
ASHRAE—2005	ASHRAE Handbook of Fundamentals-2005	402.1.4, Table 404.5.2(1), 503.2.1

(Effective January 1, 2008)

*Revise referenced ASTM standards as follows (standards not listed remain unchanged):

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2859

Standard reference number	Title	Referenced in code section number
E 2178-03	Standard Test Method for Air Permeance of Building Materials	402.4.4
E 2357-05	Standard Test Method for Determining Air Leakage of Air Barrier Assemblies	402.4.4

(Effective January 1, 2008)

*Add referenced DOE standard as follows:

DOE

U.S. Department of Energy
c/o Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402-9325

Standard reference number	Title	Referenced in code section number
10 CFR Part 431 Subpart E 2004	Test Procedures and Efficiency Standards for Commercial Packaged Boilers	Table 503.2.3(5)

(Effective January 1, 2008)

*Delete referenced HI standard without substitution.
(Effective January 1, 2008)

*Revise referenced UL standards as follows (standards not listed remain unchanged):

UL

Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, IL 60062-2096

Standard reference number	Title	Referenced in code section number
181A—2005	Closure Systems for Use with Rigid Air Ducts and Air Connectors	503.2.7
181B—2005	Closure Systems for Use with Flexible Air Ducts and Air Connectors	503.2.7
731—95	Oil-Fired Unit Heaters—with Revisions through February 2006	Table 503.2.3(4)

(Effective January 1, 2008)

*Add new Figure 6-1, 'F_2-Values For Slab-On-Grade Perimeter Insulation', as follows:

FIGURE 6-1
F_2-VALUES FOR SLAB-ON-GRADE PERIMETER INSULATION

***R*-VALUE OF INSULATION (HORIZONTAL OR VERTICAL)**	**24 INCHES (610 mm)**	**36 INCHES (914 mm)**	**48 INCHES (1219 mm)**
R-0	1.043	1.042	1.041
R-1	0.906	0.881	0.886
R-2	0.859	0.823	0.826
R-2.75[1]	0.839	0.799	0.799
R-3	0.833	0.791	0.790
R-4	0.816	0.769	0.764
R-5	0.804	0.752	0.745
R-6	0.794	0.739	0.728
R-7	0.786	0.727	0.714
R-8	0.779	0.717	0.702
R-9	0.773	0.709	0.692
R-10	0.767	0.701	0.684
R-11	0.767	0.699	0.677
R-12	0.767	0.696	0.670
R-13	0.767	0.694	0.664
R-14	0.767	0.692	0.658
R-15	0.767	0.691	0.655
R-16	0.767	0.688	0.649

1. May use *R*-2.75 at 48 inches (1219 mm) in residential applications where carpet or hardwood on plywood is used as the finish floor treatment.

(Effective January 1, 2008)

*Add new Figure 6-2, 'Metal Roof *U*-Factors With *R*-19 Fiberglass Insulation Installed Over The Purlins[1]', as follows:

FIGURE 6-2
METAL ROOF *U*-FACTORS WITH *R*-19 FIBERGLASS INSULATION INSTALLED OVER THE PURLINS[1]

THROUGH-FASTENED METAL ROOF		**STANDING SEAM METAL ROOF[2]**	
PURLIN SPACING[3]	*U*-FACTOR	PURLIN SPACING[3]	*U*-FACTOR
2.0 feet	0.147	2.0 feet	0.112
2.5 feet	0.126	2.5 feet	0.096
3.0 feet	0.113	3.0 feet	0.086
3.5 feet	0.103	3.5 feet	0.079
4.0 feet	0.095	4.0 feet	0.073
4.5 feet	0.089	4.5 feet	0.068
5.0 feet	0.085	5.0 feet	0.065

1. Through-fastened metal roof values are based on ORNL/MBMA November 2004 User Agreement Report, "Tests of Through-Fastened Metal Roof Assemblies". Standing seam metal roof values are based on ASHRAE/IESNA Standard 90.1 for 5-foot purlin spacing and conservatively estimated for other spacing using the same relationship as through-fastened test data.
2. 1-inch by 3-inch (25 mm by 76 mm) thermal block is required between metal roof and purlins.
3. For roofs with mixed spacing, calculate the average roof *U*-factor as shown below.
   Example: Total roof is 8000 ft^2 (743.22 m^2) standing seam metal roof. 1600 ft^2 (148.64 m^2)—20% of it—is on purlins spaced at $2^1/_2$ feet (762 mm). 6400 ft^2 (594.58 m^2)—80% of it—is on purlins spaced at 5 feet (1524 mm). Average Roof *U*-Factor = 0.20 x 0.096 + 0.80 x 0.065 = 0.071.

(Effective January 1, 2008)

APPENDICES

Throughout these appendices there is information that may be helpful in meeting and understanding the *Georgia State Minimum Standard Energy Code.* In cases of conflict, refer to the 2006 International Energy Conservation Code for clarification.

APPENDIX A
AIR SEALING KEY POINTS

*Add new Appendix A, 'AIR SEALING KEY POINTS'. See pages 17 through 23.
(Effective January 1, 2008)

APPENDIX B
BUILDING THERMAL ENVELOPE

*Add new Appendix B, 'BUILDING THERMAL ENVELOPE'. See page 24.
(Effective January 1, 2008)

APPENDIX C
WINDOW PRODUCT RATING, CERTIFICATION AND LABELING

*Add new Appendix C, 'WINDOW PRODUCT RATING, CERTIFICATION AND LABELING'. See pages 25 through 26.
(Effective January 1, 2008)

APPENDIX D
SAMPLE CHECKLIST FOR WOOD FRAMING IN LOW-RISE RESIDENTIAL CONSTRUCTION

*Add new Appendix D, 'SAMPLE CHECKLIST FOR WOOD FRAMING IN LOW-RISE RESIDENTIAL CONSTRUCTION'. See page 27.
(Effective January 1, 2008)

APPENDIX E
SAMPLE CERTIFICATE WITH COMPLETED EXAMPLE

*Add new Appendix E, 'SAMPLE CERTIFICATE WITH COMPLETED EXAMPLE'. See pages 28 through 29.
(Effective January 1, 2008)

