

Home Energy Rating Certificate

Final Report

Rating Date: 2024-01-25

Registry ID: 950422103

Ekotrope ID: Lz1JXkR2



HERS® Index Score:

13

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit www.hersindex.com

Annual Savings

\$2,875

*Relative to an average U.S. home

Home:

147 Abundance Run
Asheville, NC 28805

Builder:

Soufl Construction

Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	17.2	\$538
Cooling	1.7	\$55
Hot Water	1.9	\$59
Lights/Appliances	21.4	\$683
Service Charges		\$168
Generation (e.g. Solar)	32.2	-\$1,019
Total:	42.2	\$484

This home meets or exceeds the criteria of the following:

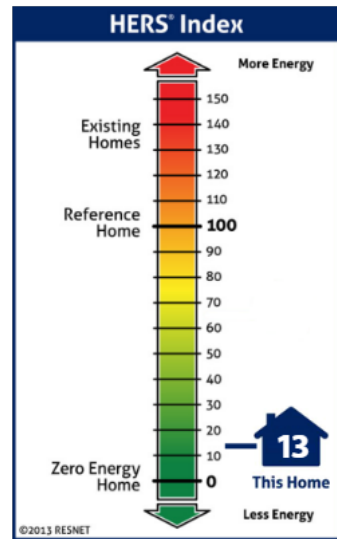
ENERGY STAR v3.1

ENERGY STAR v3

2015 International Energy Conservation Code

2009 International Energy Conservation Code

2006 International Energy Conservation Code



Home Feature Summary:

Home Type:	Single family detached
Model:	Custom
Community:	Custom 28805 Abundance Run
Conditioned Floor Area:	2,544 ft ²
Number of Bedrooms:	3
Primary Heating System:	Air Source Heat Pump • Electric • 7.8 HSPF2
Primary Cooling System:	Air Source Heat Pump • Electric • 14.8 SEER2
Primary Water Heating:	Residential Water Heater • Electric • 3.88 UEF
House Tightness:	641.6 CFM50 (1.33 ACH50)
Ventilation:	77 CFM • 69 Watts • HRV
Duct Leakage to Outside:	0 CFM @ 25Pa (0 / 100 ft ²)
Above Grade Walls:	R-19
Ceiling:	Vaulted Roof, R-26
Window Type:	U-Value: 0.28, SHGC: 0.17
Foundation Walls:	R-8
Framed Floor:	R-22

Rating Completed by:

Energy Rater: Matthew Vande

RESNET ID: 8716644

Rating Company: Vandemusser Design

26 Crabapple Lane

8283484723

Rating Provider: Vandemusser Design

26 Crabapple Lane

8283484723

Matthew Vande, Certified Energy Rater

Digitally signed: 2/6/24 at 9:16 AM



HERS Emissions Comparison



Property

147 Abundance Run
Asheville, NC 28805
Model: Custom
Community: Custom 28805 Abundance

Organization

Vandemusser Design
Matthew Vande
8283484723

Inspection Status

2024-01-25
Rater ID (RTIN): 8716644
RESNET Registered
(Confirmed)

23013-01 171 Abundance Run
Initial House Design

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Annual Carbon Dioxide (CO ₂) [tons/yr]	HERS Ref.	Rated Home	Savings	% Saved
Heating	5.9	3.1	2.8	47.1%
Cooling	0.9	0.3	0.6	65.8%
Water Heating	2.0	0.3	1.6	82.9%
Lights & Appliances	5.3	3.9	1.4	27%
Photovoltaics	-0.0	-5.9	5.9	
TOTAL	14.1	1.8	12.3	87.2%

Annual Sulfur Dioxide (SO ₂) [lbs/yr]	HERS Ref.	Rated Home	Savings	% Saved
Heating	15.2	8.1	7.2	47.1%
Cooling	2.3	0.8	1.5	65.8%
Water Heating	5.1	0.9	4.2	82.9%
Lights & Appliances	13.7	10.0	3.7	27%
Photovoltaics	-0.0	-15.1	15.1	
TOTAL	36.4	4.7	31.8	87.2%

