

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Rendek residence
 Street: SW Mapleton St.
 City, State, Zip: Ft. White, FL, 32038
 Owner:
 Design Location: FL, Gainesville

Builder Name: RRCH
 Permit Office:
 Permit Number:
 Jurisdiction:
 County: Alachua (Florida Climate Zone 2)

- | | |
|--|------------------|
| 1. New construction or existing | New (From Plans) |
| 2. Single family or multiple family | Single-family |
| 3. Number of units, if multiple family | 1 |
| 4. Number of Bedrooms | 2 |
| 5. Is this a worst case? | No |
| 6. Conditioned floor area above grade (ft ²) | 2278 |
| Conditioned floor area below grade (ft ²) | 0 |

- | | | |
|---------------------------------------|-------------|------------------------|
| 7. Windows (210.5 sqft.) | Description | Area |
| a. U-Factor: | Dbl, U=0.22 | 210.50 ft ² |
| SHGC: | SHGC=0.33 | |
| b. U-Factor: | N/A | ft ² |
| SHGC: | | |
| c. U-Factor: | N/A | ft ² |
| SHGC: | | |
| d. U-Factor: | N/A | ft ² |
| SHGC: | | |
| Area Weighted Average Overhang Depth: | 5.420 ft. | |
| Area Weighted Average SHGC: | 0.330 | |

- | | | |
|----------------------------------|------------|-------------------------|
| 8. Floor Types (2278.0 sqft.) | Insulation | Area |
| a. Slab-On-Grade Edge Insulation | R=0.0 | 2278.00 ft ² |
| b. N/A | R= | ft ² |
| c. N/A | R= | ft ² |

- | | | |
|--------------------------------------|------------|-------------------------|
| 9. Wall Types (2096.3 sqft.) | Insulation | Area |
| a. Frame - Wood, Exterior | R=19.0 | 2096.30 ft ² |
| b. N/A | R= | ft ² |
| c. N/A | R= | ft ² |
| d. N/A | R= | ft ² |
| 10. Ceiling Types (2278.0 sqft.) | Insulation | Area |
| a. Under Attic (Vented) | R=38.0 | 2278.00 ft ² |
| b. N/A | R= | ft ² |
| c. N/A | R= | ft ² |
| 11. Ducts | R | ft ² |
| a. Sup: Attic, Ret: Attic, AH: Attic | 6 | 455.6 |

- | | | |
|---------------------|---------|------------|
| 12. Cooling systems | kBtu/hr | Efficiency |
| a. Central Unit | 40.0 | SEER:14.00 |

- | | | |
|-----------------------|---------|------------|
| 13. Heating systems | kBtu/hr | Efficiency |
| a. Electric Heat Pump | 41.0 | HSPF:8.20 |

- | | | |
|--------------------------|----------|----------------|
| 14. Hot water systems | | |
| a. Propane | Tankless | Cap: 1 gallons |
| b. Conservation features | | EF: 0.840 |
| None | | |

- | | |
|-------------|-----------|
| 15. Credits | CF, Pstat |
|-------------|-----------|

Glass/Floor Area: 0.092

Total Proposed Modified Loads: 54.83

Total Baseline Loads: 56.41

PASS

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

PREPARED BY: Gigilera Suncoast Insulators
 DATE: 9-9-20

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

OWNER/AGENT: [Signature]
 DATE: 9/10/2020

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 7.00 ACH50 (R402.4.1.2).

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Rendek residence	Bedrooms:	2	Address Type:	Street Address
Building Type:	User	Conditioned Area:	2278	Lot #	
Owner Name:		Total Stories:	1	Block/Subdivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:	RRCH	Rotate Angle:	0	Street:	SW Mapleton St.
Permit Office:		Cross Ventilation:		County:	Alachua
Jurisdiction:		Whole House Fan:		City, State, Zip:	Ft. White , FL , 32038
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

✓	Design Location	TMY Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	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	2278	20502

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	2278	20502	Yes	3	2	1	Yes	Yes	Yes