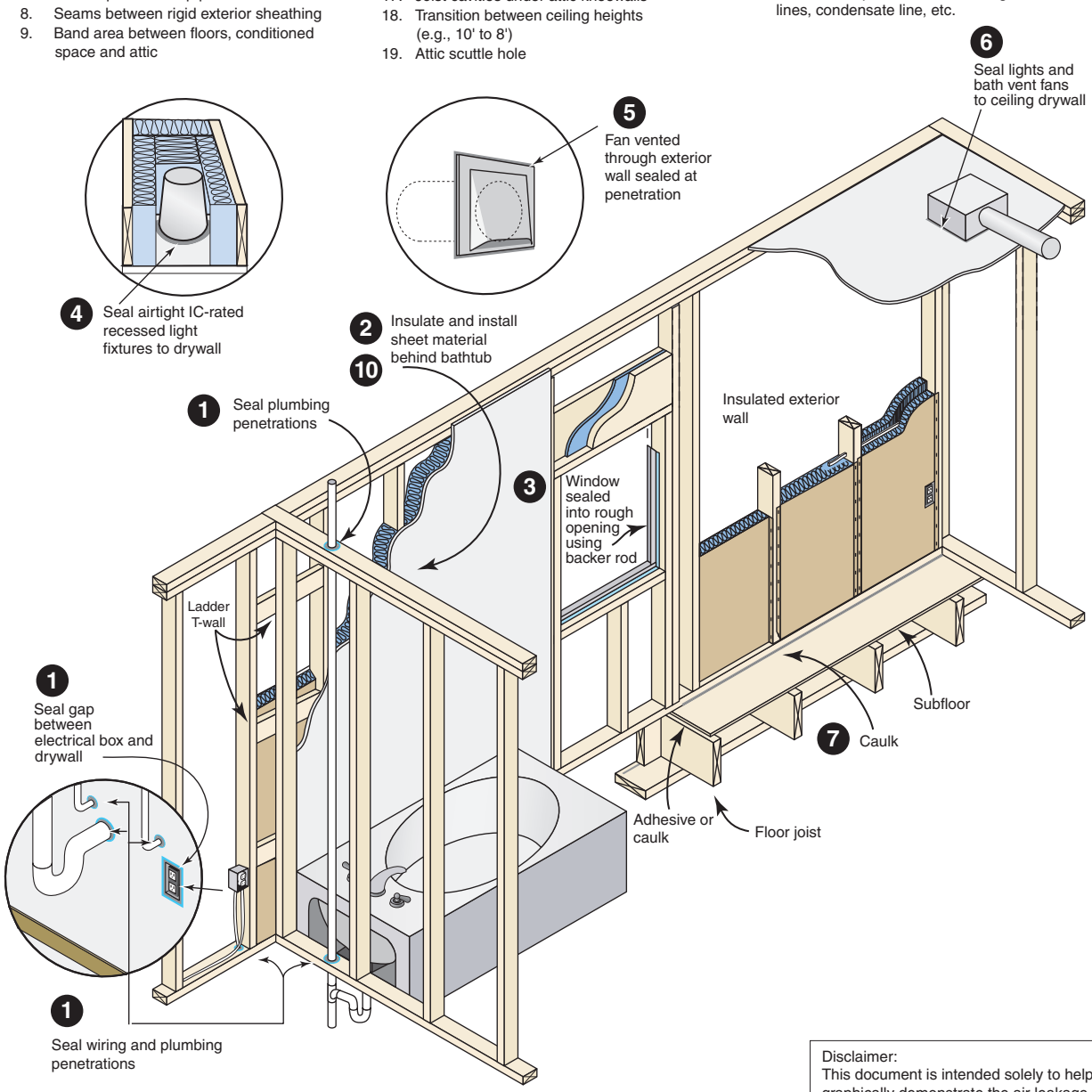
End of Supplements and Amendments.

APPENDIX A
AIR SEALING KEY POINTS

Appendix
2006 IECC

Air sealing key points

1. Building envelope plate and wall plumbing and electrical penetrations
2. Tub/shower on outside or attic wall
3. Window and door rough openings
4. Airtight, IC-rated recessed lights and electrical fixtures exposed to attic
5. Exterior wall exhaust fan terminations
6. Ceiling mounted bath fans, speakers, etc.
7. Bottom plate and top plate
8. Seams between rigid exterior sheathing
9. Band area between floors, conditioned space and attic
10. Tub on exterior wall
11. Mechanical equipment and ductwork chases in attics, crawlspaces
12. Ceiling/crawlspace electrical boxes
13. Ceiling/crawlspace HVAC boots
14. Shower and tub drain line
15. Fireplace inserts
16. Attic kneewall doors
17. Joist cavities under attic kneewalls
18. Transition between ceiling heights (e.g., 10' to 8')
19. Attic scuttle hole
20. Attic pull-down stairs
21. Wall penetrations of mechanical combustion closets
22. Thresholds at mechanical combustion closet doors
23. Band joist exposed to exterior
24. Band area exposed to unconditioned space (such as basement or garage)
25. Exterior wall penetrations for refrigeration lines, condensate line, etc.