Annual Nitrogen Oxide (NO _x) [lbs/yr]	HERS Ref.	Rated Home	Savings	% Saved
Heating	8.6	4.5	4.0	47.1%
Cooling	1.3	0.5	0.9	65.8%
Water Heating	2.9	0.5	2.4	82.9%
Lights & Appliances	7.7	5.6	2.1	27%
Photovoltaics	-0.0	-8.5	8.5	
TOTAL	20.5	2.6	17.9	87.2%

Energy Use Intensity (EUI) [kBtu/ft ²]	HERS Ref.	Rated Home	Savings	% Saved
Site EUI	30.5	3.9	26.6	87.2%

HERS Fuel Summary Comparison



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Annual Energy Cost [\$/yr]	HERS Ref.	Rated Home	Savings	% Saved
Electric	\$2,584	\$484	\$2,100	81.3%

Annual End-Use Cost [\$/yr]	HERS Ref.	Rated Home	Savings	% Saved
Heating	\$993	\$538	\$455	45.8%
Cooling	\$162	\$55	\$107	66%
Water Heating	\$341	\$59	\$282	82.8%
Lights & Appliances	\$920	\$683	\$237	25.8%
Onsite Generation	-\$0	-\$1,019	\$1,019	
Service Charges	\$168	\$168	\$0	0%
Total	\$2,584	\$484	\$2,100	81.3%

Annual End-Use Consumption	HERS Ref.	Rated Home	Savings	% Saved
Heating [Electric kWh]	9,531.1	5,038.7	4,492.4	47.1%
Cooling [Electric kWh]	1,466.5	500.9	965.5	65.8%
Hot Water [Electric kWh]	3,190.4	546.0	2,644.4	82.9%
Lights & Appliances [Electric kWh]	8,583.2	6,268.4	2,314.8	27%
Total [Electric kWh]	22,771.2	12,354.1	10,417.1	45.7%
Total Onsite Generation kWh	0.0	9,440.9	-9,440.9	

Peak Electric Consumption	HERS Ref.	Rated Home	Savings	% Saved
Peak Winter kW	6.69	3.84	2.85	42.5%
Peak Summer kW	3.20	1.60	1.59	49.8%

Utility Rates

Electricity	Duke NC Estar 10-1-23
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RESNET HOME ENERGY RATING Standard Disclosure



For home(s) located at: 147 Abundance Run, Asheville, NC

Check the applicable disclosure(s):

- 1. The Rater or the Rater's employer is receiving a fee for providing the rating on this home.
- 2. In addition to the rating, the Rater or the Rater's employer has also provided the following consulting services for this home:

home:

- A. Mechanical system design
- B. Moisture control or indoor air quality consulting
- C. Performance testing and/or commissioning other than required for the rating itself
- D. Training for sales or construction personnel
- E. Other(specify)
- 3. The Rater or the Rater's employer is:
 - A. The seller of this home or their agent
 - B. The mortgagor for some portion of the financed payments on this home
 - C. An employee, contractor, or consultant of the electric and/or natural gas utility serving this home
- 4. The Rater or Rater's employer is a supplier or installer of products, which may include:

Products	Installed in this home by	OR is in the business of
HVAC systems	<input type="checkbox"/> Rater <input type="checkbox"/> Employer	<input type="checkbox"/> Rater <input type="checkbox"/> Employer
Thermal insulation systems	<input type="checkbox"/> Rater <input type="checkbox"/> Employer	<input type="checkbox"/> Rater <input type="checkbox"/> Employer
Air sealing of envelope or duct systems	<input type="checkbox"/> Rater <input type="checkbox"/> Employer	<input type="checkbox"/> Rater <input type="checkbox"/> Employer
Energy efficient appliances	<input type="checkbox"/> Rater <input type="checkbox"/> Employer	<input type="checkbox"/> Rater <input type="checkbox"/> Employer
Construction (builder, developer, construction contractor, etc)	<input type="checkbox"/> Rater <input type="checkbox"/> Employer	<input type="checkbox"/> Rater <input type="checkbox"/> Employer
Other (specify): <input type="text"/>	<input type="checkbox"/> Rater <input type="checkbox"/> Employer	<input type="checkbox"/> Rater <input type="checkbox"/> Employer

