

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Walker Residence Street: 11394 SE CR 245 City, State, Zip: Lulu, FL, 32061 Owner: Lewis Walker Design Location: FL, Gainesville	Builder Name: N/A Permit Office: Columbia County Permit Number: Jurisdiction: County: Columbia (Florida Climate Zone 2)		
1. New construction or existing 2. Single family or multiple family 3. Number of units, if multiple family 4. Number of Bedrooms 5. Is this a worst case? 6. Conditioned floor area above grade (ft²) Conditioned floor area below grade (ft²) 7. Windows (798.5 sqft.) a. U-Factor: SHGC: b. U-Factor: SHGC: c. U-Factor: SHGC: d. U-Factor: SHGC: Area Weighted Average Overhang Depth: Area Weighted Average SHGC: 8. Floor Types (409.0 sqft.) a. Floor over Garage b. Crawlspace c. N/A	New (From Plans) Single-family 1 6 No 4040 0 Description Dbl, U=0.36 SHGC=0.25 N/A N/A N/A 5.544 ft. 0.250 Insulation R=19.0 R=19.0 R=	9. Wall Types (4463.3 sqft.) a. Frame - Wood, Exterior b. Frame - Wood, Exterior c. Frame - Wood, Adjacent d. N/A 10. Ceiling Types (2053.0 sqft.) a. Under Attic (Vented) b. N/A c. N/A 11. Ducts a. Sup: Attic, Ret: Attic, AH: 2nd Floor 12. Cooling systems a. Central Unit 13. Heating systems a. Electric Heat Pump 14. Hot water systems a. Natural Gas Tankless b. Conservation features None 15. Credits	Insulation R=19.0 R=13.0 R=13.0 R= Insulation R=38.0 R= R= R Efficiency SEER:14.00 Efficiency SPF:8.20 1 gallons EF: 0.590 CV, Pstat
Glass/Floor Area: 0.198 Total Proposed Modified Loads: 109.79 Total Baseline Loads: 118.40		PASS	
I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code. PREPARED BY: _____ DATE: _____ 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 R403.2.2.1.
- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and an envelope leakage test report in accordance with R402.4.1.2.

PROJECT

Title:	Walker Residence	Bedrooms:	6	Address Type:	Street Address
Building Type:	User	Conditioned Area:	4040	Lot #	
Owner:	Lewis Walker	Total Stories:	2	Block/SubDivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:	N/A	Rotate Angle:	0	Street:	11394 SE CR 245
Permit Office:	Columbia County	Cross Ventilation:	Yes	County:	Columbia
Jurisdiction:		Whole House Fan:	No	City, State, Zip:	Lulu , FL , 32061
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	4040	34689

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	1st Floor	2369	21321	Yes	2	2	1	Yes	Yes	Yes
2	2nd Floor	1263	10104	No	3	3	1	Yes	Yes	Yes
3	Bonus Room	408	3264	No	2	1	1	Yes	Yes	Yes

FLOORS

✓	#	Floor Type	Space	Perimeter	Perimeter R-Value	Area	Joist R-Value	Tile	Wood	Carpet
_____	1	Crawlspace	1st Floor	258 ft	19	1 ft²	19	0	0	1
_____	2	Floor over Garage	Bonus Room	----	----	408 ft²	19	0	0	1

ROOF

✓	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Hip	Composition shingles	2378 ft²	0 ft²	Light	0.96	No	0.9	No	0	30.3

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	2053 ft²	Y	N

CEILING

✓	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
___	1	Under Attic (Vented)	1st Floor	38	Double Batt	362 ft²	0.11	Wood
___	2	Under Attic (Vented)	Bonus Room	38	Double Batt	428 ft²	0.11	Wood
___	3	Under Attic (Vented)	2nd Floor	38	Double Batt	1263 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	W	Exterior	Frame - Wood	1st Floor	19	14	0	9		126.0 ft²		0.23	0.75	0
___	2	W	Exterior	Frame - Wood	1st Floor	19	15	6	9		139.5 ft²		0.23	0.75	0
___	3	S	Exterior	Frame - Wood	1st Floor	19	8		9		72.0 ft²		0.23	0.75	0
___	4	W	Exterior	Frame - Wood	1st Floor	19	16		9		144.0 ft²		0.23	0.75	0
___	5	S	Exterior	Frame - Wood	1st Floor	19	34	4	9		309.0 ft²		0.23	0.75	0
___	6	W	Exterior	Frame - Wood	1st Floor	19	8		9		72.0 ft²		0.23	0.75	0
___	7	S	Exterior	Frame - Wood	1st Floor	19	16		9		144.0 ft²		0.23	0.75	0
___	8	E	Exterior	Frame - Wood	1st Floor	19	61	9	9		555.8 ft²		0.23	0.75	0
___	9	N	Exterior	Frame - Wood	1st Floor	19	14		9		126.0 ft²		0.23	0.75	0
___	10	W	Exterior	Frame - Wood	1st Floor	19	16		9		144.0 ft²		0.23	0.75	0
___	11	N	Exterior	Frame - Wood	1st Floor	19	31	4	9		282.0 ft²		0.23	0.75	0
___	12	E	Exterior	Frame - Wood	1st Floor	19	10		9		90.0 ft²		0.23	0.75	0
___	13	N	Garage	Frame - Wood	1st Floor	13	11		9		99.0 ft²		0.23	0.75	0
___	14	E	Exterior	Frame - Wood	Bonus Room	19	17	2	8		137.3 ft²		0.23	0.75	0
___	15	W	Exterior	Frame - Wood	Bonus Room	19	17	2	8		137.3 ft²		0.23	0.75	0
___	16	N	Exterior	Frame - Wood	Bonus Room	13	24		8		192.0 ft²		0.23	0.75	0
___	17	S	Exterior	Frame - Wood	Bonus Room	13	24		8		192.0 ft²		0.23	0.75	0
___	18	W	Exterior	Frame - Wood	2nd Floor	13	35	6	8		284.0 ft²		0.23	0.75	0
___	19	S	Exterior	Frame - Wood	2nd Floor	13	34	4	8		274.7 ft²		0.23	0.75	0
___	20	W	Exterior	Frame - Wood	2nd Floor	13	10		8		80.0 ft²		0.23	0.75	0
___	21	S	Exterior	Frame - Wood	2nd Floor	13	14		8		112.0 ft²		0.23	0.75	0
___	22	E	Exterior	Frame - Wood	2nd Floor	13	45	6	8		364.0 ft²		0.23	0.75	0
___	23	N	Exterior	Frame - Wood	2nd Floor	13	48	4	8		386.7 ft²		0.23	0.75	0