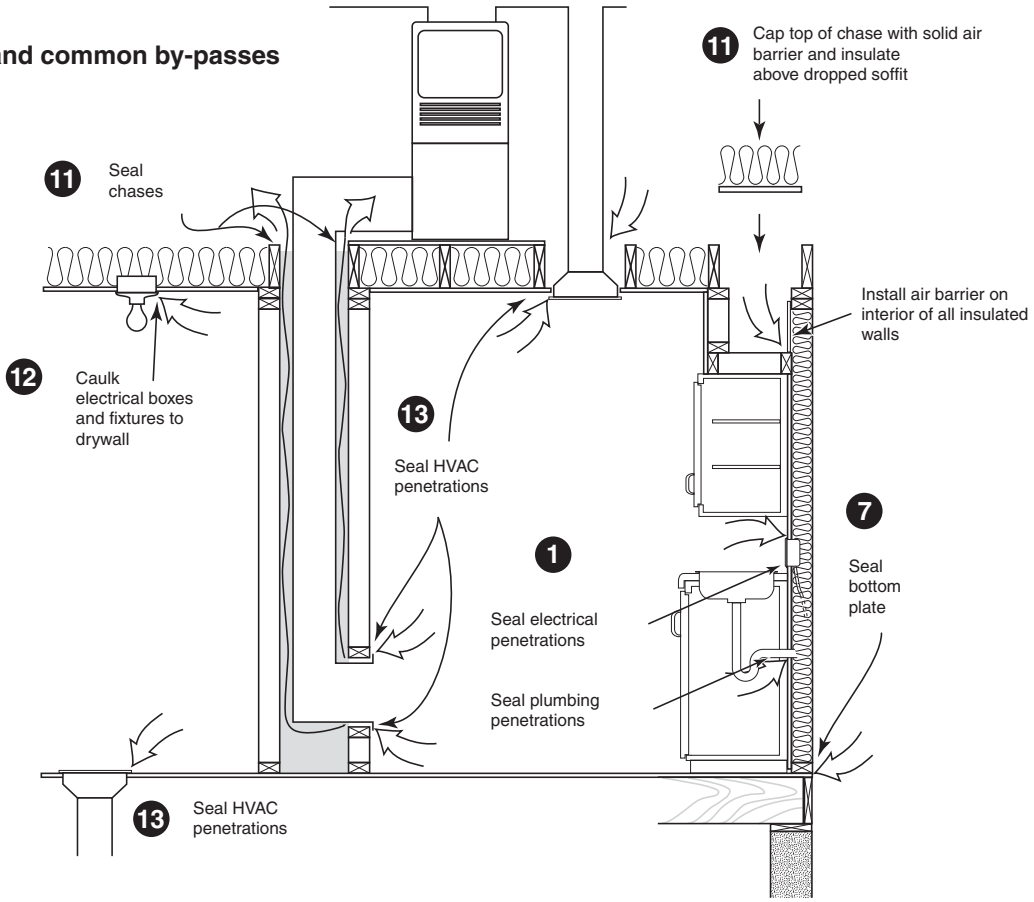


Disclaimer:
This document is intended solely to help graphically demonstrate the air leakage provisions of section 402.4 of the 2006 IECC. It does not cover all airsealing locations or techniques. Other code provisions may be applicable as well.

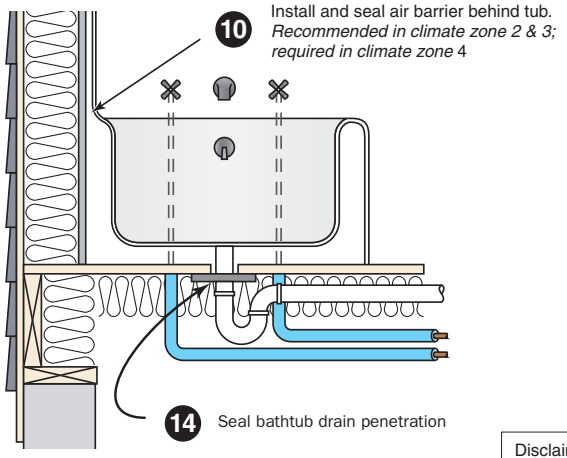
1

Air sealing key points *continued*

Chases and common by-passes



Shower/tub drain rough opening



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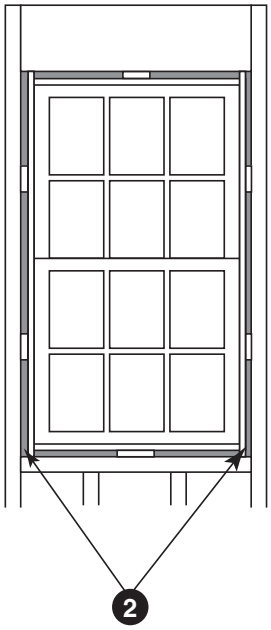
2

Appendix
2006 IECC

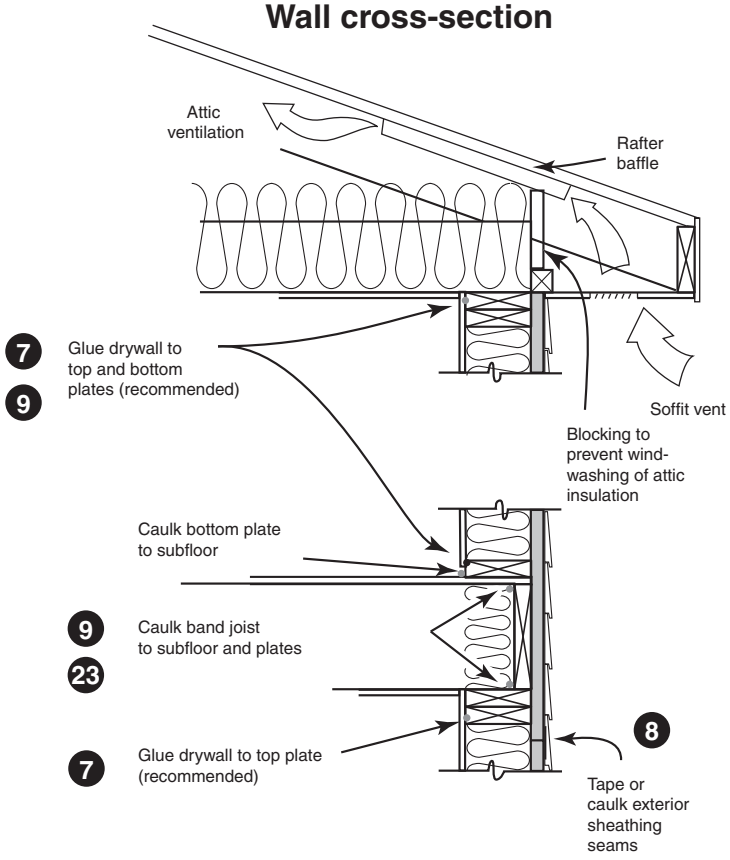
Air sealing key points *continued*

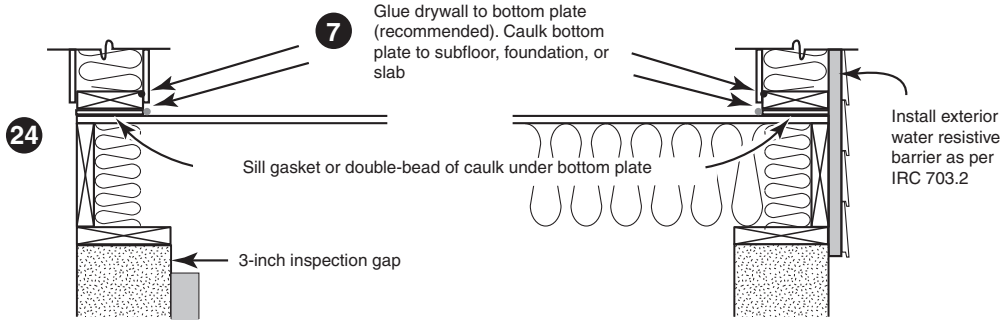
Window rough opening



Use backer rod or spray foam (appropriate for windows) to fill gaps between window/door and rough opening