- 5. This home has been verified under the provisions of Chapter 6, Section 603 "Technical Requirements for Sampling" of the Mortgage Industry National Home Energy Rating Standard as set forth by the Residential Energy Services Network (RESNET). Rater Certification #: 8716644

Name: Matthew Vande Signature: 
 Organization: VandeMusser Design Digitally signed: 2/6/24 at 9:16 AM

I attest that the above information is true and correct to the best of my knowledge. As a Rater or Rating Provider I abide by the rating quality control provisions of the Mortgage Industry National Home Energy Rating Standard as set forth by the Residential Energy Services Network(RESNET). The national rating quality control provisions of the rating standard are contained in Chapter One 102.1.4.6 of the standard and are posted at

<https://standards.resnet.us>

The Home Energy Rating Standard Disclosure for this home is available from the rating provider.

147 Abundance Run
Asheville, NC 28805

Soufl Construction

VandeMusser Design

RESNET

Feb 6, 2024 3.1

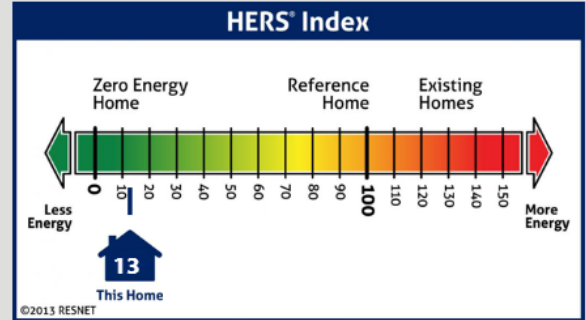
Verified using Ekotrope (Version 4.1.2.3332)



ENERGY STAR® CERTIFIED NEW CONSTRUCTION

Builder/Developer: Soufl Construction
Permit Date/Number:
Home/Unit Address: 147 Abundance Run, Asheville, NC 28805

Rating Company: VandeMusser Design
Rater ID Number: 8716644
Rating Date: 2024-01-25
Oversight By: RESNET
Program/Version Number: 3.1



This value is not intended to be used for code compliance.

Standard Features of ENERGY STAR Certified New Homes and Apartments

Your ENERGY STAR certified new home or apartment has been designed, constructed, and independently verified to meet rigorous requirements for energy efficiency set by the U.S. Environmental Protection Agency (EPA), including:

Thermal Enclosure System

A complete thermal enclosure system that includes comprehensive air sealing, quality-installed insulation, and high-performing windows to deliver improved comfort and lower utility bills.



Air Infiltration Test: 641.6 CFM50 (1.33 ACH50)

Primary Insulation Levels:

Ceiling: R-26 **Floor:** R-22
Wall: R-19 **Slab:** R-8

Primary Window Efficiency:

U-Value: 0.28 **SHGC:** 0.17

Water Management System

A comprehensive water management system to protect roofs, walls, and foundations.



Flashing, a drainage plane, and site grading to move water from the roof to the ground and then away from the home or building.

Water-resistant materials on below-grade walls and underneath slabs to reduce the potential for water entering the home or building.

Management of moisture levels in building materials during construction.

Heating, Cooling, and Ventilation System

A high-efficiency heating, cooling, and ventilation system that is designed and installed for optimal performance.



Total Duct Leakage: **Duct Leakage to Outdoors:**
206.5 CFM @ 25Pa (Post- 0 CFM @ 25Pa (0 / 100 ft²)
Construction)

Primary Heating (System Type • Fuel Type • Efficiency):

Air Source Heat Pump • Electric • 7.8 HSPF2

Primary Cooling (System Type • Fuel Type • Efficiency):

Air Source Heat Pump • Electric • 14.8 SEER2

Whole-House Ventilation Type (System Type):

Balanced

Energy Efficient Lighting and Appliances

Energy efficient products to help reduce utility bills, while providing high-quality performance.



