FORMS

FLORIDA BUILDING CODE, ENERGY CONSERVATION

FORM 402-2010 — **Residential Building Thermal Envelope Approach** — **ALL CLIMATE ZONES**

Scope: Compliance with Section 402 of the *Florida Building Code, Energy Conservation*, shall be demonstrated by the use of Form 402 for single- and multiple-family residences of three stories or less in height, additions to existing residential buildings, renovations to existing residential buildings, new heating, cooling, and water heating systems in existing buildings, as applicable. To comply, a building must meet or exceed all of the energy efficiency requirements on Table 402A and all applicable mandatory requirements summarized in Table 402B of this form. If a building does not comply with this method or Alternate Form 402, it may still comply under Section 405 of the *Florida Building Code, Energy Conservation*.

PROJECT NAME AND ADDRESS:	Lassy Fleming 331 NW Gabriel Cv Lake City Fla. 32055	**BUILDER:**	Dion Taylor Construction Inc.
		PERMITTING OFFICE:	
OWNER:	Lassy Fleming	**PERMIT NO.:**	**JURISDICTION NO.:**

General Instructions:
1. New construction which incorporates any of the following features cannot comply using this method: glass areas in excess of 20 percent of conditioned floor area, electric resistance heat and air handlers located in attics. **Additions ≤ 600 sq.ft., renovations and equipment changeouts may comply by this method with exceptions given.**
2. Fill in all the applicable spaces of the "To Be Installed" column on Table 402A with the information requested. All "To Be Installed" values must be equal to or more efficient than the required levels.
3. Complete page 1 based on the "To Be Installed" column information.
4. Read the requirements of Table 402B and check each box to indicate your intent to comply with all applicable items.
5. Read, sign and date the "Prepared By" certification statement at the bottom of page 1. The owner or owner's agent must also sign and date the form.

	Please Print	CK
1. **New construction, addition, or existing building**	1. New Construction	✓
2. **Single-family detached or multiple-family attached**	2. Single - Family	
3. **If multiple-family–No. of units covered by this submission**	3.	
4. **Is this a worst case? (yes/no)**	4. (no)	
5. **Conditioned floor area (sq. ft.)**	5. 2800	
6. **Glass type and area:**		
a. U-factor	6a. .55	
b. SHGC	6b. .30	
c. Glass area	6c. 132 sq. ft.	
7. **Percentage of glass to floor area**	7. 5 %	
8. **Floor type, area or perimeter, and insulation:**		
a. Slab-on-grade (R-value)	8a. R= NA lin.ft.	
b. Wood, raised (R-value)	8b. R= sq.ft.	
c. Wood, common (R-value)	8c. R= sq.ft.	
d. Concrete, raised (R-value)	8d. R= sq.ft.	
e. Concrete, common (R-value)	8e. R= sq.ft.	
9. **Wall type, area and insulation:**		
a. Exterior: 1. Masonry (Insulation R-value)	9a-1. R= sq.ft.	
2. Wood frame (Insulation R-value)	9a-2. R= R 13 2256 sq.ft.	
b. Adjacent: 1. Masonry (Insulation R-value)	9b-1. R= sq.ft.	
2. Wood frame (Insulation R-value)	9b-2. R= sq.ft.	
10. **Ceiling type, area and insulation:**		
a. Under attic (Insulation R-value)	10a. R= 30 sq.ft. 4252	
b. Single assembly (Insulation R-value)	10b. R= sq.ft.	
11. **Air distribution system: Duct insulation, location, Qn**		
a. Duct location, insulation	11a. R= 6	
b. AHU location	11b.	
c. Qn. Test report attached (< 0.03; yes/no)	11c. Test report attached? Yes No	
12. **Cooling system:**		
a. Type	12a. Type: Heat Pump	
b. Efficiency	12b. SEER/EER: ~~14~~ 15	
13. **Heating system:**	13a. Type: Heat Pump	
a. Type	13b. HSPF/COP/AFUE: 9.0	
b. Efficiency		
14. **HVAC sizing calculation: attached**	14. Yes No	
15. **Hot water system:**		
a. Type	15a. Type: Electric	
b. Efficiency	15b. EF: .90	

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

PREPARED BY: Dion Taylor DATE: 1-19-2023

I hereby certify that this building is in compliance with the Florida Energy Code:

OWNER AGENT: _____ DATE: 1-19-2023

Review of 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 in accordance with Section 553.908, F.S.

