

# North Carolina 2018 - Simulated Performance Alternative (N1105)

## Property

TBD  
Angier, NC 27574  
Model: Macon\_1  
Community: Satterfield Community

## Organization

Performance Point, LLC.  
Leigh Humphries

## Inspection Status

Results are projected

## Builder

LGI Development

The Macon  
LGI\_Macon\_1\_GL\_WinPerPlan

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

## Annual Energy Cost

Design	North Carolina 2018 Performance	As Designed
Heating	\$359	\$338
Cooling	\$139	\$144
Water Heating	\$320	\$320
Mechanical Ventilation	\$0	\$0
<b>SubTotal - Used to determine compliance</b>	<b>\$818</b>	<b>\$802</b>
Lights & Appliances w/out Ventilation	\$397	\$397
Onsite generation	\$0	\$0
<b>Total</b>	<b>\$1,215</b>	<b>\$1,199</b>

R405.3 Source Energy Exception: The proposed home uses 1.75 MBtu LESS source energy than the reference home.

## Requirements

✓	R405.3	Performance-based compliance passes by 2.0%	The proposed house meets the North Carolina 2018 Performance reference energy bill requirement by \$16.3 (1.75 MBtu).
✓	R402.4.2.2	Air Leakage Testing	Air sealing is 0.23 CFM50 / ft <sup>2</sup> Shell Area. It must not exceed 0.30 CFM50 / ft <sup>2</sup> Shell Area.
✓	R402.5	Area-weighted average fenestration SHGC	Area-weighted average fenestration SHGC is 0.306. The maximum allowed value is [No Limit].
✓	R402.5	Area-weighted average fenestration U-Factor	
✓	R404.1	Lighting Equipment	At least 75.0% of fixtures shall be high-efficacy lamps, currently 100.0% are high-efficacy.
✓	Mandatory Checklist	Mandatory code requirements that are not checked by Ekotrope must be met.	2015 IECC Mandatory Checklist must be checked as complete.
✓	R403.3.1	Duct Insulation	Duct insulation meets the requirements specified in North Carolina 2018 Code Section 403.3.1.

**Design exceeds requirements for North Carolina 2018 Performance compliance by 2%.**

As a 3rd party extension of the code jurisdiction utilizing these reports, I certify that this energy code compliance document has been created in accordance with the requirements of Chapter 4 of the adopted International Energy Conservation Code based on HARNETT County. If rating is Projected, I certify that the building design described herein is consistent with the building plans, specifications, and other calculations submitted with the permit application. If rating is Confirmed, I certify that the address referenced above has been inspected/tested and that the mandatory provisions of the IECC have been installed to meet or exceed the intent of the IECC or will be verified as such by another party.

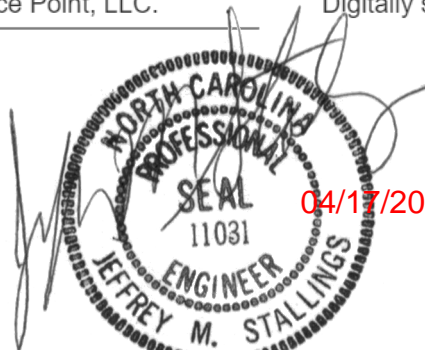
Name: Leigh Humphries

Signature: 

Organization: Performance Point, LLC.

Digitally signed: 4/14/23 at 4:05 PM

Jeff Stallings  
716 Barnsdale Rd  
Winston-Salem, NC 27106



Ekotrope RATER - Version 4.1.0.3140

North Carolina 2018 Performance 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

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## General Building Information

Conditioned Area (sq ft)	1,193
Conditioned Volume (cubic ft)	10,709
Insulated Shell Area (sq ft)	3,823.9

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: House Slab(1,193 s.f., 162.8 ft. exterior perimeter)  
R-10 perimeter insulation, R-0 under slab insulation.

## Framed Floor

None Present

## Foundation Wall

None Present

## Above Grade Wall



Name: 2x4 Ambient (1,093.2 s.f.)  
R-0 continuous insulation, R-15 cavity insulation  
Insulation Grade: I



Name: 2x4 Garage (238.3 s.f.)  
R-0 continuous insulation, R-15 cavity insulation  
Insulation Grade: I



Name: 2x6 Garage (48.4 s.f.)  
R-0 continuous insulation, R-19 cavity insulation  
Insulation Grade: I

## Rim Joist

None Present

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## Ceiling / Roof



Name: Ceiling 6:12 (651 s.f.)  
R-28.5 continuous insulation, R-9.5 cavity insulation  
Insulation Grade: I



Name: Ceiling - 6:12 (54 s.f.)  
R-0 continuous insulation, R-38 cavity insulation  
Insulation Grade: I



