FORM R405-2020

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Archbold Residence	Builder Name:	
Street:	NW Frontier Drive	Permit Office:	Columbia County
City, State, Zip:	Lake City , FL , 32055	Permit Number:	
Owner:	Keith Archbold	Jurisdiction:	
Design Location:	FL, Gainesville	County:	Columbia (Florida Climate Zone 2)

1. New construction or existing	New (From Plans)
2. Single family or multiple family	Detached
3. Number of units, if multiple family	1
4. Number of Bedrooms	4
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	2552
Conditioned floor area below grade (ft²)	0

7. Windows (383.5 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.36	383.50 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		7.180 ft.
Area Weighted Average SHGC:		0.250

8. Skylights		Area
c. U-Factor:(AVG)	N/A	ft²
SHGC(AVG):	N/A	

9. Floor Types (2552.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	2191.00 ft²
b. Floor over Garage	R=19.0	361.00 ft²
c. N/A	R=	ft²

10. Wall Types (2945.8 sqft.)	Insulation	Area
a. Concrete Block - Int Insul, Exterior	R=5.0	1479.30 ft²
b. Frame - Wood, Exterior	R=13.0	1066.00 ft²
c. Frame - Wood, Adjacent	R=13.0	400.44 ft²
d. N/A	R=	ft²

11. Ceiling Types (2679.0 sqft.)	Insulation	Area
a. Under Attic (Vented)	R=38.0	2679.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

12. Ducts	R	ft²
a. Sup: Attic, Ret: Attic, AH: Attic	6	638

13. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	31.3	SEER:14.00

14. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	43.6	HSPF:8.20

15. Hot water systems		
a. Electric	Tankless	Cap: 1 gallons
		EF: 0.920
b. Conservation features		
None		

16. Credits	CV, Pstat

Glass/Floor Area: 0.150

Total Proposed Modified Loads: 69.74

Total Baseline Loads: 74.67

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: Will C Fry

DATE: 7 / 29 / 2022

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____

DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____

DATE: _____

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.

- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires an envelope leakage test report with envelope leakage no greater than 5.00 ACH50 (R402.4.1.2).

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Archbold Residence	Bedrooms:	4	Address Type:	Street Address
Building Type:	User	Conditioned Area:	2552	Lot #	
Owner Name:	Keith Archbold	Total Stories:	2	Block/Subdivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:		Rotate Angle:	0	Street:	NW Frontier Drive
Permit Office:	Columbia County	Cross Ventilation:	Yes	County:	Columbia
Jurisdiction:		Whole House Fan:	No	City, State, Zip:	Lake City , FL , 32055
Family Type:	Detached				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

√	Design Location	TMY Site	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
_____	FL, Gainesville	FL_GAINESVILLE_REGI	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	2552	23330

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	1st Floor	2191	20442	Yes	6	3	1	Yes	Yes	Yes
2	2nd Floor	361	2888	No	2	1	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	Perimeter R-Value	Area	Joist R-Value	Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulation	1st Floor	248 ft	0	2191 ft²	----	0	0	1
_____	2	Floor over Garage	2nd Floor	----	----	361 ft²	19	0	0	1

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Gable or shed	Composition shingles	3190 ft²	958 ft²	Medium	Y	0.96	No	0.9	No	0	36.87

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	2552 ft²	Y	N

INPUT SUMMARY CHECKLIST REPORT

CEILING

√	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
	1	Under Attic (Vented)	1st Floor	38	Double Batt	2300 ft²	0.11	Wood
	2	Under Attic (Vented)	1st Floor	38	Double Batt	379 ft²	0.11	Wood