CODE OFFICIAL: _____

DATE: _____

FLORIDA BUILDING CODE, ENERGY CONSERVATION

FORM 402-2010 | **Residential Building Thermal Envelope Approach** | **ALL CLIMATE ZONES**

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PROJECT NAME AND ADDRESS:	Lassy Fleming 331 NW Gabbs Glen Lake City Fla. 32055	**BUILDER:**	Dion Taylor Construction Inc.
		PERMITTING OFFICE:	
OWNER:	Lassy Fleming	**PERMIT NO.:**	**JURISDICTION NO.:**

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3.	**If multiple-family–No. of units covered by this submission**	3.	
4.	**Is this a worst case? (yes/no)**	4.	
5.	**Conditioned floor area (sq. ft.)**	5. 2800	
6.	**Glass type and area:**		
	a. U-factor	6a. .55	
	b. SHGC	6b. .30	
	c. Glass area	6c. 132 sq. ft.	
7.	**Percentage of glass to floor area**	7. 5 %	
8.	**Floor type, area or perimeter, and insulation:**		
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	b. Wood, raised (R-value)	8b. R= ____ ____ sq.ft.	
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	d. Concrete, raised (R-value)	8d. R= ____ ____ sq.ft.	
	e. Concrete, common (R-value)	8e. R= ____ ____ sq.ft.	
9.	**Wall type, area and insulation:**		
	a. Exterior: 1. Masonry (Insulation R-value)	9a-1. R= ____ ____ sq.ft.	
	2. Wood frame (Insulation R-value)	9a-2. R= R13 2286 sq.ft.	
	b. Adjacent: 1. Masonry (Insulation R-value)	9b-1. R= ____ ____ sq.ft.	
	2. Wood frame (Insulation R-value)	9b-2. R= ____ ____ sq.ft.	
10.	**Ceiling type, area and insulation:**		
	a. Under attic (Insulation R-value)	10a. R= 30 sq.ft. 4252	
	b. Single assembly (Insulation R-value)	10b. R= ____ ____ sq.ft.	
11.	**Air distribution system: Duct insulation, location, Qn**		
	a. Duct location, insulation	11a. R= 6 ____	
	b. AHU location	11b. ____	
	c. Qn. Test report attached (< 0.03; yes/no)	11c. Test report attached? Yes No	
12.	**Cooling system:**		
	a. Type	12a. Type: Heat Pump	
	b. Efficiency	12b. SEER/EER: ~~14~~ 15 D.T	
13.	**Heating system:**		
	a. Type	13a. Type: Heat Pump	
	b. Efficiency	13b. HSPF/COP/AFUE: 9.0	
14.	**HVAC sizing calculation: attached**	14. Yes No	
15.	**Hot water system:**		
	a. Type	15a. Type: Electric	
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CODE OFFICIAL: _____

DATE: _____

Design Indoor Cooling Temp. : 75 °F
Design Outdoor Cooling Temp. : 92 ° F
Temp. Difference Cooling :17°F
Indoor Humidity: 50 Grains difference: 54

Larry Fleming
331 NW Gables Glen
Area: **Gainsville Airport, FL**
Front Door Orientation South

Design Indoor Heating Temp. : 70 ° F
Design Outdoor Heating Temp. : 33 ° F
Temp. Difference Heating :37° F
Room by room load - Number of rooms: 1

Whole House Block Load

TD:Cool:17°F Heat:37°F	Sq. ft. -types 1 and 2	shading	Sq. ft.- types 1 and 2	shading	Sq. ft.- types 1 and 2		Sq. ft.
Outside Wall: North	1: 900 2:	Windows →	1: 162 2:	Glass Doors x	1: 21 2:	Doors	63
Outside Wall: South	1: 900 2:	Windows L	1: 2:	Glass Doors L	1: 2:	Doors	
Outside Wall: E & W	1: 64 2:	Windows L	1: 2:	Glass Doors L	1: 2:	Doors	
Outside Wall: NE & NW	1: 2:	Windows →	1: 2:	Glass Doors x	1: 2:	Doors	
Outside Wall: SE & SW	1: 2:	Windows L	1: 2:	Glass Doors L	1: 2:	Doors	
Floor - (linear ft. if slab)	1: 4252 2:	Ceiling	1: 9 2:	Appliances 5	Fireplaces 0		
Sky Lights	N: S:	E-W:	NE-NW:	SE-SW:			
Number of People	2	Conditioned Sq. ft.		Cubic Ft.			