Wall cross-section





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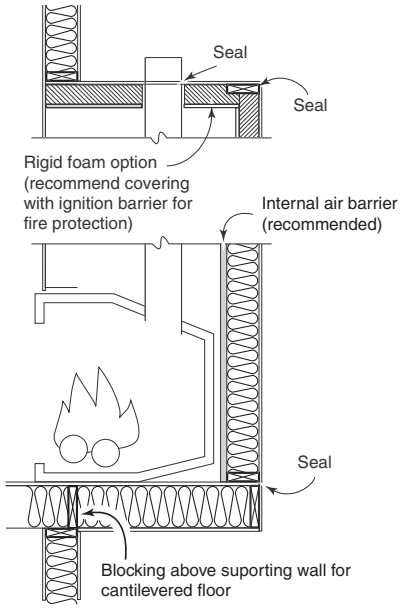
3

Air sealing key points *continued*

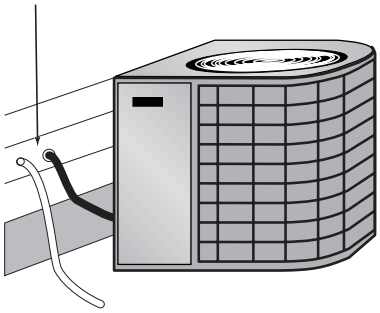
Combustion chase penetrations



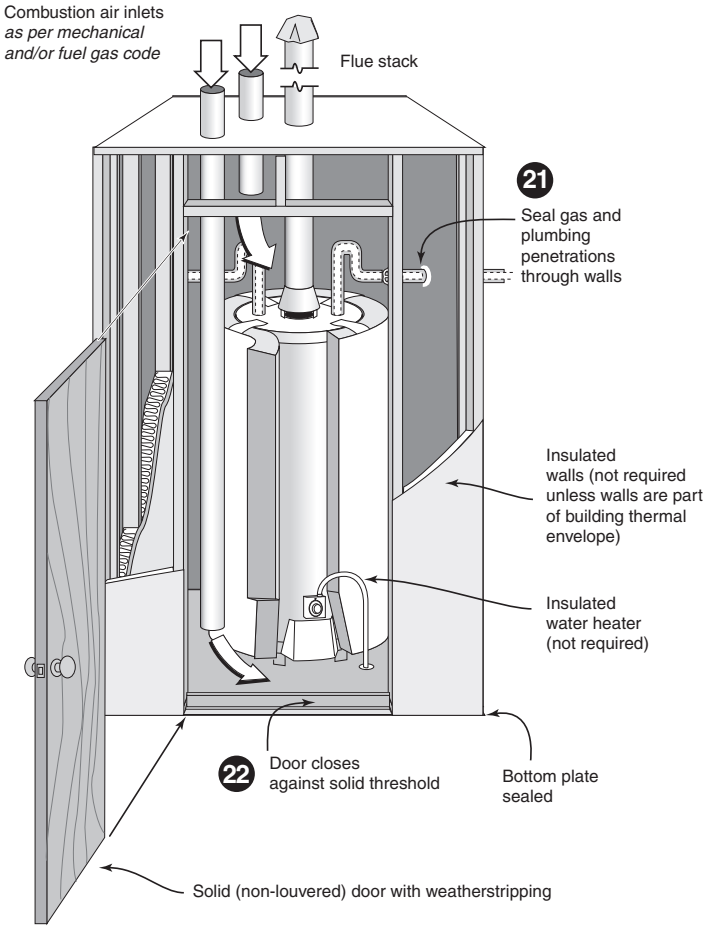
15 Seal around chimney flues with sheet metal cap

Exterior penetrations

25 Caulk exterior wall penetrations for refrigeration lines, condensate line, etc.



Combustion closet



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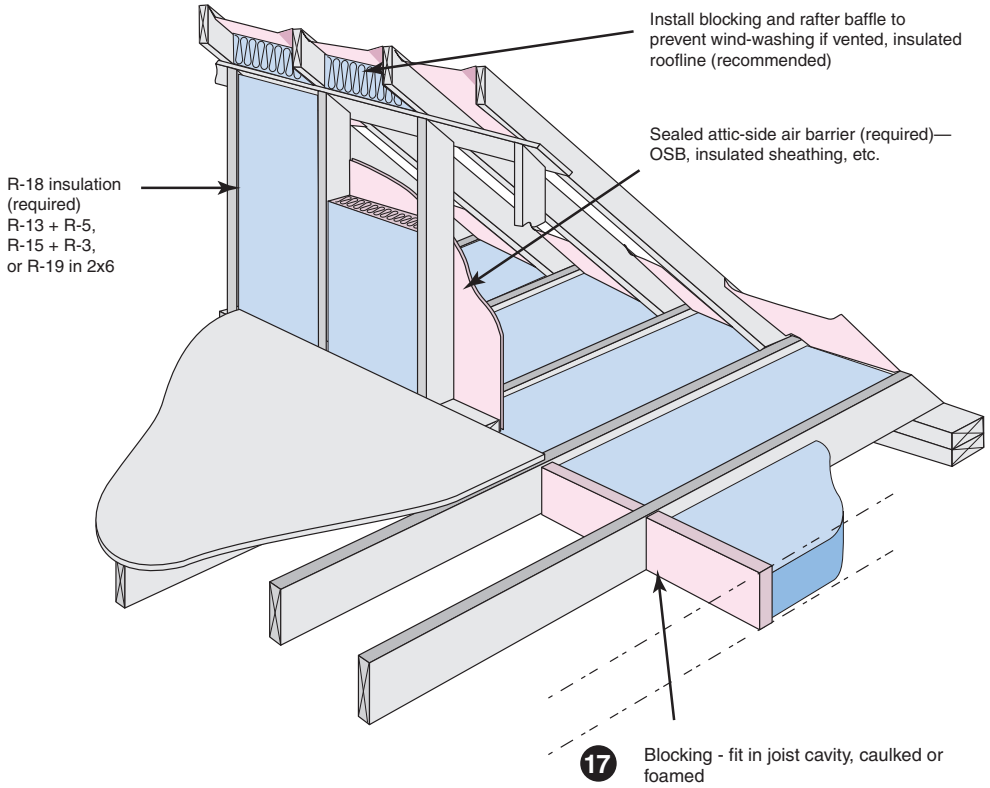
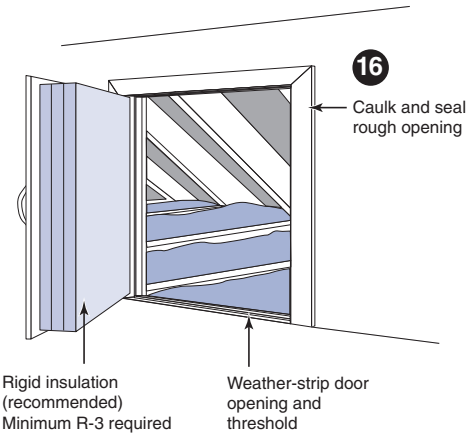
Appendix
2006 IECC