DOORS

✓	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
___	1	N	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	Area	Overhang Depth	Separation	Int Shade	Screening
___	1	W	1	TIM	Low-E Double	Yes	0.36	0.25	20.0 ft²	6 ft 6 in	1 ft 0 in	None	None
___	2	W	2	Vinyl	Low-E Double	Yes	0.36	0.25	24.0 ft²	1 ft 0 in	4 ft 0 in	None	None
___	3	W	4	Vinyl	Low-E Double	Yes	0.36	0.25	54.0 ft²	9 ft 6 in	1 ft 0 in	None	None
___	4	S	5	Vinyl	Low-E Double	Yes	0.36	0.25	72.0 ft²	9 ft 6 in	1 ft 0 in	None	None
___	5	S	5	TIM	Low-E Double	Yes	0.36	0.25	40.0 ft²	9 ft 6 in	0 ft 6 in	None	None

WINDOWS

Orientation shown is the entered, Proposed orientation.

✓	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
_____	6	S	7	Vinyl	Low-E Double	Yes	0.36	0.25	24.0 ft²	1 ft 0 in	1 ft 0 in	None	None
_____	7	S	7	Vinyl	Low-E Double	Yes	0.36	0.25	18.0 ft²	1 ft 0 in	1 ft 0 in	None	None
_____	8	E	8	Vinyl	Low-E Double	Yes	0.36	0.25	54.0 ft²	1 ft 6 in	10 ft 6 in	None	None
_____	9	E	8	Vinyl	Low-E Double	Yes	0.36	0.25	4.0 ft²	1 ft 6 in	10 ft 6 in	None	None
_____	10	E	8	Vinyl	Low-E Double	Yes	0.36	0.25	15.0 ft²	1 ft 6 in	10 ft 6 in	None	None
_____	11	E	8	Vinyl	Low-E Double	Yes	0.36	0.25	6.0 ft²	1 ft 6 in	10 ft 6 in	None	None
_____	12	N	9	Vinyl	Low-E Double	Yes	0.36	0.25	18.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	13	W	10	TIM	Low-E Double	Yes	0.36	0.25	40.0 ft²	6 ft 6 in	1 ft 0 in	None	None
_____	14	N	11	TIM	Low-E Double	Yes	0.36	0.25	40.0 ft²	13 ft 6 in	1 ft 0 in	None	None
_____	15	N	11	Vinyl	Low-E Double	Yes	0.36	0.25	90.0 ft²	13 ft 6 in	1 ft 0 in	None	None
_____	16	E	12	Vinyl	Low-E Double	Yes	0.36	0.25	7.5 ft²	13 ft 6 in	1 ft 0 in	None	None
_____	17	E	14	Vinyl	Low-E Double	Yes	0.36	0.25	16.0 ft²	1 ft 0 in	2 ft 6 in	None	None
_____	18	W	15	Vinyl	Low-E Double	Yes	0.36	0.25	16.0 ft²	1 ft 0 in	2 ft 6 in	None	None
_____	19	N	23	Vinyl	Low-E Double	Yes	0.36	0.25	18.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	20	W	18	Vinyl	Low-E Double	Yes	0.36	0.25	32.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	21	S	19	Vinyl	Low-E Double	Yes	0.36	0.25	48.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	22	S	21	Vinyl	Low-E Double	Yes	0.36	0.25	32.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	23	E	22	Vinyl	Low-E Double	Yes	0.36	0.25	4.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	24	E	22	Vinyl	Low-E Double	Yes	0.36	0.25	10.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	25	N	23	Vinyl	Low-E Double	Yes	0.36	0.25	32.0 ft²	1 ft 6 in	0 ft 6 in	None	None
_____	26	N	23	Vinyl	Low-E Double	Yes	0.36	0.25	64.0 ft²	1 ft 6 in	0 ft 6 in	None	None

GARAGE

✓	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
_____	1	768 ft²	384 ft²	71 ft	10 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000273	2890.8	158.7	298.46	.2586	5

HEATING SYSTEM

✓	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump	None	HSPF:8.2	48.26 kBtu/hr	1	sys#1

COOLING SYSTEM

☒	#	System Type	SubType	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
☐	1	Central Unit	None	SEER: 14	48.37 kBtu/hr	1440 cfm	0.7	1	sys#1

HOT WATER SYSTEM

☒	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
☐	1	Natural Gas	Tankless	1st Floor	0.59	1 gal	40 gal	120 deg	None

SOLAR HOT WATER SYSTEM

☒	FSEC Cert #	CompanyName	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
☐	None	None			ft ²		

DUCTS

☒	#	--- Supply --- Location	R-Value	Area	--- Return --- Location	Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	Cool
☐	1	Attic	6	908 ft ²	Attic	181.6 ft ²	Default Leakage	2nd Floor	(Default) c	(Default) c			1	1

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

Cooling	☒ Jan	☒ Feb	☒ Mar	☐ Apr	☐ May	☒ Jun	☒ Jul	☒ Aug	☒ Sep	☐ Oct	☒ Nov	☒ Dec
Heating	☒ Jan	☒ Feb	☒ Mar	☒ Apr	☐ May	☐ Jun	☐ Jul	☐ Aug	☐ Sep	☒ Oct	☒ Nov	☒ Dec
Venting	☐ Jan	☐ Feb	☒ Mar	☒ Apr	☐ May	☐ Jun	☐ Jul	☐ Aug	☐ Sep	☒ Oct	☒ Nov	☒ Dec

