



## **Standards for Jackson EMC's Right Choice Program**

Revised: January 2020

All homes in the program must meet the requirements of the Georgia Energy Code, which is the International Energy Conservation Code (IECC) 2015 Edition with Georgia Supplements and Amendments. A copy of the supplements and amendments may be downloaded from [www.dca.ga.gov/node/5689](http://www.dca.ga.gov/node/5689).

Program prerequisites are-

- Homes must be served by Jackson EMC.
- Homes must have heat pumps and electric tank water heaters. (No electric or gas tank-less water heaters are allowed.)
- No unvented gas fireplaces allowed—direct vent gas fireplaces are allowed

### **CERTIFICATION PROCESS**

#### **Plan Analysis**

Builder must submit house plans to Right Choice for each plan to be built. Salas O'Brien, a state certified mechanical engineer with Errors and Omissions insurance, will calculate the heating and cooling load based on ASHRAE Fundamentals within 10 business days and also prepare the ResCheck, Georgia Energy Code Compliance Certificate for each plan. This service is an added benefit from Jackson EMC.

#### **Enrollment Meeting**

After a builder has chosen to build Right Choice homes, the Enrollment Meeting starts your success. All stakeholders in the certification process are required to attend an Enrollment Meeting. The purpose of the meeting is to communicate the process and the value of Right Choice to the builder, HVAC and air sealer/insulation contractors, review the Certification and Warranty Management Processes, and openly discuss questions about the program standards and HVAC load calculations.

#### **Model Walk-Through**

When the first home for each floor plan reaches the dry-in phase and before the rough-in phase, Right Choice will meet on-site with the builder, HVAC and air sealer/insulation contractors, and conduct a walk-through to discuss how each trade intends to install their product. The discussion will include proposed duct design and layout, HVAC unit sizing, air sealing requirements, and suggestions for a successful Pre-Insulation Inspection.

**Pre-Insulation Inspection**

This inspection must occur before wall insulation is installed. At the Pre-Insulation Inspection, the HVAC contractor should have the duct system(s) fully assembled and sealed with mastic. All blocking and air sealing must be complete. A Right Choice technician will visually inspect for proper air sealing, duct installation, and will pressure test the duct system for tightness with the Duct Blaster.

**Final Inspection**

This inspection must occur after house has permanent power meter and after HVAC system start-up, but before closing. Also, all door and window gaskets must be installed before Final Inspection. A Right Choice technician will perform a blower door test to check the home's air tightness, perform an airflow test to check for proper air distribution from the HVAC system, check the thermostat for proper function, and will visually verify appropriate air sealing, insulation, equipment size, and moisture control.

**Warranty**

The Right Choice warranty is designed to apply to a newly constructed residential home under the Right Choice program that is completed within one year of the initial pre-insulation inspection and also is sold within one year of final approval by Vallus Corp. Builder understands that warranty begins at the initial home closing. The program is not designed to cover homes left in various stages of construction for extended periods of time.

The Right Choice energy warranty states that the annual energy used to heat and to cool the house will be below a certain kWh amount, and is valid for 3 years. The Right Choice comfort warranty states that the temperature in the middle of every room must stay within 3 degrees of the temperature setting at the thermostat location for that zone, and is valid for 1 year. The comfort performance is based on average annual weather data. Warranties and Jackson EMC's Energy Advantage Rate are transferable.

## **RIGHT CHOICE STANDARDS**

### **1. AIR SEALING—a requirement of IECC 2015 code**

Air sealing is required by IECC 2015 sections GA R 402.4. Numbers in parentheses for A-X below refer to the “Air Barrier and Insulation Inspection Component Guide,” and the air sealing diagrams on pages 28-49 (Appendix A) of the Georgia State Supplements and Amendments to the IECC 2015, unless otherwise noted.

