

20

FORM 405-10

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Mary Franchione Street: 340 SW Boston Terrace City, State, Zip: Fort White, FL, - Owner: Mary Franchione Design Location: FL, Gainesville	Builder Name: TBA Permit Office: Columbia Permit Number: Jurisdiction: 221000
---	--

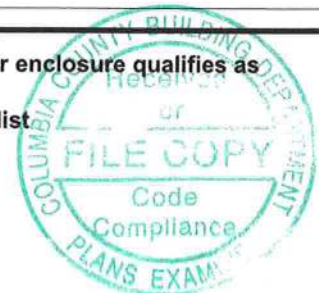
1. New construction or existing New (From Plans) 2. Single family or multiple family Single-family 3. Number of units, if multiple family 1 4. Number of Bedrooms 1 5. Is this a worst case? No 6. Conditioned floor area above grade (ft²) 880 Conditioned floor area below grade (ft²) 0 7. Windows (78.0 sqft.) Description Area a. U-Factor: Dbl, U=0.55 78.00 ft² SHGC: SHGC=0.50 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: 1.404 ft. Area Weighted Average SHGC: 0.500 8. Floor Types (880.0 sqft.) Insulation Area a. Raised Floor R=19.0 880.00 ft² b. N/A R= ft² c. N/A R= ft²	9. Wall Types (1024.0 sqft.) Insulation Area a. Frame - Wood, Exterior R=13.0 1024.00 ft² b. N/A R= ft² c. N/A R= ft² d. N/A R= ft² 10. Ceiling Types (880.0 sqft.) Insulation Area a. Under Attic (Vented) R=30.0 880.00 ft² b. N/A R= ft² c. N/A R= ft² 11. Ducts R ft² a. Sup: Attic, Ret: Attic, AH: Main 6 176 12. Cooling systems kBtu/hr Efficiency a. Central Unit 18.0 SEER:14.00 13. Heating systems kBtu/hr Efficiency a. Electric Heat Pump 18.0 HSPF:7.70 14. Hot water systems a. Electric Cap: 50 gallons b. Conservation features EF: 0.920 None 15. Credits CF, Pstat
---	--

Glass/Floor Area: 0.089	Total Proposed Modified Loads: 23.46	PASS
	Total Standard Reference Loads: 29.83	

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code. PREPARED BY: <u>Justin H. Fuen</u> DATE: <u>8/22/12</u> 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 403.2.2.1.1.
- Compliance requires completion of a Florida Air Barrier and Insulation Inspection Checklist



PROJECT

Title: Mary Farchione	Bedrooms: 1	Address Type: Street Address
Building Type: User	Conditioned Area: 880	Lot #
Owner: Mary Franchione	Total Stories: 1	Block/SubDivision:
# of Units: 1	Worst Case: No	PlatBook:
Builder Name: TBA	Rotate Angle: 270	Street: 340 SW Boston Terrace
Permit Office: Columbia	Cross Ventilation:	County: Columbia
Jurisdiction:	Whole House Fan:	City, State, Zip: Fort White , FL , -
Family Type: Single-family		
New/Existing: New (From Plans)		
Comment:		

CLIMATE

	Design Location	TMY Site	IECC Zone	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	2	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	880	7040

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	880	7040	Yes	1	1	1	Yes	Yes	Yes

FLOORS

	#	Floor Type	Space	R-Value	Area	Tile	Wood	Carpet
✓	1	Raised Floor	Main	----	880 ft²	19	0	1

ROOF

	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
✓	1	Gable or shed	Composition shingles	984 ft²	220 ft²	Medium	0.96	No	0.9	No	0	26.6

ATTIC

	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
✓	1	Full attic	Vented	300	880 ft²	N	N

CEILING

	#	Ceiling Type	Space	R-Value	Area	Framing Frac	Truss Type
✓	1	Under Attic (Vented)	Main	30	880 ft²	0.11	Wood

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	N=>W	Exterior	Frame - Wood	Main	13	44		8		352 ft²		0.23	0.75	0
2	S=>E	Exterior	Frame - Wood	Main	13	44		8		352 ft²		0.23	0.75	0
3	W=>S	Exterior	Frame - Wood	Main	13	20		8		160 ft²		0.23	0.75	0
4	E=>N	Exterior	Frame - Wood	Main	13	20		8		160 ft²		0.23	0.75	0

DOORS

✓ #	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
1	N=>W	Insulated	Main	None	0.460000	6		6	8	40 ft²
2	S=>E	Insulated	Main	None	0.460000	6		6	8	20 ft²
3	W=>S	Insulated	Main	None	0.460000	6		6	8	20 ft²

WINDOWS

Orientation shown is the entered orientation (=>) changed to As Built (rotated 270 degrees).