WALLS

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
	1	S	Exterior	Concrete Block - Int Insul	1st Floor	5	34	0	9	4	317.3 ft²		0	0.75	0
	2	E	Exterior	Concrete Block - Int Insul	1st Floor	5	4	8	9	4	43.6 ft²		0	0.75	0
	3	E	Garage	Frame - Wood	1st Floor	13	17	10	9	4	166.4 ft²		0.23	0.75	0
	4	S	Garage	Frame - Wood	1st Floor	13	26		9		234.0 ft²		0.23	0.75	0
	5	E	Exterior	Concrete Block - Int Insul	1st Floor	5	29	10	9	4	278.4 ft²		0	0.75	0
	6	N	Exterior	Concrete Block - Int Insul	1st Floor	5	29	4	9	4	273.8 ft²		0	0.75	0
	7	W	Exterior	Concrete Block - Int Insul	1st Floor	5	10	8	9	4	99.6 ft²		0	0.75	0
	8	W	Exterior	Concrete Block - Int Insul	1st Floor	5	10		9	4	93.3 ft²		0	0.75	0
	9	N	Exterior	Frame - Wood	1st Floor	13	42	8	9		384.0 ft²		0.23	0.75	0
	10	W	Exterior	Concrete Block - Int Insul	1st Floor	5	31	4	9	4	292.4 ft²		0	0.75	0
	11	N	Exterior	Frame - Wood	2nd Floor	13	11	8	8		93.3 ft²		0.23	0.75	0
	12	E	Exterior	Frame - Wood	2nd Floor	13	8		8		64.0 ft²		0.23	0.75	0
	13	S	Exterior	Frame - Wood	2nd Floor	13	7	2	8		57.3 ft²		0.23	0.75	0
	14	E	Exterior	Frame - Wood	2nd Floor	13	10		8		80.0 ft²		0.23	0.75	0
	15	N	Exterior	Frame - Wood	2nd Floor	13	9	11	8		79.3 ft²		0.23	0.75	0
	16	E	Exterior	Frame - Wood	2nd Floor	13	10		8		80.0 ft²		0.23	0.75	0
	17	W	Exterior	Frame - Wood	2nd Floor	13	28	6	8		228.0 ft²		0.23	0.75	0
	18	S	Exterior	Concrete Block - Int Insul	1st Floor	5	8	8	9	4	80.9 ft²		0	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
	1	S	Insulated	1st Floor	None	.46	3		6	8	20 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
	1	S	1	Vinyl	Low-E Double	Yes	0.36	0.25	N	70.0 ft²	9 ft 6 in	1 ft 0 in	None	None
	2	S	1	TIM	Low-E Double	Yes	0.36	0.25	N	42.7 ft²	9 ft 6 in	1 ft 0 in	None	None
	3	S	18	Vinyl	Low-E Double	Yes	0.36	0.25	N	6.0 ft²	1 ft 6 in	1 ft 0 in	None	None
	4	E	5	Vinyl	Low-E Double	Yes	0.36	0.25	N	20.0 ft²	1 ft 6 in	1 ft 0 in	None	None
	5	N	6	Vinyl	Low-E Double	Yes	0.36	0.25	N	12.5 ft²	1 ft 0 in	2 ft 0 in	None	None
	6	N	6	Vinyl	Low-E Double	Yes	0.36	0.25	N	30.0 ft²	1 ft 0 in	2 ft 0 in	None	None
	7	W	7	Vinyl	Low-E Double	Yes	0.36	0.25	N	30.0 ft²	1 ft 6 in	1 ft 0 in	None	None
	8	W	8	TIM	Low-E Double	Yes	0.36	0.25	N	20.0 ft²	9 ft 0 in	1 ft 0 in	None	None
	9	N	9	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	11 ft 6 in	1 ft 0 in	None	None
	10	N	9	TIM	Low-E Double	Yes	0.36	0.25	N	85.3 ft²	11 ft 6 in	1 ft 0 in	None	None
	11	N	9	Vinyl	Low-E Double	Yes	0.36	0.25	N	16.0 ft²	11 ft 6 in	1 ft 0 in	None	None

INPUT SUMMARY CHECKLIST REPORT

WINDOWS

Orientation shown is the entered, Proposed orientation.

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
____	12	W	10	Vinyl	Low-E Double	Yes	0.36	0.25	N	6.0 ft²	1 ft 6 in	1 ft 0 in	None	None
____	13	N	11	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 0 in	2 ft 0 in	None	None
____	14	E	14	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 0 in	0 ft 6 in	None	None

GARAGE

√	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
____	1	760.0095 ft²	760.0095 ft²	65.8333 ft	9.33 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.00029	1944.2	106.66	200.25	.1364	5

HEATING SYSTEM

√	#	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
____	1	Electric Heat Pump/	None	Single	HSPF:8.2	43.61 kBtu/hr	1	sys#1