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

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 93

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

11394 SE CR 245, Lulu, FL, 32061

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=19.0	2478.90 ft ²
3. Number of units, if multiple family	1	b. Frame - Wood, Exterior	R=13.0	1885.30 ft ²
4. Number of Bedrooms	6	c. Frame - Wood, Adjacent	R=13.0	99.00 ft ²
5. Is this a worst case?	No	d. N/A	R=	ft ²
6. Conditioned floor area (ft ²)	4040	10. Ceiling Types	Insulation	Area
7. Windows**	Description	a. Under Attic (Vented)	R=38.0	2053.00 ft ²
a. U-Factor:	Dbl, U=0.36	b. N/A	R=	ft ²
SHGC:	SHGC=0.25	c. N/A	R=	ft ²
b. U-Factor:	N/A	11. Ducts		R ft ²
SHGC:		a. Sup: Attic, Ret: Attic, AH: 2nd Floor		6 908
c. U-Factor:	N/A	12. Cooling systems	kBtu/hr	Efficiency
SHGC:		a. Central Unit	48.4	SEER:14.00
d. U-Factor:	N/A	13. Heating systems	kBtu/hr	Efficiency
SHGC:		a. Electric Heat Pump	48.3	HSPF:8.20
Area Weighted Average Overhang Depth:	5.544 ft.	14. Hot water systems		Cap: 1 gallons
Area Weighted Average SHGC:	0.250	a. Natural Gas		EF: 0.59
8. Floor Types	Insulation	b. Conservation features		
a. Floor over Garage	R=19.0	None		
b. Crawlspace	R=19.0	15. Credits		CV, 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 R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.



COLUMBIA COUNTY BUILDING DEPARTMENT

Blower Door Test Results Form

Date: _____

Permit Number: _____

Job Address: _____

AIR INFILTRATION TEST RESULTS

CFM (50) = _____

Volume = _____

ACH (50) = CFM (50) X 60 / Volume = _____

☐

PASS

☐

FAIL

CERTIFICATION OF TEST RESULTS

R402.4.1.2 Testing. The Building or dwelling unit shall be tested and verified as having as air leakage rate of not exceeding 7 air changes per hour in Climate Zones 1 and 2, and 3 air changes per hour in Climate Zones 3 through 8. Testing shall be conducted with a blower door at a pressure of 0.2 inches 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.

I hereby certify that the above Air Infiltration Test results demonstrate compliance with Florida Energy Code requirements in accordance with the 5th Edition 2014 Florida Building Code-Energy Conservation R402.4.1.2.

Testing Company Name: Sikes Insulation

Tester Name: Will Sikes Lic./Cert.#: _____

Tester Signature: _____

Residential System Sizing Calculation

Lewis Walker
11394 SE CR 245
Lulu, FL 32061

Summary
Project Title:
Walker Residence

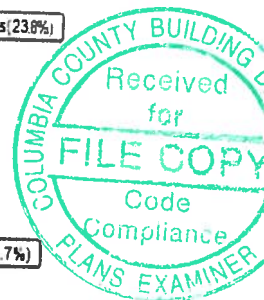
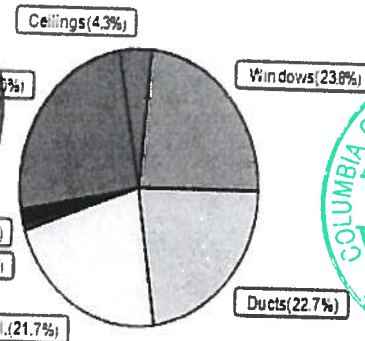
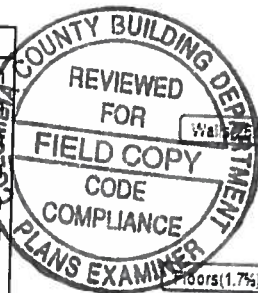
10/13/2016

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(51gr.)			
Winter design temperature(TMY3 99%)	30 F	Summer design temperature(TMY3 99%)	94 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	40 F	Summer temperature difference	19 F
Total heating load calculation	48258 Btuh	Total cooling load calculation	48713 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 48258	Sensible (SHR = 0.70)	87.6 33862
Heat Pump + Auxiliary(0.0kW)	100.0 48258	Latent	144.3 14512
		Total (Electric Heat Pump)	99.3 48374

WINTER CALCULATIONS

Winter Heating Load (for 4040 sqft)

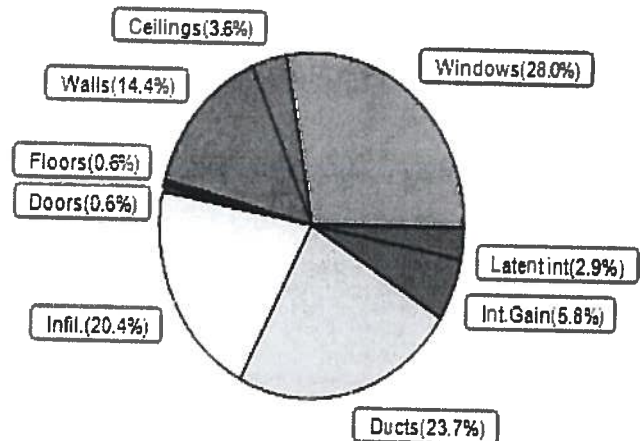
Load component		Load	
Window total	799 sqft	11498	Btuh
Wall total	3645 sqft	12058	Btuh
Door total	20 sqft	368	Btuh
Ceiling total	2053 sqft	2084	Btuh
Floor total	See detail report	819	Btuh
Infiltration	239 cfm	10475	Btuh
Duct loss		10955	Btuh
Subtotal		48258	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		48258	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 4040 sqft)