✓ #	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Separation	Int Shade	Screening
1	N=>W	1	Metal	Double (Tinted)	Yes	0.55	0.5	9 ft²	1 ft 6 in	1 ft 0 in	Drapes/blinds	None
2	N=>W	1	Metal	Double (Tinted)	Yes	0.55	0.5	15 ft²	1 ft 6 in	1 ft 0 in	Drapes/blinds	None
3	E=>N	4	Metal	Double (Tinted)	Yes	0.55	0.5	6 ft²	1 ft 0 in	4 ft 0 in	Drapes/blinds	None
4	S=>E	2	Metal	Double (Tinted)	Yes	0.55	0.5	9 ft²	1 ft 6 in	1 ft 0 in	Drapes/blinds	None
5	S=>E	2	Metal	Double (Tinted)	Yes	0.55	0.5	30 ft²	1 ft 6 in	1 ft 0 in	Drapes/blinds	None
6	W=>S	3	Metal	Double (Tinted)	Yes	0.55	0.5	9 ft²	1 ft 0 in	5 ft 0 in	Drapes/blinds	None

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Best Guess	0.000500	1154.12	63.3600	119.157	0.38500	9.83630

HEATING SYSTEM

✓ #	System Type	Subtype	Efficiency	Capacity	Block	Ducts
1	Electric Heat Pump	None	HSPF: 7.7	18 kBtu/hr	1	sys#1

COOLING SYSTEM

✓ #	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
1	Central Unit	Split	SEER: 14	18 kBtu/hr	540 cfm	0.75	1	sys#1

HOT WATER SYSTEM

✓ #	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
1	Electric	None	Main	0.92	50 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	Percent Leakage	QN	RLF	HVAC # Heat Cool	
_____		1	Attic	6	176 ft²	Attic	44 ft²	Default Leakage	Main	(Default)	c (Default)	%	1 1	
TEMPERATURES														
Programable Thermostat: Y				Ceiling Fans:										
Cooling	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input 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 type="checkbox"/> Dec		
Heating	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input checked="" 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 checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec		
Venting	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input checked="" 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		
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	
MECHANICAL VENTILATION														
Type	Supply CFM	Exhaust CFM	Fan Watts	HRV	Heating System		Run Time	Cooling System						
None	0	0		0	1 - Electric Heat Pump		0%	1 - Central Unit						

Florida Code Compliance Checklist

Florida Department of Business and Professional Regulations
Residential Whole Building Performance Method

ADDRESS: 340 SW Boston Terrace
Fort White, FL, -

PERMIT #:

MANDATORY REQUIREMENTS SUMMARY - See individual code sections for full details.

COMPONENT	SECTION	SUMMARY OF REQUIREMENT(S)	CHECK
Air leakage	402.4	To be caulked, gasketed, weatherstripped or otherwise sealed. Recessed lighting IC-rated as meeting ASTM E 283. Windows and doors = 0.30 cfm/sq.ft. Testing or visual inspection required. Fireplaces: gasketed doors & outdoor combustion air. Must complete envelope leakage report or visually verify Table 402.4.2.	
Thermostat & controls	403.1	At least one thermostat shall be provided for each separate heating and cooling system. Where forced-air furnace is primary system, programmable thermostat is required. Heat pumps with supplemental electric heat must prevent supplemental heat when compressor can meet the load.	
Ducts	403.2.2	All ducts, air handlers, filter boxes and building cavities which form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section 503.2.7.2 of this code.	
	403.3.3	Building framing cavities shall not be used as supply ducts.	
Water heaters	403.4	Heat trap required for vertical pipe risers. Comply with efficiencies in Table 403.4.3.2. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). Circulating system pipes insulated to = R-2 + accessible manual OFF switch.	
Mechanical ventilation	403.5	Homes designed to operate at positive pressure or with mechanical ventilation systems shall not exceed the minimum ASHRAE 62 level. No make-up air from attics, crawlspaces, garages or outdoors adjacent to pools or spas.	
Swimming Pools & Spas	403.9	Pool pumps and pool pump motors with a total horsepower (HP) of = 1 HP shall have the capability of operating at two or more speeds. Spas and heated pools must have vapor-retardant covers or a liquid cover or other means proven to reduce heat loss except if 70% of heat from site-recovered energy. Off/timer switch required. Gas heaters minimum thermal efficiency=78% (82% after 4/16/13). Heat pump pool heaters minimum COP= 4.0.	
Cooling/heating equipment	403.6	Sizing calculation performed & attached. Minimum efficiencies per Tables 503.2.3. Equipment efficiency verification required. Special occasion cooling or heating capacity requires separate system or variable capacity system. Electric heat >10kW must be divided into two or more stages.	
Ceilings/knee walls	405.2.1	R-19 space permitting.	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 79