Name: Slope (546 s.f.)  
R-0 continuous insulation, R-30 cavity insulation  
Insulation Grade: I

## Opaque Door



Name: Garage (17.8 s.f.)  
R: 7.00

## Glazing



Name: Front (15 s.f.), U: 0.350, SHGC: 0.3, Orientation: NORTH\_EAST



Name: Front Door (20 s.f.), U: 0.260, SHGC: 0.22, Orientation: NORTH\_EAST



Name: Right (6 s.f.), U: 0.350, SHGC: 0.33, Orientation: NORTH\_WEST



Name: Back (15 s.f.), U: 0.350, SHGC: 0.33, Orientation: SOUTH\_WEST



Name: Back - Kitchen (6 s.f.), U: 0.350, SHGC: 0.33, Orientation: SOUTH\_WEST



Name: Back Door (16.67 s.f.), U: 0.350, SHGC: 0.33, Orientation: SOUTH\_WEST



Name: Back Door fxd (16.67 s.f.), U: 0.350, SHGC: 0.33, Orientation: SOUTH\_WEST



Name: Left (15 s.f.), U: 0.350, SHGC: 0.33, Orientation: SOUTH\_EAST

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## Skylight

None Present

## Mechanical Ventilation

None Present

## Mechanical Equipment

Heat Pump • Electric • 100% Heating Load @ 8.2 HSPF, 100% Cooling Load @ 14 SEER

Water Heater • Electric • 100% Hot Water Load @ 0.93 Energy Factor

## Air Leakage Control

Test Status: Blower-door tested  
House is air-sealed as to achieve 892 CFM50 (5.00 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.

2021 IECC Infiltration limit for the design home is 5 ACH50.

Note: Under IECC 2021, this home is considered to be in Climate Zone 3

## Duct Leakage

Duct System 1

NOT entirely within conditioned space, testing required

Leakage to Outside specified as: 4 CFM25 / 100 ft<sup>2</sup>

Total Leakage specified as: 4 CFM25 / 100 ft<sup>2</sup> (Post-Construction)

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## Duct Leakage Code Requirements for IECC

### 2009 IECC:

Postconstruction Leakage Test: Duct Leakage to Outdoors  $\leq 8$  CFM25 / 100 sq ft CFA.

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

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

### 2012 IECC Mandatory, 2015, 2018, & 2021 IECC Prescriptive Paths:

Postconstruction Leakage Test: Total Duct Leakage  $\leq 4$  CFM25 / 100 sq ft CFA.

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

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

\* Note: IECC 2021 requires Total Duct Leakage  $\leq 8$  CFM25 / 100 sq ft CFA when all ducts and air handlers are within the building thermal envelope.

### 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

JM\_04/14/2023\_Performance Report

**LGI\_Macon\_1**

Worst orientation (W)

SC\_4/14/23\_QC Check

## Energy Specifications Label

*TBD*

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Ekotrope RATER - Version: 4.1.0.3140

### Building Envelope Specs

Ceiling: R-38

Above Grade Walls: R-15

Foundation Walls: N/A

Exposed Floor: N/A

Slab: R-10

Infiltration: 5 ACH50

Duct Insulation: Supply: R8, Return: R8

Duct Lkg to Outdoors: 4 CFM25 / 100 ft<sup>2</sup>

### Window & Door Specs

U-Value: 0.35, SHGC: 0.33

Door: R-7

### Mechanical Equipment Specs

Heating: Air Source Heat Pump • Electric • 8.2

HSPF

Cooling: Air Source Heat Pump • Electric • 14 SEER

Hot Water: Residential Water Heater • Electric •

0.93 Energy Factor

Average Mechanical Ventilation: 0 CFM

### Builder or Design Professional

Signature: \_\_\_\_\_

# Builder Affidavit

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**Inspection Status**

Results are projected

## Important Notice to Builder

Builder affirms in this affidavit that all building characteristics described in the Building Summary Report accurately reflect this New Home. Builder agrees to allow the Home Energy Rating System (HERS) Provider and/or Rater to verify building characteristics of this New Home fully at the HERS Rater/Provider's discretion. The HERS Provider and Rater do not create or imply any duty or obligations to Builder or any subsequent owner. Builder is responsible for taking any actions necessary to protect Builder's interest. There is no guarantee or warranty whatsoever expressed or implied from the HERS Provider or Rater.

HERS® Index Score:70

Builder Name: LGI Development

Builder Signature: \_\_\_\_\_

Name: Leigh Humphries

Signature: 

Organization: Performance Point, LLC.

Digitally signed: 4/14/23 at 4:05 PM