FLOORS

✓	#	Floor Type	Space	Perimeter	R-Value	Area	Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulatio	Main	240 ft	0	2278 ft²	----	0	0 1

ROOF

✓	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt Tested	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Hip	Composition shingles	2638 ft²	0 ft²	Medium	N	0.96	No	0.9	No	0	30.3

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	150	2278 ft²	N	N

CEILING

✓	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	38	Blown	2278 ft²	0.11	Wood

INPUT SUMMARY CHECKLIST REPORT

WALLS

✓ #	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	SW	Exterior	Frame - Wood	Main	19	12	10	9		115.5 ft²		0.23	0.75	0
2	NW	Exterior	Frame - Wood	Main	19	3	8	9		33.0 ft²		0.23	0.75	0
3	SW	Exterior	Frame - Wood	Main	19	3		9		27.0 ft²		0.23	0.75	0
4	SW	Exterior	Frame - Wood	Main	19	32		9		288.0 ft²		0.23	0.75	0
5	NW	Exterior	Frame - Wood	Main	19	1	4	9		12.0 ft²		0.23	0.75	0
6	SW	Exterior	Frame - Wood	Main	19	3		9		27.0 ft²		0.23	0.75	0
7	SE	Exterior	Frame - Wood	Main	19	3	2	9		28.5 ft²		0.23	0.75	0
8	SW	Exterior	Frame - Wood	Main	19	12		9		108.0 ft²		0.23	0.75	0
9	NW	Exterior	Frame - Wood	Main	19	45	2	9		406.5 ft²		0.23	0.75	0
10	NE	Exterior	Frame - Wood	Main	19	15	8	9		141.0 ft²		0.23	0.75	0
11	SE	Exterior	Frame - Wood	Main	19	12		9		108.0 ft²		0.23	0.75	0
12	NE	Exterior	Frame - Wood	Main	19	30	11	9		278.3 ft²		0.23	0.75	0
13	NW	Exterior	Frame - Wood	Main	19	4		9		36.0 ft²		0.23	0.75	0
14	NE	Exterior	Frame - Wood	Main	19	16	6	9		148.5 ft²		0.23	0.75	0
15	SE	Exterior	Frame - Wood	Main	19	37	8	9		339.0 ft²		0.23	0.75	0

DOORS

✓ #	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
1	SW	Insulated	Main	None	.46	6		6		36 ft²
2	NW	Insulated	Main	None	.46	2	8	6	8	17.8 ft²
3	SE	Insulated	Main	None	.46	3		6	8	20 ft²
4	NE	Insulated	Main	None	.46	3		8		24 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

✓ #	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Separation	Int Shade	Screening
1	SW	1	Vinyl	Low-E Double	Yes	0.22	0.33	N	15.0 ft²	2 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
2	SW	4	Vinyl	Low-E Double	Yes	0.22	0.33	N	72.0 ft²	8 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
3	SW	8	Vinyl	Low-E Double	Yes	0.22	0.33	N	15.0 ft²	2 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
4	NW	9	Vinyl	Low-E Double	Yes	0.22	0.33	N	15.0 ft²	2 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
5	NW	9	Vinyl	Low-E Double	Yes	0.22	0.33	N	6.0 ft²	2 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
6	NE	12	Vinyl	Low-E Double	Yes	0.22	0.33	N	24.0 ft²	14 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
7	NE	14	Vinyl	Low-E Double	Yes	0.22	0.33	N	30.0 ft²	2 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
8	SE	15	Vinyl	Low-E Double	Yes	0.22	0.33	N	20.0 ft²	2 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
9	SE	15	Vinyl	Low-E Double	Yes	0.22	0.33	N	6.0 ft²	2 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1
10	SE	15	Vinyl	Low-E Double	Yes	0.22	0.33	N	7.5 ft²	2 ft 0 in	6 ft 0 in	Drapes/blinds	Exterior 1

INPUT SUMMARY CHECKLIST REPORT

INFILTRATION													
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50					
1	Wholehouse	Proposed ACH(50)	.0004	2391.9	131.31	246.95	.1579	7					