Load component		Load	
Window total	799 sqft	13646	Btuh
Wall total	3645 sqft	7033	Btuh
Door total	20 sqft	276	Btuh
Ceiling total	2053 sqft	1772	Btuh
Floor total		287	Btuh
Infiltration	179 cfm	3732	Btuh
Internal gain		2810	Btuh
Duct gain		9104	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		38658	Btuh
Latent gain(ducts)		2462	Btuh
Latent gain(infiltration)		6192	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1400	Btuh
Total latent gain		10055	Btuh
TOTAL HEAT GAIN		48713	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY:

DATE:

10/14/2016

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lewis Walker
11394 SE CR 245
Lulu, FL 32061

Project Title:
Walker Residence
Building Type: User

10/13/2016

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.25	TIM	0.36	W	20.0		14.4	288 Btuh
2	2, NFRC 0.25	Vinyl	0.36	W	24.0		14.4	346 Btuh
3	2, NFRC 0.25	Vinyl	0.36	W	54.0		14.4	778 Btuh
4	2, NFRC 0.25	Vinyl	0.36	S	72.0		14.4	1037 Btuh
5	2, NFRC 0.25	TIM	0.36	S	40.0		14.4	576 Btuh
6	2, NFRC 0.25	Vinyl	0.36	S	24.0		14.4	346 Btuh
7	2, NFRC 0.25	Vinyl	0.36	S	18.0		14.4	259 Btuh
8	2, NFRC 0.25	Vinyl	0.36	E	54.0		14.4	778 Btuh
9	2, NFRC 0.25	Vinyl	0.36	E	4.0		14.4	58 Btuh
10	2, NFRC 0.25	Vinyl	0.36	E	15.0		14.4	216 Btuh
11	2, NFRC 0.25	Vinyl	0.36	E	6.0		14.4	86 Btuh
12	2, NFRC 0.25	Vinyl	0.36	N	18.0		14.4	259 Btuh
13	2, NFRC 0.25	TIM	0.36	W	40.0		14.4	576 Btuh
14	2, NFRC 0.25	TIM	0.36	N	40.0		14.4	576 Btuh
15	2, NFRC 0.25	Vinyl	0.36	N	90.0		14.4	1296 Btuh
16	2, NFRC 0.25	Vinyl	0.36	E	7.5		14.4	108 Btuh
17	2, NFRC 0.25	Vinyl	0.36	E	16.0		14.4	230 Btuh
18	2, NFRC 0.25	Vinyl	0.36	W	16.0		14.4	230 Btuh
19	2, NFRC 0.25	Vinyl	0.36	N	18.0		14.4	259 Btuh
20	2, NFRC 0.25	Vinyl	0.36	W	32.0		14.4	461 Btuh
21	2, NFRC 0.25	Vinyl	0.36	S	48.0		14.4	691 Btuh
22	2, NFRC 0.25	Vinyl	0.36	S	32.0		14.4	461 Btuh
23	2, NFRC 0.25	Vinyl	0.36	E	4.0		14.4	58 Btuh
24	2, NFRC 0.25	Vinyl	0.36	E	10.0		14.4	144 Btuh
25	2, NFRC 0.25	Vinyl	0.36	N	32.0		14.4	461 Btuh
26	2, NFRC 0.25	Vinyl	0.36	N	64.0		14.4	922 Btuh
Window Total					798.5(sqft)			11498 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lewis Walker
11394 SE CR 245
Lulu, FL 32061

Project Title:
Walker Residence
Building Type: User

10/13/2016

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	106	3.09	328 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	116	3.09	357 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	72	3.09	223 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	90	3.09	278 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	197	3.09	609 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	72	3.09	223 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	102	3.09	315 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	477	3.09	1474 Btuh
9	Frame - Wood	- Ext	(0.077)	19.0/0.0	108	3.09	334 Btuh
10	Frame - Wood	- Ext	(0.077)	19.0/0.0	104	3.09	321 Btuh
11	Frame - Wood	- Ext	(0.077)	19.0/0.0	152	3.09	470 Btuh
12	Frame - Wood	- Ext	(0.077)	19.0/0.0	83	3.09	255 Btuh
13	Frame - Wood	- Adj	(0.089)	13.0/0.0	79	3.55	280 Btuh
14	Frame - Wood	- Ext	(0.077)	19.0/0.0	121	3.09	375 Btuh
15	Frame - Wood	- Ext	(0.077)	19.0/0.0	121	3.09	375 Btuh
16	Frame - Wood	- Ext	(0.089)	13.0/0.0	192	3.55	682 Btuh
17	Frame - Wood	- Ext	(0.089)	13.0/0.0	192	3.55	682 Btuh
18	Frame - Wood	- Ext	(0.089)	13.0/0.0	252	3.55	895 Btuh
19	Frame - Wood	- Ext	(0.089)	13.0/0.0	227	3.55	805 Btuh
20	Frame - Wood	- Ext	(0.089)	13.0/0.0	80	3.55	284 Btuh
21	Frame - Wood	- Ext	(0.089)	13.0/0.0	80	3.55	284 Btuh
22	Frame - Wood	- Ext	(0.089)	13.0/0.0	350	3.55	1243 Btuh
23	Frame - Wood	- Ext	(0.089)	13.0/0.0	273	3.55	968 Btuh
Wall Total					3645(sqft)		12058 Btuh
Doors	Type	Storm	Ueff.		Area X	HTM=	Load
1	Insulated - Garage, n		(0.460)		20	18.4	368 Btuh
Door Total					20(sqft)		368Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area X	HTM=	Load
1	Vented Attic/L/Shing		(0.025)	38.0/0.0	362	1.0	368 Btuh
2	Vented Attic/L/Shing		(0.025)	38.0/0.0	428	1.0	435 Btuh
3	Vented Attic/L/Shing		(0.025)	38.0/0.0	1263	1.0	1282 Btuh
Ceiling Total					2053(sqft)		2084Btuh
Floors	Type		Ueff.	R-Value	Size X	HTM=	Load
1	Stem/Crawlsp(Carpet)(v)		(0.049)	19.0/19.0	1.0 sqft	1.0	1 Btuh
2	Raised Wood - Adj		(0.050)	19.0	408.0 sqft	2.0	818 Btuh
Floor Total					409 sqft		819 Btuh
Envelope Subtotal:							26828 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.41	34689	1.00	239.2	10475 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)					(DLM of 0.294)	10955 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lewis Walker
11394 SE CR 245
Lulu, FL 32061

Project Title:
Walker Residence
Building Type: User

10/13/2016

All Zones	Sensible Subtotal All Zones	48258 Btuh
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WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	48258 Btuh 0 Btuh 48258 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	48258 Btuh
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Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
 or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
 U - (Window U-Factor)
 HTM - (ManualJ Heat Transfer Multiplier)



Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Lewis Walker
11394 SE CR 245
Lulu, FL 32061

Project Title:
Walker Residence

10/13/2016

Reference City: Gainesville, FL

Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.