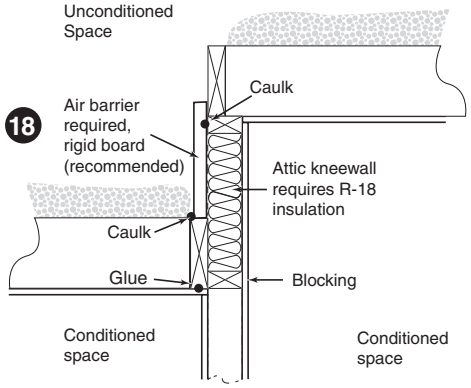
Air sealing key points *continued*



Attic knee-walls



Two-level attic



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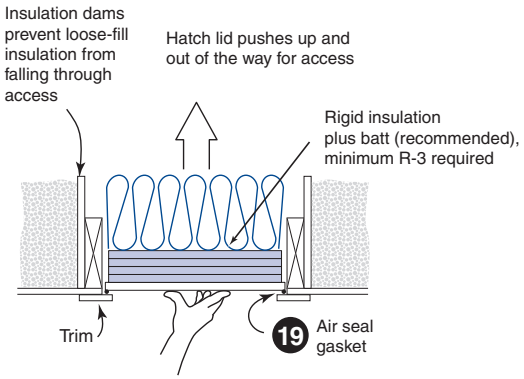
5

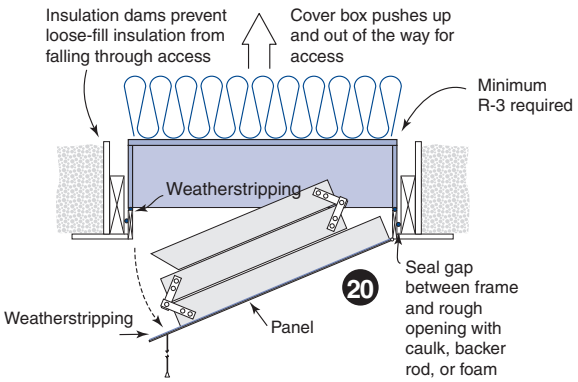
Air sealing key points *continued*

Attic scuttle

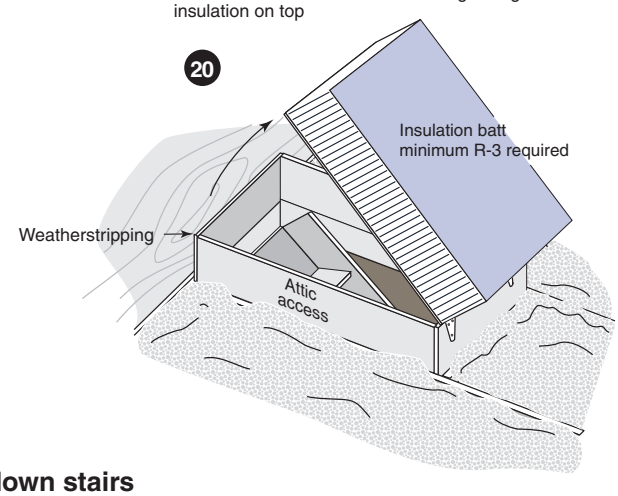


Attic pull-down stairs

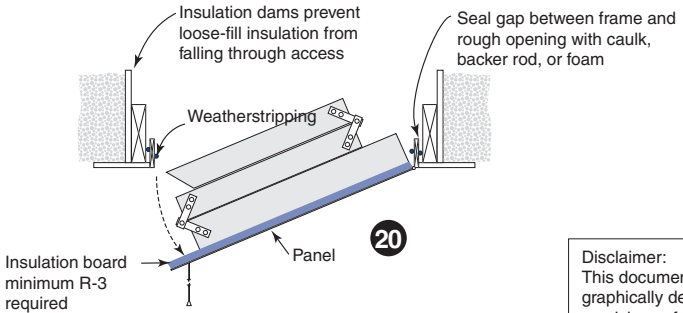
Rigid insulation box forms lid for pull-down attic (recommended)