HEATING SYSTEM										
<input checked="" type="checkbox"/>	#	System Type	Subtype	Speed	Efficiency	Capacity	Block		Ducts	
<input checked="" type="checkbox"/>	1	Electric Heat Pump/	None	Singl	HSPF:8.2	41 kBtu/hr	1		sys#1	

COOLING SYSTEM										
<input checked="" type="checkbox"/>	#	System Type	Subtype	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
<input checked="" type="checkbox"/>	1	Central Unit/	None	Singl	SEER: 14	40 kBtu/hr	1200 cfm	0.85	1	sys#1

HOT WATER SYSTEM									
<input checked="" type="checkbox"/>	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
<input checked="" type="checkbox"/>	1	Propane	Tankless	Exterior	0.84	1 gal	50 gal	120 deg	None

SOLAR HOT WATER SYSTEM							
<input checked="" type="checkbox"/>	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
<input checked="" type="checkbox"/>	None	None				ft²	

DUCTS													
<input checked="" type="checkbox"/>	#	--- Supply ---			--- Return ---			Air	CFM 25	CFM25	HVAC #		
		Location	R-Value	Area	Location	Area	Leakage Type	Handler	TOT	OUT	QN	RLF	Heat Cool
<input checked="" type="checkbox"/>	1	Attic	6	455.6 ft	Attic	113.9 ft	Default Leakage	Attic	(Default)	(Default)			1 1

TEMPERATURES																								
Programable Thermostat: Y							Ceiling Fans:																	
Cooling	<input checked="" type="checkbox"/>	Jan	<input checked="" type="checkbox"/>	Feb	<input checked="" type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	Jun	<input checked="" type="checkbox"/>	Jul	<input checked="" type="checkbox"/>	Aug	<input checked="" type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec
Heating	<input type="checkbox"/>	Jan	<input type="checkbox"/>	Feb	<input type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input type="checkbox"/>	Jun	<input type="checkbox"/>	Jul	<input type="checkbox"/>	Aug	<input type="checkbox"/>	Sep	<input checked="" type="checkbox"/>	Oct	<input checked="" type="checkbox"/>	Nov	<input type="checkbox"/>	Dec
Venting	<input type="checkbox"/>	Jan	<input type="checkbox"/>	Feb	<input type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input type="checkbox"/>	Jun	<input type="checkbox"/>	Jul	<input type="checkbox"/>	Aug	<input type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input type="checkbox"/>	Nov	<input type="checkbox"/>	Dec

INPUT SUMMARY CHECKLIST REPORT

Thermostat Schedule: HERS 2006 Reference		Hours											
Schedule Type		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 ft ²		0 ft		0.3		Main					

RESIDENTIAL ENERGY CONSERVATION CODE DOCUMENTATION CHECKLIST

Florida Department of Business and Professional Regulation Simulated Performance Alternative (Performance) Method

Applications for compliance with the 2017 Florida Building Code, Energy Conservation via the residential Simulated Performance Method shall include:

- ☐ This checklist
- ☐ A Form R405 report that documents that the Proposed Design complies with Section R405.3 of the Florida Energy Code. This form shall include a summary page indicating home address, e-ratio and the pass or fail status along with summary areas and types of components, whether the home was simulated as a worst-case orientation, name and version of the compliance software tool, name of individual completing the compliance report (one page) and an input summary checklist that can be used for field verification (usually four pages/may be greater).
- ☐ Energy Performance Level (EPL) Display Card (one page)
- ☐ HVAC system sizing and selection based on ACCA Manual S or per exceptions provided in Section R403.7
- ☐ Mandatory Requirements (five pages)

Required prior to CO for the Performance Method:

- ☐ Air Barrier and Insulation Inspection Component Criteria checklist (Table R402.4.1.1 - one page)
- ☐ A completed Envelope Leakage Test Report (usually one page)
- ☐ If Form R405 duct leakage type indicates anything other than "default leakage", then a completed Form R405 Duct Leakage Test Report (usually one page)