COOLING SYSTEM

√	#	System Type	Subtype	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
____	1	Central Unit/	None	Single	SEER: 14	31.27 kBtu/hr	930 cfm	0.7	1	sys#1

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
____	1	Electric	Tankless	Exterior	0.92	1 gal	40 gal	120 deg	None

SOLAR HOT WATER SYSTEM

√	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
____	None	None			ft²		

DUCTS

√	#	---- Supply ---- Location	R-Value	Area	---- Return ---- Location	Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool
____	1	Attic	6	638 ft²	Attic	127.6 ft²	Default Leakage	Attic	(Default) c	(Default) c			1	1

INPUT SUMMARY CHECKLIST REPORT

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

Thermostat Schedule: HERS 2006 Reference

Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
	PM	80	80	78	78	78	78	78	78	78	78	78	78
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
	PM	78	78	78	78	78	78	78	78	78	78	78	78
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66

MASS

Mass Type	Area	Thickness	Furniture Fraction	Space
Default(8 lbs/sq.ft.	0 ft²	0 ft	0.3	1st Floor
Default(8 lbs/sq.ft.	0 ft²	0 ft	0.3	2nd Floor

FORM R405-2020

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 93

The lower the EnergyPerformance Index, the more efficient the home.

NW Frontier Drive, Lake City, FL, 32055

1. New construction or existing		New (From Plans)
2. Single family or multiple family		Detached
3. Number of units, if multiple family		1
4. Number of Bedrooms		4
5. Is this a worst case?		No
6. Conditioned floor area (ft²)		2552
7. Windows**	Description	Area
a. U-Factor:	Dbl, U=0.36	383.50 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
d. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		7.180 ft.
Area Weighted Average SHGC:		0.250
8. Skylights	Description	Area
a. U-Factor(AVG):	N/A	ft²
SHGC(AVG):	N/A	

9. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	2191.00 ft²
b. Floor over Garage	R=19.0	361.00 ft²
c. N/A	R=	ft²

10. Wall Type and Insulation	Insulation	Area
a. Concrete Block - Int Insul, Exterior	R=5.0	1479.30 ft²
b. Frame - Wood, Exterior	R=13.0	1066.00 ft²
c. Frame - Wood, Adjacent	R=13.0	400.44 ft²
d. N/A	R=	ft²

11. Ceiling Type and insulation level	Insulation	Area
a. Under Attic (Vented)	R=38.0	2679.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

12. Ducts, location & insulation level	R	ft²
a. Sup: Attic, Ret: Attic, AH: Attic	6	638

13. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	31.3	SEER:14.00

14. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	43.6	HSPF:8.20

15. Hot water systems	
a. Electric	Cap: 1 gallons
	EF: 0.92
b. Conservation features	
None	
Credits (Performance method)	CV, Pstat

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: _____

*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida Energy Rating. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

Envelope Leakage Test Report (Blower Door Test)
Residential Prescriptive, Performance or ERI Method Compliance
2020 Florida Building Code, Energy Conservation, 7th Edition

Jurisdiction:	Permit #:

Job Information

Builder:	Community:	Lot: NA
Address: NW Frontier Drive		
City: Lake City	State: FL	Zip: 32055

Air Leakage Test Results *Passing results must meet either the Performance, Prescriptive, or ERI Method*

○ **PRESCRIPTIVE METHOD-**The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour at a pressure of 0.2 inch w.g. (50 Pascals) in Climate Zones 1 and 2.

○ **PERFORMANCE or ERI METHOD-**The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding the selected ACH(50) value, as shown on Form R405-2020 (Performance) or R406-2020 (ERI), section labeled as infiltration, sub-section ACH50.

ACH(50) specified on Form R405-2020-Energy Calc (Performance) or R406-2020 (ERI): 5.000

_____ x 60 ÷ 23330 = _____
CFM(50) Building Volume ACH(50)

☐ **PASS**

☐ When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department.

Method for calculating building volume:
○ Retrieved from architectural plans
● Code software calculated
○ Field measured and calculated

R402.4.1.2 Testing. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7) *Florida Statutes*, or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official.* Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 2020 7th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above.

Signature of Tester: _____ Date of Test: _____

Printed Name of Tester: _____

License/Certification #: _____ Issuing Authority: _____