Boxed enclosure for staircase has rigid hinged lid with insulation on top



Attic pull-down stairs



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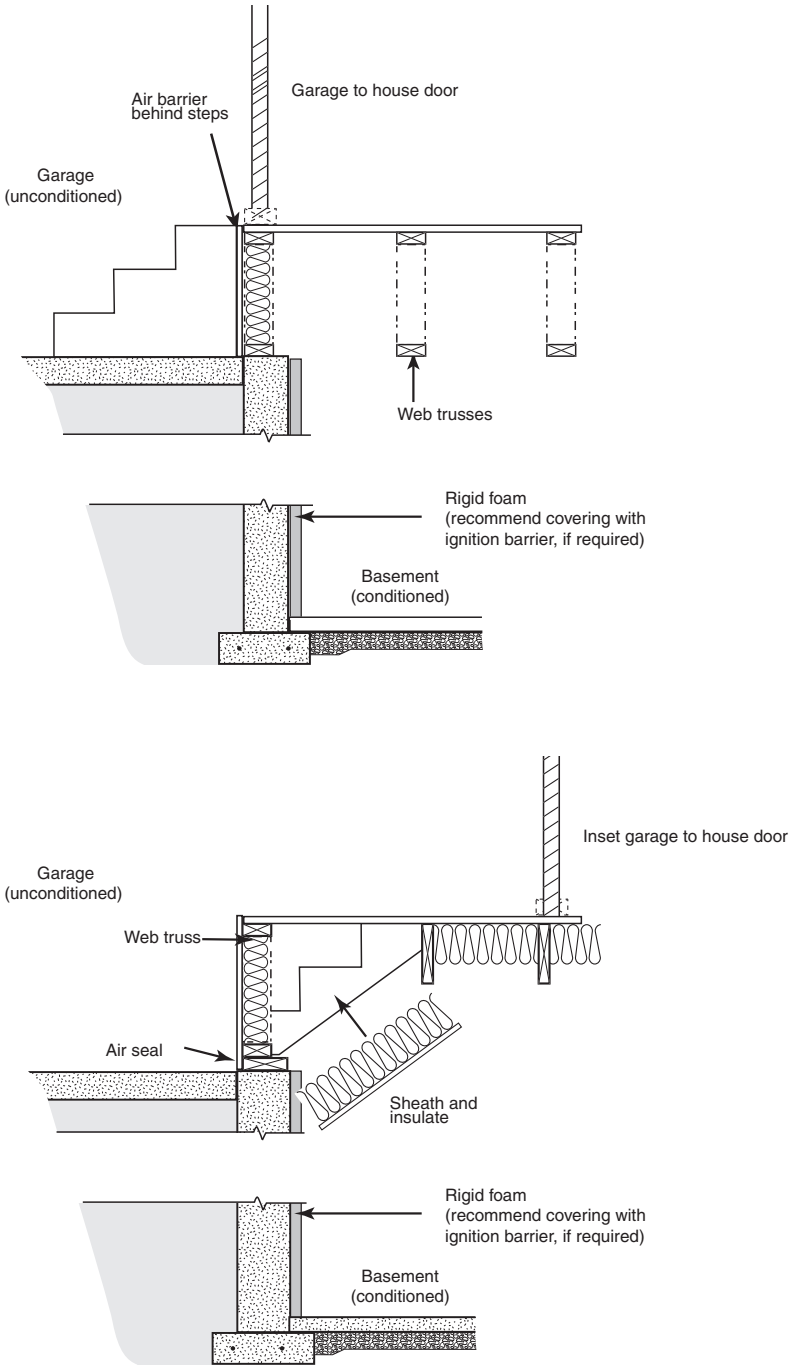
Appendix
2006 IECC

Air sealing key points *continued*



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7

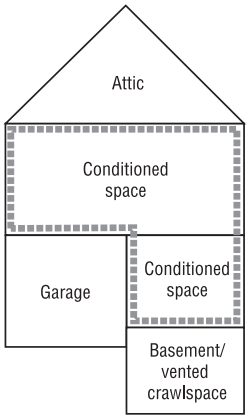
APPENDIX B
BUILDING THERMAL ENVELOPE

Appendix

Building Thermal Envelope — The basement walls, exterior walls, floor, roof, and any other building element that encloses conditioned space. This perimeter also includes the boundary between conditioned space and any exempt or unconditioned space. *—2006 IECC*

The *building thermal envelope* is the barrier that separates the conditioned space from the outside or unconditioned spaces. The building envelope consists of two parts - an air barrier and a thermal barrier that must be both continuous and contiguous (touching each other). In a typical residence, the building envelope consists of the roof, walls, windows, doors, and foundation. Examples of unconditioned spaces include attics, vented crawlspaces, garages, and basements with ceiling insulation and no HVAC supply registers.

Example 1



This is a conventional approach that likely locates all ductwork in unconditioned spaces.

Example R-values

Flat ceiling: R-30

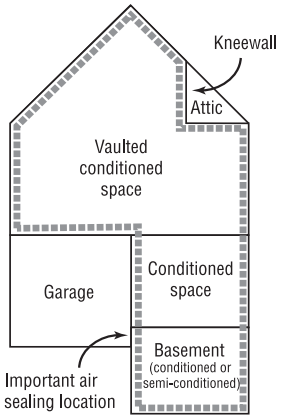
Exterior walls: R-13 + R-3 sheathing

Floor over garage and basement/crawl: R-19

Ductwork sealed with mastic and insulated to R-8

Garage[4], attic and basement/ crawl are unconditioned spaces

Example 2



If supply registers deliver conditioned air to basement, it is considered conditioned. With no supply air, it is considered a semi-conditioned space.

Example R-values

Flat ceiling: R-38

Kneewalls[1]: R-18 (required) (R-13+ R-5, R-15 + R-3, R-19 in 2x6)

Vaulted ceiling[2]: R-25

Exterior walls: R-13 + R-3 sheathing

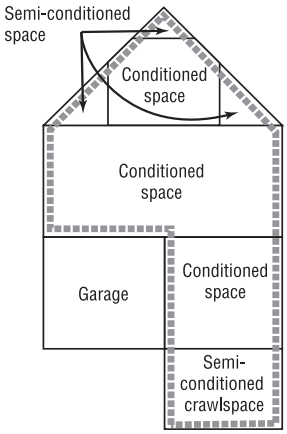
Basement masonry walls: R-5

Basement slab[3]: R-0

Ductwork sealed with mastic and insulated to R-8

Garage[4] and attic are unconditioned spaces

Example 3



The top conditioned floor functions as a vaulted ceiling with interior walls althought it appears to have kneewalls and a flat ceiling. An advantage of this approach is that all upstairs ductwork is located inside the building envelope.

The crawlspace walls are insulated and do not contain vents. The crawlspace ground is covered with concrete or 100% plastic to function as a “mini-basement.”

Example R-values

Vaulted ceiling[2]: R-19

Exterior walls: R-13 + R-3 sheathing

Crawlspace walls: R-5

Ductwork sealed with mastic and insulated to R-6

Garage[4] is unconditioned space

1 An *attic kneewall* is any vertical wall that separates conditioned space from an unconditioned attic. In Georgia, kneewalls must be insulated to R-18. A sealed attic-side air barrier (OSB, foil-faced sheathing, etc.) is required.

2 Requires trade-off (such as REScheck) since prescriptive ceiling requirement is R-30.

3 Slab insulation is not required in Georgia due to termite risk.

4 Although there is nothing to prevent the garage walls from being insulated, due to indoor air quality concerns, the garage should never be considered inside the building envelope.