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD**ESTIMATED ENERGY PERFORMANCE INDEX* = 97****The lower the Energy Performance Index, the more efficient the home.**

1. New home or, addition	1. <u>New (From Plans)</u>	12. Ducts, location & insulation level	
2. Single-family or multiple-family	2. <u>Single-family</u>	a) Supply ducts	R <u>6.0</u>
3. No. of units (if multiple-family)	3. <u>1</u>	b) Return ducts	R <u>6.0</u>
4. Number of bedrooms	4. <u>2</u>	c) AHU location	Attic
5. Is this a worst case? (yes/no)	5. <u>No</u>	13. Cooling system:	Capacity <u>40.0</u>
6. Conditioned floor area (sq. ft.)	6. <u>2278</u>	a) Split system	SEER <u> </u>
7. Windows, type and area		b) Single package	SEER <u> </u>
a) U-factor:(weighted average)	7a. <u>0.220</u>	c) Ground/water source	SEER/COP <u> </u>
b) Solar Heat Gain Coefficient (SHGC)	7b. <u>0.330</u>	d) Room unit/PTAC	EER <u> </u>
c) Area	7c. <u>210.5</u>	e) Other	<u>14.0</u>
8. Skylights		14. Heating system:	Capacity <u>41.0</u>
a) U-factor:(weighted average)	8a. <u>NA</u>	a) Split system heat pump	HSPF <u> </u>
b) Solar Heat Gain Coefficient (SHGC)	8b. <u>NA</u>	b) Single package heat pump	HSPF <u> </u>
9. Floor type, insulation level:		c) Electric resistance	COP <u> </u>
a) Slab-on-grade (R-value)	9a. <u>0.0</u>	d) Gas furnace, natural gas	AFUE <u> </u>
b) Wood, raised (R-value)	9b. <u> </u>	e) Gas furnace, LPG	AFUE <u> </u>
c) Concrete, raised (R-value)	9c. <u> </u>	f) Other	<u>8.20</u>
10. Wall type and insulation:		15. Water heating system	
A. Exterior:		a) Electric resistance	EF <u> </u>
1. Wood frame (Insulation R-value)	10A1. <u>19.0</u>	b) Gas fired, natural gas	EF <u> </u>
2. Masonry (Insulation R-value)	10A2. <u> </u>	c) Gas fired, LPG	EF <u>0.84</u>
B. Adjacent:		d) Solar system with tank	EF <u> </u>
1. Wood frame (Insulation R-value)	10B1. <u> </u>	e) Dedicated heat pump with tank	EF <u> </u>
2. Masonry (Insulation R-value)	10B2. <u> </u>	f) Heat recovery unit	HeatRec% <u> </u>
11. Ceiling type and insulation level		g) Other	
a) Under attic	11a. <u>38.0</u>	16. HVAC credits claimed (Performance Method)	
b) Single assembly	11b. <u> </u>	a) Ceiling fans	<u>Yes</u>
c) Knee walls/skylight walls	11c. <u> </u>	b) Cross ventilation	<u>No</u>
d) Radiant barrier installed	11d. <u>No</u>	c) Whole house fan	<u>No</u>
		d) Multizone cooling credit	<u> </u>
		e) Multizone heating credit	<u> </u>
		f) Programmable thermostat	<u>Yes</u>

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

I certify that this home has complied with the Florida Building Code, Energy Conservation, 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: 9/10/2020Address of New Home: SW Mapleton St.City/FL Zip: Ft. White, FL 32038

Florida Building Code, Energy Conservation, 6th Edition (2017)

Mandatory Requirements for Residential Performance, Prescriptive and ERI Methods

ADDRESS: SW Mapleton St.
Ft. White, FL, 32038

Permit Number:

MANDATORY REQUIREMENTS See individual code sections for full details.