Energy Efficient Lighting: 100%

ENERGY STAR Certified Appliances and Fans:

Refrigerators: 1 **Dishwashers:** 1
Ceiling Fans: 0 **Exhaust Fans:** 2

Primary Water Heater (System Type • Fuel Type • Efficiency):

Residential Water Heater • Electric • 3.88 UEF

About this certificate

The certificate provides a summary of the major energy efficiency and other construction features that contribute to this home or apartment earning the ENERGY STAR, as determined through independent inspection and verification performed by a trained professional. The Energy Rating Index or HERS index for this home, if reported, is calculated in accordance with ANSI/RESNET/ICC Standard 301, with any exceptions

approved by EPA. Because the version of Standard 301 used to calculate this index may not align with the version referenced by code, this value is not intended to be used to demonstrate compliance with code. Note that when a home or apartment contains multiple performance levels for a particular feature (e.g., window efficiency or insulation levels), the predominant value is shown. Also, homes and apartments may be certified

to earn the ENERGY STAR using a sampling protocol, whereby one home or apartment is randomly selected from a set for representative inspections and testing. In such cases, the features found in each home or apartment within the set are intended to meet or exceed the values presented on this certificate. The actual values for your home or apartment may differ, but offer equivalent or better performance.

ENERGY STAR V3.1 Home Report



Property

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Asheville, NC 28805
Model: Custom
Community: Custom 28805 Abundance

Organization

VandeMusser Design
Matthew Vande
8283484723

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Mandatory Requirements

- ✓ Duct leakage at post construction better than or equal to applicable requirements.
- ✓ Total building thermal envelope UA meets or exceeds applicable requirements.
- ✓ Slab on Grade Insulation must be > R-5, and at IECC 2009 Depth for Climate Zones 4 and above.
- ✓ Envelope insulation achieves RESNET Grade I installation, or Grade II with insulated sheathing.
- ✓ Total window thermal properties meet or exceed the applicable requirements
- ✓ Duct insulation meets the EPA minimum requirements of R-6.
- ✓ Mechanical ventilation system is installed in the home.
- ✓ ENERGY STAR Checklists fully verified and complete.

ERI (HERS) Index Target

Reference Home ERI (HERS)	64
SAF (Size Adjustment Factor)	1.00
SAF Adjusted ERI (HERS) Target	<u>64</u>
As Designed Home ERI (HERS)	13
As Designed Home ERI (HERS) w/o PV	54

Normalized, Modified End-Use Loads (MBtu / year)

	ENERGY STAR	As Designed
Heating	20.9	23.1
Cooling	5.6	2.9
Water Heating	9.2	1.7
Lights and Appliances	21.5	21.2
Total	57.2	48.9



This home **MEETS** or **EXCEEDS** the energy efficiency requirements for designation as an EPA ENERGY STAR Qualified Home under Version 3.1

Pollution Prevented

Type of Emissions	Reduction
Carbon Dioxide (CO ₂) - tons/yr	7.2

Energy Cost Savings

	\$/yr
Heating	-83
Cooling	54
Water Heating	264
Lights & Appliances	6
Generation Savings	1,019
Total	1,261

The energy savings and pollution prevented are calculated by comparing the Rated Home to the ENERGY STAR Version 3.1 Reference Home as defined in the ENERGY STAR Qualified Homes ERI (HERS) Target Procedure for National Program Requirements, Version 3.1 promulgated by the Environmental Protection Agency (EPA). In accordance with the ANSI/RESNET/ICC 301 Standard, building inputs affecting setpoints infiltration rates, window shading and the existence of mechanical systems may have been changed prior to calculating loads

Fuel Summary



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Annual Energy Cost

Electric	\$487
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Annual End-Use Cost

Heating	\$545
Cooling	\$56
Water Heating	\$59
Lights & Appliances	\$678
Onsite Generation	-\$1,019
Service Charges	\$168
Total	\$487

Annual End-Use Consumption

Heating [Electric kWh]	5,107.8
Cooling [Electric kWh]	504.5
Hot Water [Electric kWh]	545.7
Lights & Appliances [Electric kWh]	6,224.3
Total [Electric kWh]	12,382.3
Total Onsite Generation [Electric kWh]	9,440.9