#### Blocking and Sheathing

- A. Chases must be capped. (8)
- B. Solid sheet must be installed behind tubs and showers on insulated walls. (13)
- C. Attic knee walls must be sheathed sealed. (1 & 8)
- D. Stud cavities must be blocked from attic. Blocking or top plate will be needed at change in ceiling height and attic knee walls. (1 & 8)
- E. Joist cavities under attic knee walls must be blocked. (1)

#### Pre-Insulation Air Sealing

- F. Top and bottom plate penetrations must be sealed. (1 & 3)
- G. Bottom plate must be sealed to poured wall, slab, or subfloor. (3)
- H. Penetrations in exterior wall sheathing must be sealed. (8 & 12)
- I. Window and door rough openings must be sealed (not chinked with insulation). (4)
- J. Gaps greater than 1/8” between pieces of exterior sheathing must be sealed. (1)
- K. Exhaust fan penetrations must be sealed at band joist. (1,5, & 8)
- L. Exterior walls of fireplace chase must be sealed (including at combustion air inlet. (1, 6, 8, & 17)
- M. Penetrations through insulated subfloor must be sealed. (1, 6, & 8)
- N. Shower and tub drains must be sealed (rock wool/fiberglass not acceptable) (12)
- O. HVAC register boots that penetrate building envelope must be sealed to subfloor or drywall. (15)
- P. Soffits must be sealed at cantilevered floors. (6)
- Q. Gaps in chase caps and blocking must be sealed. (2 & 8)
- R. Recessed can lights in insulated ceilings must be air-tight. (11)

#### Post-Drywall Air Sealing

- S. Ceiling mounted electrical fixtures, including lights, ceiling fans, and speakers in insulated ceilings must be sealed to drywall. (2 & 11)
- T. HVAC register boots that penetrate building envelope must be sealed to subfloor or drywall. (15)
- U. Attic knee wall doors must seal tight – this requires weather stripping and a latch. (2)

- V. Attic scuttle holes must seal tight (GA R 402.2.4; R-10 min) – this requires weather stripping. (2)
- W. Attic pull-down stairs located in conditioned space must seal tight and must be insulated to a minimum R-5. (2)
  - W1. A sealed cover box with weather stripping is recommended. The preferred location is in an unheated space such as a garage. (2)
- X. Exterior doors must have weather stripping and thresholds with a minimum R5. This includes all doors that penetrate the building envelope, which may include the door between the house and the basement. (GA R 402.2.4)

**TESTING** - a requirement of Georgia State Supplements and Amendments to the IECC 2015

- Y. All homes must pass a blower door test with a result of less than 5 ACH50. (402.4.2.1)
  - Y1. All homes must comply with Georgia Energy Code regarding ventilation. (GA R 403.6)
    - Y2. If installing mechanical ventilation, lock-outs are required. (Full ventilation requirements described below.)

Ventilation Requirements

Provide exterior louver as source of outside air for HVAC equipment. Louver shall have a minimum area of 1.5 square feet. Provide insulated sheet metal plenum on interior side of louver; plenum shall be sized to match the louver size with a min. 12” depth. Connect an 8” insulated outside air duct to the louver plenum and extend it to the return air plenum of the house fan coil unit (FCU). In outside air duct, near FCU return air plenum connection, provide: one (1) two-position, motor-operated damper and one (1) manual volume damper. Both damper sizes shall match outside air duct size. Provide airtight, removable access panels in the duct/plenum to allow access to these components.

Motor-operated damper shall be connected to FCU. When FCU operates, damper shall open. When FCU is off, damper shall close. System thermostat shall ONLY be operated with the Fan in the “Auto” position. If possible, given the equipment installed, the Contractor shall disable the Fan “On” option.

Manual damper shall be locked in the fully closed position prior to and during the blower door test.

If the ACH50 blower door test measurement is above 3.0: the manual damper shall remain locked in the closed position; the motor-operated damper shall be disabled in the closed position.

If the ACH50 blower door test measurement is 3.0 or below: the manual damper(s) shall be adjusted to provide an outside air flow (CFM) equal to the quantity shown on the residential load calculation form (+/- 10%) for the fan coil unit(s). If FCU fan is variable-speed, outside air quantity shall be balanced

while fan is operating at its highest speed. The motor-operated damper shall open with the FCU operation, as noted above.

Other Notes:

1. Multiple fan coil unit shall require multiple outside air ducts. If one louver/plenum is used as a single source of outside air, its minimum size shall be 1.5 square feet per connected unit.
2. If the house has 6 bedrooms (or equivalent rooms) or more than 5,000 square feet of area, outside air ductwork and louver sizes may be increased from above criteria. For these cases, exact sizes will need to be determined during residential load calculations.
3. Timers that force operation of HVAC systems when not called for by thermostat are NOT allowed.
4. Fan forced outside air (i.e. fans installed in the outside air ducts) is NOT allowed.
5. Fan coil unit (FCU) thermostats shall ONLY be operated with the Fan in the "Auto" position. Operation of the Fan in the "On" position will void any warranties and/or guarantees associated with the Right Choice program.