SECTION R401 GENERAL

- ☐ **R401.3 Energy Performance Level (EPL) display card (Mandatory).** The building official shall require that an energy performance level (EPL) display card be completed and certified by the builder to be accurate and correct before final approval of the building for occupancy. Florida law (Section 553.9085, Florida Statutes) requires the EPL display card to be included as an addendum to each sales contract for both presold and nonpresold residential buildings. The EPL display card contains information indicating the energy performance level and efficiencies of components installed in a dwelling unit. The building official shall verify that the EPL display card completed and signed by the builder accurately reflects the plans and specifications submitted to demonstrate code compliance for the building. A copy of the EPL display card can be found in Appendix RD.

- ☐ **R402.4 Air leakage (Mandatory).** The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.5.

Exception: Dwelling units of R-2 Occupancies and multiple attached single family dwellings shall be permitted to comply with Section C402.5.

- ☐ **R402.4.1 Building thermal envelope.** The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

- ☐ **R402.4.1.1 Installation.** The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. Where required by the code official, an approved third party shall inspect all components and verify compliance.

- ☐ **R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding seven air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. 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.

Exception: Testing is not required for additions, alterations, renovations, or repairs, of the building thermal envelope of existing buildings in which the new construction is less than 85 percent 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, backdraft 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.

- ☐ **R402.4.2 Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers or doors, and outdoor combustion air. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907.

- ☐ **R402.4.3 Fenestration air leakage.** Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m²), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m²), when tested according to NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.

Exception: Site-built windows, skylights and doors.

MANDATORY REQUIREMENTS - (Continued)

- ☐ **R403.5.5 Heat traps (Mandatory).** Storage water heaters not equipped with integral heat traps and having vertical pipe risers shall have heat traps installed on both the inlets and outlets. External heat traps shall consist of either a commercially available heat trap or a downward and upward bend of at least 3 ½ inches (89 mm) in the hot water distribution line and cold water line located as close as possible to the storage tank.
- R403.5.6 Water heater efficiencies (Mandatory).**
- ☐ **R403.5.6.1.1 Automatic controls.** Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use. The minimum temperature setting range shall be from 100°F to 140°F (38°C to 60°C).
- ☐ **R403.5.6.1.2 Shut down.** A separate switch or a clearly marked circuit breaker shall be provided to permit the power supplied to electric service systems to be turned off. A separate valve shall be provided to permit the energy supplied to the main burner(s) of combustion types of service water-heating systems to be turned off.
- ☐ **R403.5.6.2 Water-heating equipment.** Water-heating equipment installed in residential units shall meet the minimum efficiencies of Table C404.2 in Chapter 4 of the Florida Building Code, Energy Conservation, Commercial Provisions, for the type of equipment installed. Equipment used to provide heating functions as part of a combination system shall satisfy all stated requirements for the appropriate water-heating category. Solar water heaters shall meet the criteria of Section R403.5.6.2.1.
- ☐ **R403.5.6.2.1 Solar water-heating systems.** Solar systems for domestic hot water production are rated by the annual solar energy factor of the system. The solar energy factor of a system shall be determined from the Florida Solar Energy Center Directory of Certified Solar Systems. Solar collectors shall be tested in accordance with ISO Standard 9806, Test Methods for Solar Collectors, and SRCC Standard TM-1, Solar Domestic Hot Water System and Component Test Protocol. Collectors in installed solar water-heating systems should meet the following criteria:
1. Be installed with a tilt angle between 10 degrees and 40 degrees of the horizontal; and
 2. Be installed at an orientation within 45 degrees of true south.
- ☐ **R403.6 Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of the Florida Building Code, Residential, or Florida Building Code, Mechanical, as applicable, or with other approved means of ventilation including: Natural, Infiltration or Mechanical means. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.
- ☐ **R403.6.1 Whole-house mechanical ventilation system fan efficacy.** When installed to function as a whole-house mechanical ventilation system, fans shall meet the efficacy requirements of Table R403.6.1.
- Exception:** Where whole-house mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by an electronically commutated motor.
- ☐ **R403.6.2 Ventilation air.** Residential buildings designed to be operated at a positive indoor pressure or for mechanical ventilation shall meet the following criteria:
1. The design air change per hour minimums for residential buildings in ASHRAE 62.2, Ventilation for Acceptable Indoor Air Quality, shall be the maximum rates allowed for residential applications.
 2. No ventilation or air-conditioning system make-up air shall be provided to conditioned space from attics, crawlspaces, attached enclosed garages or outdoor spaces adjacent to swimming pools or spas.
 3. If ventilation air is drawn from enclosed space(s), then the walls of the space(s) from which air is drawn shall be insulated to a minimum of R-11 and the ceiling shall be insulated to a minimum of R-19, space permitting, or R-10 otherwise.
- ☐ **R403.7 Heating and cooling equipment (Mandatory).**
- R403.7.1 Equipment sizing.** Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on the equipment loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies, based on building loads for the directional orientation of the building. The manufacturer and model number of the outdoor and indoor units (if split system) shall be submitted along with the sensible and total cooling capacities at the design conditions described in Section R302.1. This Code does not allow designer safety factors, provisions for future expansion or other factors that affect equipment sizing. System sizing calculations shall not include loads created by local intermittent mechanical ventilation such as standard kitchen and bathroom exhaust systems. New or replacement heating and cooling equipment shall have an efficiency rating equal to or greater than the minimum required by federal law for the geographic location where the equipment is installed.