Peak Electric Consumption

Peak Winter kW	3.84
Peak Summer kW	1.59

Utility Rates

Electricity	Duke NC Estar 10-1-23
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Component Loads



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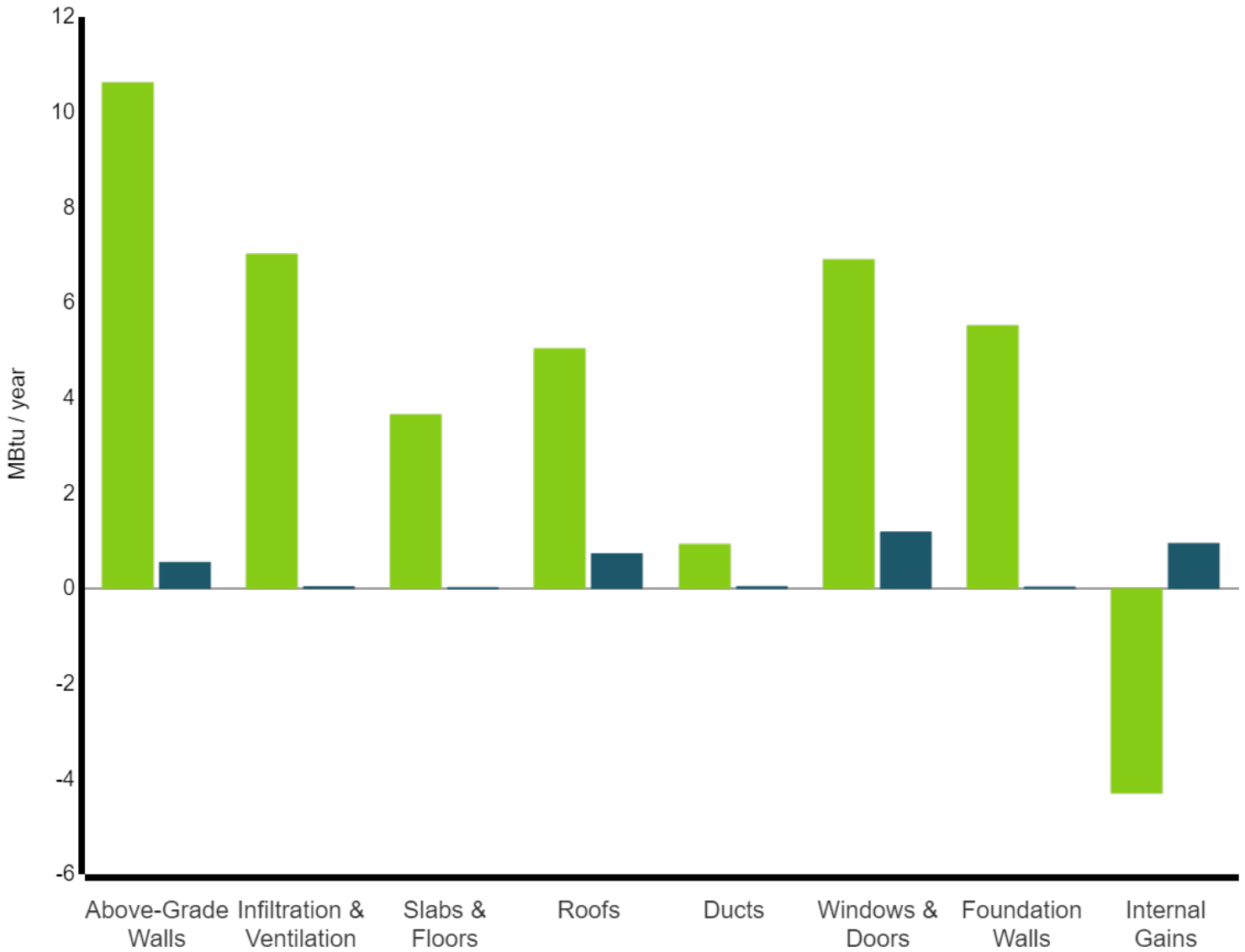
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Heating & Cooling Loads



Heating ■

Cooling ■

Ekotrope RATER - Version 4.1.2.3332

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