Z. Building envelope testing must be conducted by Right Choice certified DET technician.  
(402.4.2.1.1)

## 2. INSULATION & WINDOWS

(Parentheses indicate IECC 2015 Edition with Georgia Supplements and Amendments)

Climate Zones in Jackson EMC service area:

Climate Zone 3: Gwinnett, Jackson, Barrow, Madison, Clark, Oglethorpe

Climate Zone 4: Hall, Banks, Franklin, Lumpkin

- A. Home must meet the overall U-value requirement and SHGC requirement of the Georgia Energy Code based on specifications provided by the builder. Right Choice will determine if the provided values meet energy code as part of the plan analysis. (Tables GA R 402.1.2, 402.1.4 & 402.1.6)

Climate Zone	Fenestration U-Factor <sup>b</sup>	Skylight <sup>b</sup> U-Factor	Glazed Fenestration SHGC <sup>b,e</sup>	Ceiling R-Value	Wood Frame Wall R-Value	Attic Kneewall R-Value <sup>i</sup>	Mass Wall R-Value	Floor R-Value	Basement <sup>f</sup> Wall R-Value	Slab <sup>d</sup> R-Value & Depth	Crawl Space <sup>c</sup> Wall R-Value
2	0.35	0.65	0.27	38	13	18	4/6	13	0	0	0
3	0.35	0.55	0.27	38	13	18	8/13	19	5/13 <sup>f</sup>	0	5/13
4 except marine	0.35	0.55	0.27	38	13	18	8/13	19	10/13	0	10/13

\* *This requirement will take effect on Jan 1, 2020.*

For SI: 1 foot = 304.8 mm.

- a. R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.
- b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration. Exception: Skylights may be excluded from glazed fenestration SHGC requirements in climate zones 1 through 3 where the SHGC for such skylights does not exceed 0.30.
- c. "15/19" means R-15 continuous insulation on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. "15/19" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the home. "10/13" means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.
- d. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less in Climate Zones 1 through 3 for heated slabs.
- e. There are no SHGC requirements in the Marine Zone.
- f. Basement wall insulation is not required in warm-humid locations as defined by Figure R301.1 and Table R301.1.
- g. Or insulation sufficient to fill the framing cavity, R-19 minimum.
- h. The first value is cavity insulation, the second value is continuous insulation, so "13+5" means R-13 cavity insulation plus R-5 continuous insulation.
- i. The second R-value applies when more than half the insulation is on the interior of the mass wall.

- B. Insulation must be installed against a solid air barrier (OSB, drywall, concrete or solid sheet good). As an example, floor insulation must be installed in contact with the subfloor. (GA R 402.2.8)
- C. Wall insulation must fill cavities completely and comply with Georgia Energy Code. (pages 45-49 of GA amendments appendix RA GA Insulation Installation)
- D. All area of the attic must have vent openings. If there is a bonus room over the garage, the attic over the garage must be vented in addition to the main attic. (IRC R 806). Power attic ventilators shall not be connected to the electric grid. Power attic ventilators connected to a solar panel are allowed. (GA R 403.13)
- E. Blown attic insulation may not block soffit vents – baffles must be used to prevent blocking attic ventilation (GA R 402.2.3)
- F. A permanent certificate shall be completed by the builder or registered design professional which lists the predominant R-values of insulation installed in or on ceiling/roof, walls, foundation (slab, basement wall, crawlspace wall and/or floor) and ducts outside conditioned spaces; U-factors for fenestration and the solar heat gain coefficient (SHGC) of fenestration. (GA R 401.3)
  - F1. Blown attic insulation must have rulers and an attic card in each accessible attic space. Insulation must have a depth throughout the attic that meets or surpasses the depth indicated on the card. (GA amendments appendix RA Insulation)
- G. For attic HVAC platforms, R-19 shall be deemed to meet R-38 ceiling for a maximum 32-inch-wide passage to HVAC system. If more subfloor is desired, it must be raised up to provide room for the full ceiling R-value. (GA R 402.2.1)
- H. Attic kneewalls must be insulated to a minimum of an R-18 value. R-13 + R-5 insulated sheathing; R-15 + R-3 sheathing; or R-19 compressed into a 2 X 6 cavity will meet R-18 requirement. Attic side shall have a sealed air barrier. (GA R Table 402.1.6 notes A & C)
- I. When part of the building envelope, basement foundation walls must be insulated to a minimum of R-5 if continuous and R-13 if cavity. Consideration should be given for mold and moisture, and for termite inspection and treatment. (GA R Table 402.1.6) Concrete foundation walls **may not** be insulated with kraft-paper faced fiberglass batts. Unfaced batts, blown in cellulose, or perforated vinyl encapsulated batts are permitted.
- J. For basements with no direct conditioning, either the floor or all the basement walls shall be insulated. (GA R Table 402.1.6)
- K. 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. Exposed earth in unvented crawl space foundations shall be covered with a continuous Class I vapor retarder with 6 inches of overlap; then sealed or taped. (GA R 402.2.11)
- L. Access doors from conditioned spaces to unconditioned spaces shall be weather-stripped and insulated: Hinged vertical knee wall doors, R-5 minimum; Attic scuttle holes, R-19; Pull downstairs in conditioned space, R-5 minimum. (GA R 402.2.4)