Basement **Above grade:** Walls Cubic Ft. **Below grade:** walls Floor sq. ft. width 23ft. or below: 2 ft.

Fresh air recommended: 40cfm → CFM Construction: very tigh Duct system: attic

Calculate Load

Total Btu's Cooling	Sensible Load	Latent Load	Total Btu's Heating
14210	13810	400	225887

Change State | **Change City** | **Clear Data** | **Print** | **Comments** | **Change Structures** | **Calculator** | **Size Equipment** | **Help** | **Save Work**

Btu breakdown

	Sensible	Latent	Heating
walls	2354		4490
windows	3596		5215
ceilings	15		11
doors	1058		1399
floors	0		213646
appliances	6000		
people	460	400	
glass doors	326		1127
skylights	0		0
basement walls	0		0
basement floor	0		0
infiltration	0	0	0
fresh air	0	0	0
duct load	0	0	0
Totals	13810	400	225887

Structure types

Outside Walls 1: Siding or Stucco R13 insulation w/R3 board
Outside Walls 2:
Windows 1: double pane no internal shade
Windows 2:
Glass Doors 1: double pane french door
Glass Doors 2:
Floors 1: Concrete slab no edge insulation
Floor 2:
Ceiling 1: Ceiling under attic space R-30
Ceiling 2:
Doors: Metal
Skylights:
Basement Walls:
Basement Floor:
Win ht.: 6' 0" Overhang: 0' Top to overhang: 2'

Design Indoor Cooling Temp. : 75 °F
Design Outdoor Cooling Temp. : 92 ° F
Temp. Difference Cooling :17°F
Indoor Humidity: 50 Grains difference: 54

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331 NW Gables Glen
Area: **Gainsville Airport, FL**
Front Door Orientation South

Design Indoor Heating Temp. : 70 ° F
Design Outdoor Heating Temp. : 33 ° F
Temp. Difference Heating :37° F
Block Load

Whole House Block Load

TD:Cool:17°F Heat:37°F	Sq. ft. -types 1 and 2	shading	Sq. ft.- types 1 and 2	shading	Sq. ft.- types 1 and 2		Sq. ft.
Outside Wall: North	1: 630 2:	Windows →	1: 21 2:	Glass Doors x	1: 96 2:	Doors	
Outside Wall: South	1: 630 2:	Windows L	1: 60 2:	Glass Doors L	1: 2:	Doors	24
Outside Wall: E & W	1: 360 2: 360	Windows L	1: 36 2:	Glass Doors L	1: 2:	Doors	24
Outside Wall: NE & NW	1: 2:	Windows →	1: 2:	Glass Doors x	1: 2:	Doors	
Outside Wall: SE & SW	1: 2:	Windows L	1: 2:	Glass Doors L	1: 2:	Doors	
Floor - (lincar ft. if slab)	1: 220 2:	Ceiling	1: 2800 2:	Appliances 4	Fireplaces 0		
Sky Lights	N: S:	E-W:	NE-NW:	SE-SW:			
Number of People	5	Conditioned Sq. ft.	2800	Cubic Ft.	25200		

Basement **Above grade:** Walls Cubic Ft. | **Below grade:** walls Floor sq. ft. width 23ft. or below: 2 ft.

Fresh air recommended: 101cfm → CFM | Construction: good | Duct system: attic R-6 very tigh

Calculate Load	Total Btu's Cooling	Sensible Load	Latent Load	Total Btu's Heating
	27390	24462	2928	32677

Btu breakdown

	Sensible	Latent	Heating
walls	2906		4576
windows	4165		3766
ceilings	4659		3315
doors	806		1066
floors	0		11054
appliances	4800		
people	1150	1000	
glass doors	2131		2451
skylights	0		0
basement walls	0		0
basement floor	0		0
infiltration	864	1696	3761
fresh air	0	0	0
duct load	2980	232	2689
Totals	24462	2928	32677

Structure types

Outside Walls 1: Siding or Stucco R13 insulation
Outside Walls 2:
Windows 1: double pane no internal shade
Windows 2:
Glass Doors 1: double pane glass door
Glass Doors 2:
Floors 1: Concrete slab no edge insulation
Floor 2:
Ceiling 1: Ceiling under attic space R-30
Ceiling 2:
Doors: Metal
Skylights:
Basement Walls:
Basement Floor:
Win ht.: 6' 0" Overhang: 2' Top to overhang: 1'