Component Loads for Whole House

Window	Type*						Overhang		Window Area(sqft)			HTM		Load
	Panes	SHGC	U	InSh	IS	Omt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
1	2 NFRC	0.25, 0.36	No	No	W		6.5ft.	1.0ft.	20.0	13.2	6.8	12	31	370 Btuh
2	2 NFRC	0.25, 0.36	No	No	W		1.0ft.	4.0ft.	24.0	0.0	24.0	12	31	743 Btuh
3	2 NFRC	0.25, 0.36	No	No	W		9.5ft.	1.0ft.	54.0	54.0	0.0	12	31	653 Btuh
4	2 NFRC	0.25, 0.36	No	No	S		9.5ft.	1.0ft.	72.0	72.0	0.0	12	14	871 Btuh
5	2 NFRC	0.25, 0.36	No	No	S		9.5ft.	0.5ft.	40.0	40.0	0.0	12	14	484 Btuh
6	2 NFRC	0.25, 0.36	No	No	S		1.0ft.	1.0ft.	24.0	18.7	5.3	12	14	301 Btuh
7	2 NFRC	0.25, 0.36	No	No	S		1.0ft.	1.0ft.	18.0	14.0	4.0	12	14	225 Btuh
8	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	10.5f	54.0	0.0	54.0	12	31	1671 Btuh
9	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	10.5f	4.0	0.0	4.0	12	31	124 Btuh
10	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	10.5f	15.0	0.0	15.0	12	31	464 Btuh
11	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	10.5f	6.0	0.0	6.0	12	31	186 Btuh
12	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	0.5ft.	18.0	0.0	18.0	12	12	218 Btuh
13	2 NFRC	0.25, 0.36	No	No	W		6.5ft.	1.0ft.	40.0	26.4	13.6	12	31	741 Btuh
14	2 NFRC	0.25, 0.36	No	No	N		13.5f	1.0ft.	40.0	0.0	40.0	12	12	484 Btuh
15	2 NFRC	0.25, 0.36	No	No	N		13.5f	1.0ft.	90.0	0.0	90.0	12	12	1089 Btuh
16	2 NFRC	0.25, 0.36	No	No	E		13.5f	1.0ft.	7.5	7.5	0.0	12	31	91 Btuh
17	2 NFRC	0.25, 0.36	No	No	E		1.0ft.	2.5ft.	16.0	0.0	16.0	12	31	495 Btuh
18	2 NFRC	0.25, 0.36	No	No	W		1.0ft.	2.5ft.	16.0	0.0	16.0	12	31	495 Btuh
19	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	0.5ft.	18.0	0.0	18.0	12	12	218 Btuh
20	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	0.5ft.	32.0	4.5	27.5	12	31	906 Btuh
21	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	0.5ft.	48.0	48.0	0.0	12	14	581 Btuh
22	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	0.5ft.	32.0	32.0	0.0	12	14	387 Btuh
23	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	0.5ft.	4.0	3.0	1.0	12	31	68 Btuh
24	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	0.5ft.	10.0	1.5	8.5	12	31	281 Btuh
25	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	0.5ft.	32.0	0.0	32.0	12	12	387 Btuh
26	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	0.5ft.	64.0	0.0	64.0	12	12	774 Btuh
Excursion														339 Btuh
Window Total									799 (sqft)					13646 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Lewis Walker
11394 SE CR 245
Lulu, FL 32061

