

North Carolina 2018 - R402.1.5 Total UA

**Property**

, NC 27546
Model: CC 2560
Community: NA

Organization

Southern Energy Manager
Justin Smith

Inspection Status

Results are projected

Template - Caviness & Cates - CC
2560 - CZ 4 slab - HERS
CC2560 slab

Builder

Caviness and Cates

This report is based on a proposed design and does not confirm field enforcement of design elements.

Building UA

Elements	NC Reference	As Designed
Ceilings	38.4	33.6
Above-Grade Walls	162.0	141.5
Windows, Doors and Skylights	120.2	114.5
Slab Floor:	70.2	91.8
Framed Floors	0.0	0.0
Foundation Walls	0.0	0.0
Rim Joists	8.0	7.9
Overall UA (Design must be equal or lower):	398.8	389.3

Requirements

✓	402.1.5	Total UA alternative compliance passes by 2.4%.
✓	402.3.2 Glazed Fenestration SHGC	Average SHGC: 0.30 Max SHGC: 0.30
✓	R402.4.2.2	Air Leakage Testing Air sealing is 4.80 ACH at 50 Pa. It must not exceed 5.00 ACH at 50 Pa.
✓	R402.5	Area-weighted average fenestration SHGC
✓	R402.5	Area-weighted average fenestration U-Factor
✓	R404.1	Lighting Equipment Efficiency
✓	Mandatory Checklist	Mandatory code requirements that are not checked by Ekotrope must be met.
✓	R403.3.1	Duct Insulation
✓	403.3.3	Duct Testing

Design exceeds requirements for North Carolina 2018 Prescriptive compliance by 2.4%.

Name: Justin Smith
Organization: Southern Energy Management

Signature: Justin Smith
Digitally signed: 8/27/21 at 9:40 AM

Ekotrope RATER - Version 3.2.4.2736

North Carolina 2018 Prescriptive compliance results calculated using Ekotrope RATER's energy and code compliance algorithm, including appropriate amendments. Ekotrope RATER is a RESNET Accredited HERS Rating Tool. All results are based on data entered by Ekotrope users. Ekotrope disclaims all liability for the information shown on this report.

Energy Code Inspection Checklist



SOUTHERN ENERGY
MANAGEMENT
ENERGY EFFICIENCY & SOLAR POWER

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General Building Information

Conditioned Area (sq ft)	2,560
Conditioned Volume (cubic ft)	23,040
Insulated Shell Area (sq ft)	5,152

The building energy model in Ekotrope reflects the building assemblies and energy features listed below. Sometimes energy features will change in the field from what has been modeled. The inspection process should identify any changes and ensure that the home continues to meet the applicable energy code.

Slab



Name: slab(1,280 s.f., 144 ft. exterior perimeter)
R-0 perimeter insulation, R-0 under slab insulation.

Framed Floor

None Present

Foundation Wall

None Present

Above Grade Wall



Name: 1st floor ambient (1,098 s.f.)
R-0 continuous insulation, R-19 cavity insulation
Insulation Grade: III



Name: 1st floor garage (198 s.f.)
R-0 continuous insulation, R-19 cavity insulation
Insulation Grade: III



Name: 2nd floor ambient (983 s.f.)
R-0 continuous insulation, R-19 cavity insulation
Insulation Grade: III



Name: 2nd floor attic (169 s.f.)
R-0 continuous insulation, R-19 cavity insulation
Insulation Grade: III

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Rim Joist



Name: 1st floor ambient (122 s.f.)
R: 13.20



Name: 1st floor garage (22 s.f.)
R: 13.20

Ceiling / Roof



Name: attic (1,280 s.f.)
R-25 continuous insulation, R-13 cavity insulation
Insulation Grade: I

Opaque Door



Name: front entry (20 s.f.)
U: 0.200



Name: garage entry (18 s.f.)
U: 0.200

Glazing



Name: front shaded (44 s.f.), U: 0.350, SHGC: 0.3, Orientation: SOUTH_EAST



Name: front 2nd unshaded (45 s.f.), U: 0.350, SHGC: 0.3, Orientation: SOUTH_EAST



Name: left unshaded (15 s.f.), U: 0.350, SHGC: 0.3, Orientation: SOUTH_WEST



Name: right unshaded (23 s.f.), U: 0.350, SHGC: 0.3, Orientation: NORTH_EAST



Name: right 2nd unshaded (38 s.f.), U: 0.350, SHGC: 0.3, Orientation: NORTH_EAST



Name: rear unshaded (60 s.f.), U: 0.350, SHGC: 0.3, Orientation: NORTH_WEST

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Name: rear shaded (35.5 s.f.), U: 0.350, SHGC: 0.3, Orientation: NORTH_WEST

Name: rear 2nd unshaded (45 s.f.), U: 0.350, SHGC: 0.3, Orientation: NORTH_WEST

Skylight

None Present

Mechanical Ventilation

None Present

Mechanical Equipment

whole house heat pump • Electric • 100% Heating Load @ 8 HSPF, 100% Cooling Load @ 14 SEER

Water Heating • Electric • 100% Hot Water Load @ 0.91 Energy Factor

Air Leakage Control

Test Status: Blower-door tested
House is air-sealed as to achieve 1,843 CFM50 (4.80 ACH50) or less at final blower-door test.

Infiltration Requirements for IECC in Climate Zone 4

2009 IECC Infiltration limit for the design home is 7 ACH50.

2012 IECC Infiltration limit for the design home is 3 ACH50.

2015 IECC Infiltration limit for the design home is 3 ACH50.

2018 IECC Infiltration limit for the design home is 3 ACH50.

Duct Leakage

Duct System 1

NOT entirely within conditioned space, testing required

Leakage to Outside specified as: 102 CFM @ 25Pa (3.98 / 100 ft²)

Total Leakage specified as: 102 CFM @ 25Pa (Post-Construction)

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Duct Leakage Code Requirements for IECC

2009 IECC:

Postconstruction Leakage Test: Duct Leakage to Outdoors ≤ 8 CFM25 / 100 sq ft CFA.

Rough in Test with AHU: Total Duct Leakage ≤ 6 CFM25 / 100 sq ft CFA.

Rough in Test without AHU: Total Duct Leakage ≤ 4 CFM25 / 100 sq ft CFA.

2012 IECC Mandatory, 2015 and 2018 IECC Prescriptive Paths:

Postconstruction Leakage Test: Total Duct Leakage ≤ 4 CFM25 / 100 sq ft CFA.

Rough in Test with AHU: Total Duct Leakage ≤ 4 CFM25 / 100 sq ft CFA.

Rough in Test without AHU: Total Duct Leakage ≤ 3 CFM25 / 100 sq ft CFA.

2015 and 2018 IECC Performance Paths (Cost Compliance):

Leakage testing is required UNLESS all ducts and air handlers are located entirely within the thermal envelope.

There is no pass/fail threshold for duct leakage on the performance path.

Project Notes

Initial Inputs _____ JS 08/27/21 _____

- confirm HVAC specs
- confirm if programmable thermostats installed
- modeled to worst case orientation
- confirm cfl lighting %