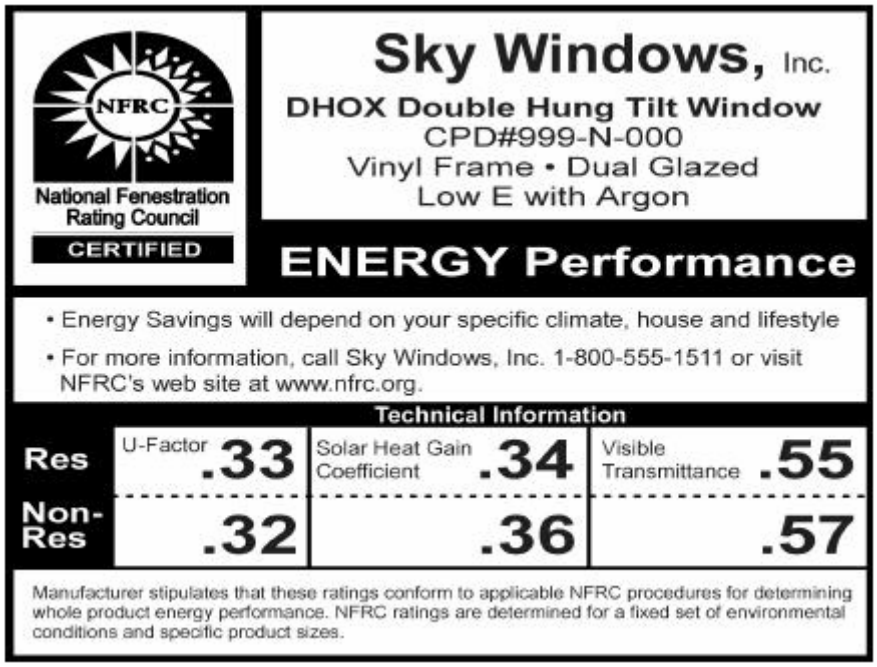
APPENDIX C
WINDOW PRODUCT RATING, CERTIFICATION AND LABELING

Section 102.1.3 of the *Georgia State Minimum Standard Energy Code* requires that a fenestration product (i.e. windows, glass doors and skylights) be labeled with its *U*-factor and solar heat gain coefficient (SHGC). Fenestration product *U*-factors and SHGCs shall be determined by an accredited, independent laboratory in accordance with NFRC 100 (for *U*-factors) and NFRC 200 (for SHGCs), or from default values from Tables 102.1.3(1) and 102.1.3(2) (for *U*-factors) and Table 102.1.3(3) (for SHGC). Manufacturers that label their products with NFRC *U*-factors and SHGCs shall use an NFRC label (see sample NFRC label below). The label shall list as a minimum: *U*-factor, SHGC, frame type, number of panes of glazing, whether the window is fixed or operable, and the type of glazing tint (if present). The label shall contain the words "Meets Thermal Break Criteria" if the product claims a *U*-factor based on a thermal-break product.

NATIONAL FENESTRATION RATING COUNCIL (NFRC) *U*-FACTOR AND SHGC

Below is a sample window label of NFRC-determined energy performance values that code officials should look for during inspections:

FIGURE 102.1.3



Note: This sample window label also contains "Visible Transmittance" (VT) performance values. The *Georgia State Minimum Standard Energy Code* does not establish minimum requirements for VT, but this and other information that might be useful to builders, designers, consumers and others (e.g. air leakage rates) may also be present on labels used by some manufacturers.

APPENDIX C
WINDOW PRODUCT RATING, CERTIFICATION AND LABELING
(Continued)

If NFRC 100 and NFRC 200 are not used to determine product *U*-factor and SHGC, then manufacturers shall obtain default values from Tables 102.1.3(1) and 102.1.3(2) (for *U*-factors) and Table 102.1.3(3) (for SHGCs) and label the product with a Default Window Label. Manufacturers or assemblers shall label their products with default *U*-factors and SHGCs: For example, site-built and shop-assembled windows without NFRC labels shall follow the format of the sample Default Window Label below. This label shall list as a minimum: Default *U*-factor from Tables 102.1.3(1) and 102.1.3(2), default SHGC from Table 102.1.3(3), frame type, number of panes of glazing, whether the window is fixed or operable, and the type of glazing tint (if present). The label shall contain the words "Meets Thermal Break Criteria" if the product claims a *U*-factor based on a thermal-break product.

DEFAULT *U*-FACTOR AND SHGC

Below is a sample window label of default energy performance values that code officials should look for during inspections (if no NFRC label):

DEFAULT **Window Label**	**Manufacturer/Assembler Certifying to Default *U*-Factor and Default SHGC:** **XYZ Supply Co.**
Key Features:	Double Pane Operable Wood Frame Bronze Tint
***U*-FACTOR** **(Default *U*-Factor from Tables 102.1.3(1) and 102.1.3(2))**	**SHGC** **(Default SHGC from Table 102.1.3(3))**
0.55	**0.6**

APPENDIX D
SAMPLE CHECKLIST FOR WOOD FRAMING IN LOW-RISE RESIDENTIAL CONSTRUCTION

(To be filled out by permit applicant and presented to Building Department at time permit is requested. A copy must be available at the job site for Code Enforcement Officer's review.)

		ENTRY OR CHECKMARK (IF APPLICABLE)
New Building or Renovation?	Which One:	
Ceilings		
Access to Attic Area (Minimum *R*-3)	List *R*-Value:	
Flat Ceiling Insulation	List *R*-Value:	
Sloped Ceiling Insulation (UA Trade-Off Calculations Required; Minimum *R*-19)	List *R*-Value:	
Walls		
Cavity Insulation (Batt or Blown-In)	List *R*-Value:	
Insulated Sheathing (Leave Blank for OSB, Plywood, Etc.)	List *R*-Value:	
Attic Kneewall Insulation (Air Barrier on Attic Side; Minimum *R*-18)	List *R*-Value:	
Fenestration		
Window *U*-Factor (from Label)	List *U*-Factor:	
Window SHGC (from Label; Maximum 0.40)	List SHGC:	
Skylight *U*-Factor (from Label)	List *U*-Factor:	
Skylight SHGC (from Label; Maximum 0.40)	List SHGC:	
Door *U*-Factor	List *U*-Factor:	
Foundations		
Floor Insulation	List *R*-Value:	
Basement Wall Insulation	List *R*-Value:	
Mass Wall Insulation (Minimum *R*-5)	List *R*-Value:	
Vented Crawl Space: Foundation Vents Installed Per Code	Check:	
Closed Crawl Space: Minimum 6-mil (0.15 mm) Poly is Taped and Extends up Walls 6 Inches (153 mm)	Check:	
Air Leakage (See Section 402.4 and Appendix A)		
Windows: Caulked, Sealed with 0.34-0.37 Air Infiltration Rate	Check:	
Doors: Sealed, Weather-Stripped (Including Those to Unconditioned Areas: Attic, Unheated Basement, Etc.)	Check:	
Sole Plate: Caulked or Sealed	Check:	
"Can" Lights: Properly Sealed	Check:	
Tubs/Showers on Exterior Walls: Properly Sealed	Check:	
Other Penetrations/Openings: Caulked, Sealed or Gasketed as Necessary	Check:	
Heating/Cooling Efficiency		
Gas or Propane Furnace (Minimum 78% AFUE)	List AFUE:	
Heat Pump (Minimum 7.7 HSPF)	List HSPF:	
Air Conditioner (Minimum 13 SEER)	List SEER:	
Other System(s) (e.g. Fuel Oil)	List Type:	
	List Efficiency:	
Duct Insulation (See Section 403.2; Minimum *R*-6/*R*-8)	List *R*-Value:	
Ducts: Sealed with Mastic or Code-Approved Tape	List Sealant Method:	
Mechanical Ventilation		
Outdoor Air Intakes and Exhausts Installed with Automatic or Gravity Dampers	Check:	