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Walker Residence

10/13/2016

Walls	Type	U-Value	R-Value	Area(sqft)	HTM	Load
			Cav/Sheath			
1	Frame - Wood - Ext	0.08	19.0/0.0	106.0	1.7	175 Btuh
2	Frame - Wood - Ext	0.08	19.0/0.0	115.5	1.7	191 Btuh
3	Frame - Wood - Ext	0.08	19.0/0.0	72.0	1.7	119 Btuh
4	Frame - Wood - Ext	0.08	19.0/0.0	90.0	1.7	149 Btuh
5	Frame - Wood - Ext	0.08	19.0/0.0	197.0	1.7	326 Btuh
6	Frame - Wood - Ext	0.08	19.0/0.0	72.0	1.7	119 Btuh
7	Frame - Wood - Ext	0.08	19.0/0.0	102.0	1.7	169 Btuh
8	Frame - Wood - Ext	0.08	19.0/0.0	476.8	1.7	788 Btuh
9	Frame - Wood - Ext	0.08	19.0/0.0	108.0	1.7	179 Btuh
10	Frame - Wood - Ext	0.08	19.0/0.0	104.0	1.7	172 Btuh
11	Frame - Wood - Ext	0.08	19.0/0.0	152.0	1.7	251 Btuh
12	Frame - Wood - Ext	0.08	19.0/0.0	82.5	1.7	136 Btuh
13	Frame - Wood - Adj	0.09	13.0/0.0	79.0	1.7	133 Btuh
14	Frame - Wood - Ext	0.08	19.0/0.0	121.3	1.7	201 Btuh
15	Frame - Wood - Ext	0.08	19.0/0.0	121.3	1.7	201 Btuh
16	Frame - Wood - Ext	0.09	13.0/0.0	192.0	2.3	435 Btuh
17	Frame - Wood - Ext	0.09	13.0/0.0	192.0	2.3	435 Btuh
18	Frame - Wood - Ext	0.09	13.0/0.0	252.0	2.3	570 Btuh
19	Frame - Wood - Ext	0.09	13.0/0.0	226.7	2.3	513 Btuh
20	Frame - Wood - Ext	0.09	13.0/0.0	80.0	2.3	181 Btuh
21	Frame - Wood - Ext	0.09	13.0/0.0	80.0	2.3	181 Btuh
22	Frame - Wood - Ext	0.09	13.0/0.0	350.0	2.3	792 Btuh
23	Frame - Wood - Ext	0.09	13.0/0.0	272.7	2.3	617 Btuh
	Wall Total			3645 (sqft)		7033 Btuh
Doors	Type			Area (sqft)	HTM	Load
1	Insulated - Garage			20.0	13.8	276 Btuh
	Door Total			20 (sqft)		276 Btuh
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Vented Attic/Light/Shingle/RB	0.025	38.0/0.0	362.0	0.86	312 Btuh
2	Vented Attic/Light/Shingle/RB	0.025	38.0/0.0	428.0	0.86	369 Btuh
3	Vented Attic/Light/Shingle/RB	0.025	38.0/0.0	1263.0	0.86	1090 Btuh
	Ceiling Total			2053 (sqft)		1772 Btuh
Floors	Type		R-Value	Size	HTM	Load
1	Stem/Crawlsp(Carpet)(v)		19.0	1 (sqft)	0.5	0 Btuh
2	Raised Wood - Adj		19.0	408 (sqft)	0.7	286 Btuh
	Floor Total			409.0 (sqft)		287 Btuh
	Envelope Subtotal:					23013 Btuh
Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.31	34689	1	179.4	3732 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		7	X 230	+	1200	2810 Btuh
	Sensible Envelope Load:					29555 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.308)					9104 Btuh
	Sensible Load All Zones					38658 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Lewis Walker
11394 SE CR 245
Lulu, FL 32061

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Walker Residence

10/13/2016

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	29555 Btuh
	Sensible Duct Load	9104 Btuh
	Total Sensible Zone Loads	38658 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	38658 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	6192 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	2462 Btuh
	Latent occupant gain (7.0 people @ 200 Btuh per person)	1400 Btuh
	Latent other gain	0 Btuh
	Latent total gain	10055 Btuh
	TOTAL GAIN	48713 Btuh

EQUIPMENT

1. Central Unit	#	48374 Btuh
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*Key: Window types (Panels - Number and type of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value)
(U - Window U-Factor)
(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))
- For Blinds: Assume medium color, half closed
For Draperies: Assume medium weave, half closed
For Roller shades: Assume translucent, half closed
(IS - Insect screen: none(N), Full(F) or Half(½))
(Ornt - compass orientation)



Version 8

Sliding Doors

SERIES 420/430/440 SLIDING GLASS DOORS

THIS FENESTRATION PRODUCT COMPLIES* WITH THE
NEW FLORIDA BUILDING CODE
 FOR RESIDENTIAL BUILDINGS WITH A MEAN ROOF HEIGHT OF 30 FT. OR LESS,
 EXPOSURE "B" (WHICH IS INLAND OF A LINE THAT IS 1500' FROM THE COAST),
 AND WALL ZONE "5" (INSTALLED NEAR THE CORNER OF A BUILDING).
 PER ASTM E1300, THE CORRECT GLASS THICKNESS, BASED ON THE NEGATIVE
 DESIGN PRESSURE (DP) LISTED BELOW, HAS BEEN INSTALLED IN THIS UNIT.
 THE GLASS THICKNESS IS BASED ON ITS WIDTH, HEIGHT, AND ASPECT RATIO.

STANDARD 6'-8" HIGH PANELS ARE NON REINFORCED

6'-8" HIGH	2'- 6" WIDE	DP +54 / -54
	3'- 0" WIDE	DP +47 / -47
	4'- 0" WIDE	DP +39 / -39
	5'- 0" WIDE	DP +35 / -35

STANDARD 8'-0" HIGH PANELS ARE STEEL REINFORCED

8'-0" HIGH	2'- 6" WIDE	DP +57 / -57
	3'- 0" WIDE	DP +49 / -49
	4'- 0" WIDE	DP +40 / -40
	5'- 0" WIDE	DP +35 / -35

SPECIAL ORDER 6'-8" HIGH PANELS - WITH STEEL REINFORCEMENT



BOX TO BE CHECKMARKED
 AT FACTORY IF REINFORCED

2'- 6" WIDE	DP +71 / -71
3'- 0" WIDE	DP +62 / -62
4'- 0" WIDE	DP +52 / -52
5'- 0" WIDE	DP +46 / -46

THIS PRODUCT MEETS THE REQUIREMENTS FOR STRUCTURAL LOADS, WATER AND
 AIR INFILTRATION PER ATTACHED AAMA PERFORMANCE LABEL. BE ADVISED THAT
 IF LOADS ARE PLACED UP TO OR EXCEEDING THE TESTED LEVELS, THIS PRODUCT
 MAY BE ALTERED IN SUCH A WAY THAT FUTURE PERFORMANCE WILL BE REDUCED.

* COMPLIANCE MUST INCLUDE INSTALLATION ACCORDING TO
 MANUFACTURER'S INSTRUCTIONS AND FLORIDA CODE REQUIREMENTS.

MIP-687



NATIONAL CERTIFIED TESTING LABORATORIES

1464 GEMINI BOULEVARD • ORLANDO, FLORIDA 32837
PHONE (407) 240-1356 • FAX (407) 240-8882

STRUCTURAL PERFORMANCE TEST REPORT

Report No: NCTL-210-2065-1
Test Date: 06-21-00
Report Date: 09-25-00
Expiration Date: 09-25-04
Revision Date: 01/31/02

Client: MI Home Products
4314 Route 209
Elizabethville, 17023-8438

Test Specimen: Better Bilt Aluminum Product's Series "420" Type OXX Aluminum Sliding Glass Door. (SGD-C35)(Single Glazed)(Steel Reinforced)(with and without sill riser).