### **3. HEATING AND COOLING SYSTEMS**

(Parentheses indicate Georgia State Supplements and Amendments to the IECC 2015, unless otherwise noted.)

#### **Equipment**

- A. Heat pump must be sized to Right Choice specifications as determined by ASHRAE Fundamentals. (GA R 403.7)
- B. Indoor and outdoor units must be matched and AHRI rated.
- C. Electric strip heat may only engage when heat pump is unable to meet or maintain the thermostat setting. (GA R 403.1.2)

#### **Ductwork**

- E. Duct joints and seams must be sealed with mastic or mastic tape, including the plenum seams and the duct liner to duct collar connection. 2015 GA code now requires 2mm thickness of mastic (“Nickel Thick”) on all HVAC joints (GA R 403.3.2 & GA R 403.3.6)
  - E1. Flex duct joints must also have straps securing the flex joint in addition to the mastic sealant.
- F. Dampers are required to allow easy alteration of flow to each room on flex duct systems. For rigid duct systems, each room must have one damper that will control air to the supply ducts serving that room. It may be necessary to back up to the branch to install the damper to allow it to be accessible in the future.
- G. Ducts must be sized and designed according to the principles outlined in ACCA Manual D or to achieve proper room air flow.
- H. The return side of the duct system must be sized to carry at least as much air as the supply side of the duct system.
- I. Stud cavities, joist cavities, and cabinets may not be used as ducts. If air must run through these spaces, ducts designed to fit inside those spaces must be used. (GA R 403.3.5)
- J. No ducts may be run through insulated cavities including underneath attic subfloors, roof-ceiling combos, exterior wall cavities, or wall cavities between the garage and house. (GA R 403.3.5)
- K. Duct insulation must be at least R-8 in attics and R-6 for all others. Exception: ducts inside the building envelope. (GA R 403.3.1)

#### **Zoned Systems**

Must be designed and installed according to HVAC equipment manufacturer specifications. Every brand is expected to have its own set of installation and design instructions.

#### **TESTING:**

- L. Total Supply and Return air flow must be 400 cfm/ton +/- 10%.
- M. Duct leakage must be less than 20 cfm per ton operating at 1/3 pressure utilizing the duct blaster.



#### **4. MOISTURE AND INDOOR AIR QUALITY**

(Parentheses indicate IECC 2015 Edition with Georgia Supplements and Amendments)

- A. New wood-burning fireplaces shall have gasketed doors and outdoor combustion air. (GA R 402.4.2 & GA R 402.4.4)
  - A1. All non-electric fireplaces must be vented to the exterior.
- B. Grade must slope away from house a minimum of 5% (6" over 10 feet). (IRC 401.3)
- C. Exhaust fans must be vented to the outside and are required in every room with a shower stall or bathtub. Exhaust ducts vented through soffits must penetrate soffit and end with a termination cap. (GA R 403.6)
- D. Gutters must be present on the house and downspouts must direct water away from the foundation.
- E. No polyethylene is allowed in above or below grade wall assemblies. Consideration should be given for mold and moisture, and for termite inspection and treatment. (GA R 402.2.11))
- F. 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. Exposed earth in unvented crawl space foundations shall be covered with a continuous Class I vapor retarder with 6 inches of overlap; then sealed or taped. (GA R 402.2.11)
  - F1. ALL crawl spaces need 100% vapor barrier coverage. (GA R 402.2.11)

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