**TABLE R403.6.1
WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICACY**

FAN LOCATION	AIRFLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY ^a (CFM/WATT)	AIRFLOW RATE MAXIMUM (CFM)
Range hoods	Any	2.8 cfm/watt	Any
In-line fan	Any	2.8 cfm/watt	Any
Bathroom, utility room	10	1.4 cfm/watt	<90
Bathroom, utility room	90	2.8 cfm/watt	Any

For SI: 1 cfm = 28.3 L/min.

a. When tested in accordance with HVI Standard 916

- ☐ **R403.10.5 Heat pump pool heaters.** Heat pump pool heaters shall have a minimum COP of 4.0 when tested in accordance with AHRI 1160, Table 2, Standard Rating Conditions-Low Air Temperature. A test report from an independent laboratory is required to verify procedure compliance. Geothermal swimming pool heat pumps are not required to meet this standard.
- ☐ **R403.11 Portable spas (Mandatory).** The energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP-14.

SECTION R404

ELECTRICAL POWER AND LIGHTING SYSTEMS

- ☐ **R404.1 Lighting equipment (Mandatory).** Not less than 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or not less than 75 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.
- Exception:** Low-voltage lighting.
- R404.1.1 Lighting equipment (Mandatory).** Fuel gas lighting systems shall not have continuously burning pilot lights.

2017 - AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

**TABLE 402.4.1.1
AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA**

<div> <div>Project Name: RendeK residence</div> <div>Street: SW Mapleton St.</div> <div>City, State, Zip: Ft. White , FL , 32038</div> <div>Owner:</div> <div>Design Location: FL, Gainesville</div> </div> <div> <div>Builder Name: RRCH</div> <div>Permit Office:</div> <div>Permit Number:</div> <div>Jurisdiction:</div> </div>			CHECK
COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA	
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.	
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.	
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.	
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.		
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.	
Floors (including above-garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.	
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace	
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.		
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.	
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.		
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.	
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.	
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.	
Electrical/phone box or exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.		
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall.		
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.		

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

Envelope Leakage Test Report (Blower Door Test)

Residential Prescriptive, Performance or ERI Method Compliance

2017 Florida Building Code, Energy Conservation, 6th Edition

Jurisdiction:

Permit #:

Job Information

Builder: RRCH

Community:

Lot: NA

Address: SW Mapleton St.

City: Ft. White

State: FL

Zip: 32038

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 R405-2017 (Performance) or R406-2017 (ERI), section labeled as infiltration, sub-section ACH50. ACH(50) specified on Form R405-2017-Energy Calc (Performance) or R406-2017 (ERI): 7.000

$$\frac{\text{CFM}(50)}{\text{Building Volume}} \times 60 + \frac{20502}{\text{ACH}(50)} = \text{ACH}(50)$$

☐ **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 2017 6th 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: _____