Test Method: AAMA/NWWDA 101/I.S.2-97, "Voluntary Specifications for Aluminum, Vinyl (PVC), and Wood Windows and Glass Doors."

Revision Note: Sill leg extension was revised from 1-1/8" to 1-1/4"

TEST SPECIMEN DESCRIPTION

General: The sample tested was a three (3) panel type OXX aluminum sliding glass door measuring 15-1-3/4" wide x 8'0-1/8" high overall. The active panel measured 5'0-1/2" wide by 7'11-1/8" high; the fixed panel measured 5'0-7/8" wide by 7'11-1/8" high. Frame and panel members were not thermally broken. A plastic spacer/guide was used at each panel head/stile corner. The fixed panel was secured to the jamb with two (2) 8" long aluminum angle retainers each fastened to the jamb stile with two (2) (#8 x 3/4") pan head screws. One (1) claw type door lock assembly was located at 40" from the bottom of each active panel lock stile each with two (2) screws. One (1) adjustable metal roller assembly was used at each end of the active bottom rails. The frame was of double screw coped corner construction. Panel corners were of single screw at bottom rail and double screw at the top rail. The interior vertical sill leg employed an extruded aluminum 1-1/4" high extension; an overall height of 2.031. One (1) aluminum panel retainer was fastened at 2" from each of the active panel bottom rail. One (1) extruded aluminum female panel adapter was fastened to the fixed panel but stile with five (5) (#8 x 1/2") screws. One extruded aluminum screen adapter was fastened to the butt stile using five (5) (#8 x 1/2") screws.

Installation: The main frame was fastened to the wood test buck using forty-eight (48) (#8 x 1/2") FHS. (See fastener diagram.)



MI Home Products

2

NCTL-210-2065-1

Reinforcement: One (1) U-shaped galvanized steel reinforcing channel measuring 1-3/4" x 3/4" x 1/16" thick filled the length of the panel adapter stile. One (1) U-shaped galvanized steel reinforcing channel measuring 3/4" x 7/8" x 1/16" thick filled the length of each interlock stile.

Glazing: All panels were channel glazed using 3/16" thick clear tempered glass with a flexible vinyl glazing bead.

Weatherseal: Double strips of centerfin weatherstrip (0.270" high) were located at each jamb, stile and lock stile. A double strip of centerfin weatherstrip (0.180" high) was located at each interlock stile. A double strip of centerfin weatherstrip (0.250" high) was located at each panel top rail. A double strip of side fin weathrstrip (0.430" high) was located at each panel bottom rail. An adhesive back polypile dust plug measuring 1-3/16" x 13/16" x 0.420" was located on the head and sill at each end of the vertical stile exterior track.

Weeps: One (1) weep notch measuring 1-1/2" x leg height was located at each end of the interior sill roller leg, exterior sill roller leg and screen sill roller leg.

Interior & Exterior Surface Finish: Non-painted aluminum

Sealant: Frame and panel bottom rail corners were sealed with a small-joint sealant.

Insect Screen: Two (2) insect screens, one (1) center insect screen measuring 5'0-1/4" wide by 7'11" high; Both were of coped corner construction. The screen employed fiberglass mesh cloth with a hollow vinyl spline. One (1) roller assembly was located at each end of the bottom rails. One (1) claw type lock assembly.

TEST RESULTS

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
2.2.1.6.1	Operating Force Center Active Panel		
	To open	20 lbf	30 lbf
	In Motion	5 lbf	30 lbf
	Right Active Panel		
	To open	18 lbf	30 lbf
	In Motion	3 lbf	30 lbf
2.2.1.6.2	Deglazing - ASTM E987 Center Active Panel		
	Top Rail (50 lbf)	10.2 % (0.051")	100%
	Bottom Rail (50 lbf)	7.8 % (0.039")	100%
	Left Stile (70 lbf)	6.0 % (0.030")	100%
	Right Stile (70 lbf)	5.4 % (0.027")	100%



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MI Home Products

2

NCTL-210-2065-1

Reinforcement: One (1) U-shaped galvanized steel reinforcing channel measuring $1\text{-}3/4" \times 3/4" \times 1/16"$ thick filled the length of the panel adapter stile. One (1) U-shaped galvanized steel reinforcing channel measuring $3/4" \times 7/8" \times 1/16"$ thick filled the length of each interlock stile.

Glazing: All panels were channel glazed using $3/16"$ thick clear tempered glass with a flexible vinyl glazing bead.

Weatherseal: Double strips of centerfin weatherstrip ($0.270"$ high) were located at each jamb, stile and lock stile. A double strip of centerfin weatherstrip ($0.180"$ high) was located at each interlock stile. A double strip of centerfin weatherstrip ($0.250"$ high) was located at each panel top rail. A double strip of side fin weathrstrip ($0.430"$ high) was located at each panel bottom rail. An adhesive back polypile dust plug measuring $1\text{-}3/16" \times 13/16" \times 0.420"$ was located on the head and sill at each end of the vertical stile exterior track.

Weeps: One (1) weep notch measuring $1\text{-}1/2" \times$ leg height was located at each end of the interior sill roller leg, exterior sill roller leg and screen sill roller leg.

Interior & Exterior Surface Finish: Non-painted aluminum

Sealant: Frame and panel bottom rail corners were sealed with a small-joint sealant.

Insect Screen: Two (2) insect screens, one (1) center insect screen measuring $5\text{'-}0\text{'-}1/4"$ wide by $7\text{'-}11"$ high; Both were of coped corner construction. The screen employed fiberglass mesh cloth with a hollow vinyl spline. One (1) roller assembly was located at each end of the bottom rails. One (1) claw type lock assembly.