Permit Applicant:_____ Permit Number: _____ Issue Date:_____

Job Address: _____

County: _____ Subdivision: _____ Lot #: _____

APPENDIX E
SAMPLE CERTIFICATE WITH COMPLETED EXAMPLE

SAMPLE CERTIFICATE

Georgia Energy Code Compliance Certificate*

Builder_____ Contact Information_____
Insulation Co._____ Contact Information_____
Heating & Air Co._____ Contact Information_____

Envelope Information

Flat Ceiling/Roof *R*-Value_____ Sloped/Vault Ceiling *R*-Value_____
Exterior Wall *R*-Value_____ (Note: *R*-13 + *R*-3 is *R*-13 Cavity and *R*-3 Sheathing)
Attic Kneewall Cavity *R*-Value_____ Attic Kneewall Sheathing *R*-Value_____
Basement Stud Wall *R*-Value_____ Basement Continuous *R*-Value_____
Crawlspace Stud Wall *R*-Value_____ Crawlspace Continuous *R*-Value_____
Foundation Slab Edge *R*-Value_____ Above Grade Mass Wall *R*-Value_____
Cantilevered Floor *R*-Value_____ Floor Over Unconditioned Space *R*-Value_____
Other Insulation *R*-Values_____
Window *U*-Factor_____ Window SHGC_____
Skylight *U*-Factor_____ Skylight SHGC_____
Glazed Door *U*-Factor_____ Opaque Doors (< 50% glazed) *U*-Factor_____

Mechanical Summary

Water Heater Installed By_____
Gas_____ Energy Factor_____ Electric_____ Energy Factor_____
Other (Explain)_____ Efficiency_____
Number of Heating & Cooling Systems: _____(# of Air Handlers)
Heating Gas_____ AFUE_____ Air Source Heat Pump_____ HSPF_____
Heat (Other)_____ Efficiency_____
Cooling System Type_____ (Direct Expansion, Heat Pump, Geothermal, Etc.) SEER____
Total House Heating Load_____ (Btu/h, Based on ACCA Manual J___or____)
Total House Cooling Load_____ (Btu/h, Based on ACCA Manual J___or____)
Cooling Sensible Load_____ (Btu/h) Cooling Latent Load_____(Btu/h)
Total Air Handler CFM _____ (Based on Design/Calculations)
Heating & Cooling Load Calculations Performed by (Name)_____

*Certificate shall be readily accessible and posted on the electrical distribution panel or air handler. List primary type when there is more than one value for each component (i.e. certificate shall list the value covering the largest area). The certificate shall be completed by the builder or registered design professional.

SAMPLE CERTIFICATE

APPENDIX E
SAMPLE CERTIFICATE WITH COMPLETED EXAMPLE
(Continued)

EXAMPLE OF COMPLETED SAMPLE CERTIFICATE

Georgia Energy Code Compliance Certificate*

Builder *A-1 Home Builder* Contact Information *404-555-1122*
Insulation Co. *Super R* Contact Information *404-555-2233*
Heating & Air Co. *Acme HVAC* Contact Information *404-555-3344*

Envelope Information

Flat Ceiling/Roof *R*-Value *30* Sloped/Vault Ceiling *R*-Value *N/A*
Exterior Wall *R*-Value *13 + 3* (Note: *R*-13 + *R*-3 is *R*-13 Cavity and *R*-3 Sheathing)
Attic Kneewall Cavity *R*-Value *13* Attic Kneewall Sheathing *R*-Value *5*
Basement Stud Wall *R*-Value *N/A* Basement Continuous *R*-Value *N/A*
Crawlspace Stud Wall *R*-Value *0* Crawlspace Continuous *R*-Value *5*
Foundation Slab Edge *R*-Value *0* Above Grade Mass Wall *R*-Value *N/A*
Cantilevered Floor *R*-Value *N/A* Floor Over Unconditioned Space *R*-Value *19*
Other Insulation *R*-Values *N/A*
Window *U*-Factor *0.34* Window SHGC *0.37*
Skylight *U*-Factor *N/A* Skylight SHGC *N/A*
Glazed Door *U*-Factor *N/A* Opaque Doors (< 50% glazed) *U*-Factor *0.35*

Mechanical Summary

Water Heater Installed By *Acme Plumbing*
Gas *X* Energy Factor *0.61* Electric Energy Factor
Other (Explain) Efficiency
Number of Heating & Cooling Systems: *2* (# of Air Handlers)
Heating Gas *X* AFUE *80%* Air Source Heat Pump HSPF
Heat (Other) Efficiency
Cooling System Type *DX Air Conditioner* (Direct Expansion, Heat Pump, Geothermal, Etc.) SEER *13*
Total House Heating Load *57,144* (Btu/h, Based on ACCA Manual J *X* or)
Total House Cooling Load *45,737* (Btu/h, Based on ACCA Manual J *X* or)
Cooling Sensible Load *33,537* (Btu/h) Cooling Latent Load *12,200* (Btu/h)
Total Air Handler CFM *1,526* (Based on Design/Calculations)
Heating & Cooling Load Calculations Performed by (Name) *Jay Manuello, Acme HVAC*

*Certificate shall be readily accessible and posted on the electrical distribution panel or air handler. List primary type when there is more than one value for each component (i.e. certificate shall list the value covering the largest area). The certificate shall be completed by the builder or registered design professional.

EXAMPLE OF COMPLETED SAMPLE CERTIFICATE