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

340 SW Boston Terrace, Fort White, FL, -

1. New construction or existing	New (From Plans)	9. Wall Types	Insulation	Area
2. Single family or multiple family	Single-family	a. Frame - Wood, Exterior	R=13.0	1024.00 ft ²
3. Number of units, if multiple family	1	b. N/A	R=	ft ²
4. Number of Bedrooms	1	c. N/A	R=	ft ²
5. Is this a worst case?	No	d. N/A	R=	ft ²
6. Conditioned floor area (ft ²)	880	10. Ceiling Types	Insulation	Area
7. Windows**	Description	a. Under Attic (Vented)	R=30.0	880.00 ft ²
a. U-Factor:	Dbl, U=0.55	b. N/A	R=	ft ²
SHGC:	SHGC=0.50	c. N/A	R=	ft ²
b. U-Factor:	N/A	11. Ducts		R ft ²
SHGC:		a. Sup: Attic, Ret: Attic, AH: Main		6 176
c. U-Factor:	N/A	12. Cooling systems	kBtu/hr	Efficiency
SHGC:		a. Central Unit	18.0	SEER:14.00
d. U-Factor:	N/A	13. Heating systems	kBtu/hr	Efficiency
SHGC:		a. Electric Heat Pump	18.0	HSPF:7.70
Area Weighted Average Overhang Depth:	1.404 ft.	14. Hot water systems		Cap: 50 gallons
Area Weighted Average SHGC:	0.500	a. Electric		EF: 0.92
8. Floor Types	Insulation	b. Conservation features		
a. Raised Floor	R=19.0	None		
b. N/A	R=	15. Credits		CF, Pstat
c. N/A	R=			

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 EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section 303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

Residential System Sizing Calculation

Summary

Mary Franchione
340 SW Boston Terrace
Fort White, FL -

Project Title:
Mary Franchione

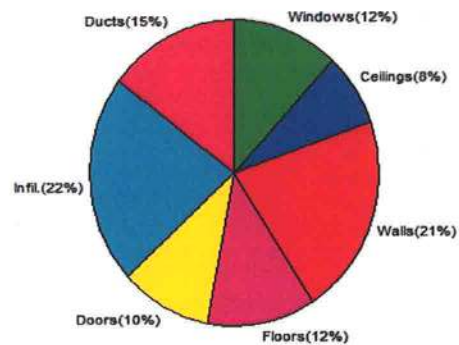
8/19/2012

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)					
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(54gr.)					
Winter design temperature(MJ8 99%)	33	F	Summer design temperature(MJ8 99%)	92	F
Winter setpoint	70	F	Summer setpoint	75	F
Winter temperature difference	37	F	Summer temperature difference	17	F
Total heating load calculation	13344	Btuh	Total cooling load calculation	15322	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	134.9	18000	Sensible (SHR = 0.75)	107.0	13500
Heat Pump + Auxiliary(0.0kW)	134.9	18000	Latent	166.6	4500
			Total (Electric Heat Pump)	117.5	18000

WINTER CALCULATIONS

Winter Heating Load (for 880 sqft)

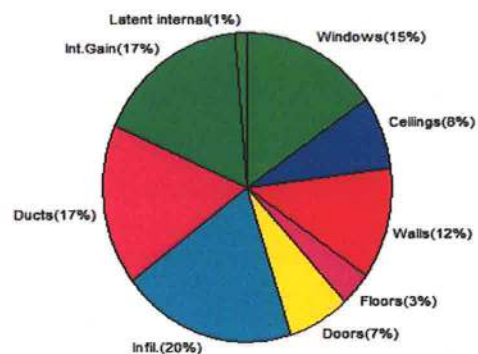
Load component		Load
Window total	78 sqft	1587 Btuh
Wall total	866 sqft	2844 Btuh
Door total	80 sqft	1362 Btuh
Ceiling total	880 sqft	1037 Btuh
Floor total	880 sqft	1633 Btuh
Infiltration	72 cfm	2928 Btuh
Duct loss		1953 Btuh
Subtotal		13344 Btuh
Ventilation	0 cfm	0 Btuh
TOTAL HEAT LOSS		13344 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 880 sqft)

Load component		Load
Window total	78 sqft	2351 Btuh
Wall total	866 sqft	1806 Btuh
Door total	80 sqft	1030 Btuh
Ceiling total	880 sqft	1177 Btuh
Floor total		530 Btuh
Infiltration	54 cfm	1009 Btuh
Internal gain		2630 Btuh
Duct gain		2087 Btuh
Sens. Ventilation	0 cfm	0 Btuh
Blower Load		0 Btuh
Total sensible gain		12620 Btuh
Latent gain(ducts)		520 Btuh
Latent gain(infiltration)		1981 Btuh
Latent gain(ventilation)		0 Btuh
Latent gain(internal/occupants/other)		200 Btuh
Total latent gain		2701 Btuh
TOTAL HEAT GAIN		15322 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY:

DATE:

William H. Free
8/22/12

EnergyGauge® / USRFZB v3.0