TEST RESULTS

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
2.2.1.6.1	Operating Force Center Active Panel		
	To open	20 lbf	30 lbf
	In Motion	5 lbf	30 lbf
	Right Active Panel		
	To open	18 lbf	30 lbf
	In Motion	3 lbf	30 lbf
2.2.1.6.2	Deglazing - ASTM E987 Center Active Panel		
	Top Rail (50 lbf)	10.2 % (0.051")	100%
	Bottom Rail (50 lbf)	7.8 % (0.039")	100%
	Left Stile (70 lbf)	6.0 % (0.030")	100%
	Right Stile (70 lbf)	5.4 % (0.027")	100%



MI Home Products

3

NCTL-210-2065-1

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
2.2.1.6.2	Deglazing - ASTM E987 Right Active Panel		
	Meeting Rail (50 lbf)	8.4 % (0.042")	<100%
	Bottom Rail (50 lbf)	8.4 % (0.042")	<100%
	Left Stile (70 lbf)	8.0 % (0.040")	<100%
	Right Stile (70 lbf)	6.2 % (0.031")	<100%
2.1.2	Air Infiltration 1.57 psf(25mph)	Passed	0.30cfm/ft ²
2.1.3	Water Resistance-(5.0GPH/FT/2) WTP=4.50 psf	No entry	No entry
2.1.4.2	Uniform Load Structural - ASTM E330 45.0 psf Exterior 45.0 psf Interior	0.245" 0.258"	0.381" 0.381"

OPTIONAL PERFORMANCE

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
4.3 *	Water Resistance - ASTM E547 & E331 5.0 gph/ft ² WTP =5.25 psf	No Entry	No Entry

Note: At this point in testing, an additional sill riser was attached to the existing main sill's interior vertical leg with the following results being obtained:

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
4.3 *	Water Resistance - ASTM E547 & E331 5.0 gph/ft ² WTP =6.00 psf	No Entry	No Entry
4.4.2	Uniform Load Structural - ASTM E330 52.5 psf Exterior 52.5 psf Interior	0.379" 0.380"	0.381" 0.381"

* Test performed with and without screen

TEST COMPLETED 07/15/98

Note: In addition, Better Bilt Aluminum Products' Series "430" and "440" also received a SGD-C35 rating being identical in panel construction and interior sill leg heights.

This test specimen meets the performance criteria level of (SGD-C35) of the AAMA 101/1.S. 2-97 specification. Detailed drawings were available for laboratory reports and compared to the test specimen at the time of this report. A copy of this report along with representative sections of the test specimen will be retained by NCTL for a period of four years. The results obtained apply only to the specimen tested.



BETTER BILT ALUMINUM PRODUCTS
FLORIDA DOOR SERIES 420
COMPARATIVE ANALYSIS CHART IN DESIGN PRESSURE

CASE0370
 07-Jan-2002
 88-0801

PANEL WIDTH >>	24	30	36	42	48	54	80
PANEL HEIGHT							
V							
80	85	71	62	56	52	48	46
96	69	57	49	44	40	37	35

TEST REPORT NOS. NCITL-210-2088-1 & 2

DESIGN PRESSURE ACHIEVED IN TEST: POS. & NEG. 35.0 PSF

WATER TEST PRESSURE: 5.25 PSF (SILL - 1-1/2" HGT.)

6.0 PSF (1-1/2" SILL W/ .500" ADAPTER - 2" HGT. O.A.)

TEST SIZE: 181 3/4" X 96 1/8"

CONFIGURATION TESTED: OXX

GLAZING: 3/16" TEMPERED GLASS

REINFORCING: (1) STL CHAN 1-3/4" X 3/4"

X 1/16" @ ADAPTER STYLE;

(1) STL CHAN 3/4" X 7/8"

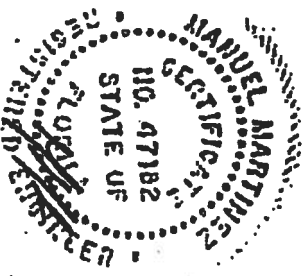
X 1/16" @ EA. INTRIK STYLE

LIMITATIONS:

THE ABOVE VALUES ARE STRUCTURAL DESIGN LOADS & HAVE NOT BEEN CAPPED BY WATER PERFORMANCE.
 WATER PRESSURE REQUIREMENT OF 15% OF DESIGN LOAD APPLIES, POSITIVE DESIGN LOADS WOULD BE LIMITED
 TO 36 PSF W/ 1-1/2" SILL & 40 PSF W/ 2" SILL.
 PANEL WIDTHS AND HEIGHTS ARE NOMINAL.

PREPARED BY:

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02-13-01

BETTER BILT ALUMINUM PRODUCTS

FLORIDA DOOR SERIES 420

COMPARATIVE ANALYSIS CHART IN DESIGN PRESSURE

CA980371

07-Jan-2002

98-0801

PANEL WIDTH >>	24	30	36	42	48	54	60
PANEL HEIGHT							
V							
80	64	54	47	42	39	37	35

TEST REPORT NOS: NCTL-210-2003-4 & 3

DESIGN PRESSURE: POS. & NEG. 35.0 PSF

WATER TEST PRESSURE: 6.25 PSF (SILL - 1-1/2" HGT.)

6.0 PSF (1-1/2" SILL W/ 1/2" ADAPTER - 2" HGT. O.A.)

TEST SIZE: 161 3/4" X 82 1/8"

GLAZING: 3/16" TEMPERED GLASS

REINFORCING: NONE

CONFIGURATION TESTED: OXX

LIMITATIONS:

THE ABOVE VALUES ARE STRUCTURAL DESIGN LOADS & HAVE NOT BEEN CAPPED BY WATER PERFORMANCE. WATER PRESSURE REQUIREMENT OF 15% OF DESIGN LOAD APPLIES, POSITIVE DESIGN LOADS WOULD BE LIMITED TO 35 PSF W/ 1-1/2" SILL & 40 PSF W/ 2" SILL. PANEL WIDTHS AND HEIGHTS ARE NOMINAL (IN INCHES).

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