GA 2020 Energy Code Overview

Background
As of January 1, 2020, Georgia's new energy code is the 2015 IECC + 2020 GA Supplements and Amendments, which supersedes the 2009 IECC (with 2011 GA Supplements and Amendments).

Changes and Highlights
Georgia's 2020 energy code brings forward several current amendments and introduces a few new ones. It includes enhanced graphics in Appendix RA that illustrate proper construction details for insulation installation as well as envelope and duct sealing.

The amended code brings minimal changes to the building thermal envelope components:

- Ceiling insulation increases from R-30 to R-38 in CZ2 and CZ3 but remains R-38 in CZ4.
- Windows get better (in theory) but effectively remain the same windows that are commonly being installed today (max. U-factor = 0.35, max. SHGC = 0.27).
- Single-family house leakage drops to < 5 ACH_{50} (an improvement from the previous < 7 ACH_{50} but not as stringent as the < 3 ACH_{50} IECC target).

For **ducted mechanical systems,** duct leakage improves from 12% to 6% for Total Leakage at Final, but remains at 6% for Total Leakage at Rough-In. Additionally:

- Duct leakage-to-outside is no longer recognized as a testing option.
- New home heat pump systems require supplemental electric strip heat lockout until the outdoor temperature is < 40°F.
- Clarification was created to incentivize variable capacity HVAC units in terms of equipment sizing and selection as per ACCA Manuals J and S.

The < 5 ACH_{50} air tightness requirement would have meant that all new homes would require a **whole-house mechanical ventilation system** as per the 2012 and later versions of the *International Residential Code* (IRC). Ventilation strategies range from simple exhaust-only and sensor-based supply-only to ventilating dehumidifiers and balanced ERV's (energy recovery ventilators). The IRC provides a table specifying the minimum ventilation to be provided. Note that Georgia subsequently modified the 2015 IRC to not require whole-house ventilation except for homes < 3 ACH_{50}.

For **hot water lines,** R-3 pipe insulation is prescriptively required for all hot water plumbing outside the thermal envelope, for any lines 3/4" and greater, and for any buried piping. Unless a simulation-based trade-off is used, hot water lines must meet the insulation requirements of section R403.5.3. Hot water recirculating systems must be pumped and require insulated lines if controlled by a timer or thermostat. (Demand control recirculation systems are otherwise exempt from insulation.)

New Compliance Pathway
For home designs that do not meet the prescriptive code, alternate compliance options include simple UA trade-off (e.g., REScheck) and "Section R405: Simulated Performance Alternative."

Also, the 2015 IECC introduces a new compliance pathway: the **Energy Rating Index (ERI).** This pathway is modeled on the Home Energy Rating System (HERS) industry and allows a simulation that looks at *all* energy used in the home. This is significant because this compliance pathway gives credit for more efficient mechanical equipment, increased lighting efficiency, better appliances, and renewable energy.

Importantly, regardless of which trade-off pathway is chosen, no insulation/envelope component may be installed that does not meet the minimum "backstop" requirements of Table R402.1.6, "Minimum Insulation R-values For Envelope Components When Trade-Offs Are Used."

Georgia 2020 Prescriptive Energy Code

Climate Zone	Fenestration (U)	Skylight (U)	Glazing (SHGC)	Ceiling (R)	Wood (R)	Attic (R)	Mass Wall (R)	Floor* (R)	Basement (R)	Slab (R)	Crawl (R)	ACH_{50} (R)
2	0.35	0.65	0.27	38	13	18	4/6	13	0	0	0	<5
3	0.35	0.55	0.27	38	13	18	8/13	19	5/13	0	5/13	<5
3	0.35	0.55	0.27	38	13	18	8/13	19	10/13	0	10/13	<5

* Cantilevered floor over outside air, R-30

SOUTHFACE INSTITUTE ENERGY CODE HOTLINE
energycodes@southface.org 404-604-3598

APPENDIX RD

MANDATORY COMPLIANCE CERTIFICATE

2020 Georgia Residential Energy Code Compliance Certificate

This certificate shall be posted on or near the electrical distribution panel or air handler

Permit # _____

House Address or Community/Lot# _____

Jurisdiction Logo and/or Contact Information Here

Building Summary

Builder Company Name	Signature	Contact (email/phone)	Date

Compliance Pathway (check one)	Building Envelope (when multiple values per component, list value covering largest area)			
☐ Prescriptive: R401-404	Ceiling/Roof R-value		Above-grade mass wall R-value	
☐ UA Trade-off: R402.1.5	Sloped/vaulted ceiling R-value		Cantilevered floors R-value	
☐ REScheck: Keyed to 2015 IECC	Exterior wall R-value		Window/Glass Door SHGC	
☐ Simulated Performance: R405	Kneewall (cavity and/or continuous) R-value		Window/Glass Door U-factor	
☐ Energy Rating Index (ERI): R406	Foundation (cavity and/or continuous) R-value		Skylight SHGC	
ERI Score	Floors over unconditioned R-value		Skylight U-factor	

Mechanical Summary

HVAC Company Name	Contact (email/phone)	Date

Heating System Type	Efficiency (AFUE, HSPF, COP or other)	Cooling System Type	Efficiency (SEER, EER or other)	Water Heating Type	Efficiency (EF or other)
☐ Gas		☐ Air conditioner		☐ Gas	
☐ Heat pump		☐ Heat pump		☐ Electric	
☐ Other		☐ Other:		☐ Other:	

☐ Yes ☐ No Manual J, S, D or equivalent complete?

Required Mechanical Ventilation

Type (check one)	Design Rate (check one)	
☐ Exhaust	☐ Continuous	Design Ventilation Rate (CFM)
☐ Supply	☐ Intermittent	
☐ Balanced	If intermittent, list runtime in min. per hour	

Duct and Envelope Tightness Testing Summary

DET Verifier	Contact (email/phone)	DET Verifier ID

Envelope Tightness Testing (< 5 ACH50) **(Envelope Tightness = Blower Door Fan Flow x 60 / Thermal Envelope Volume)**

Blower Door Fan Flow (CFM50)	Thermal Envelope Volume (ft^3)	Envelope Tightness (ACH50)

If multifamily unit and conducting sampling, this unit is not required to be tested. Mark N/A.

Duct Tightness Testing (< 6 CFM25/100 ft^2) **(Total Duct Leakage = 100 x Fan Flow / Area Served)**

Number of Heating and Cooling Systems

Duct Tightness Leakage Test Results	System 1	System 2	System 3
Test not required if air handler and ductwork located entirely within conditioned space			
Location			
Fan Flow (CFM25)			
Area Served (ft^2)			
Total Duct Leakage (CFM25/100 ft^2)			
Rough In Total (RIT) or Post Construction Total (PCT)			