FORM R405-14~~0~~

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**FLORIDA BUILDING CODE, ENERGY EFFICIENCY ~~CODE~~**

**~~FOR BUILDING CONSTRUCTION~~**

~~Florida Department of Business and Professional Regulation~~ –

Residential Simulated Performance Alternative ~~Method~~

|  |
| --- |
| Project Name: Sample Addition Builder Name: BUILDER Street: 346 Main Street Permit Office:City, State, Zip: Orlando , FL , 32922- Permit Number: Owner: OWNER Jurisdiction: Design Location: FL, Orlando |
| 1. New construction or existing Addition2. Single family or multiple family Single-family3. Number of units, if multiple family 14. Number of Bedrooms (Bedrms In Addition) 3(1)5. Is this a worst case? No6. Conditioned floor area above grade (ft²) 500Conditioned floor area below grade (ft²) 07. Windows(60.0 sqft.) Description Areaa. U-Factor: Dbl, U=0.55 60.00 ft²SHGC: SHGC=0.35b. U-Factor: N/A ft²SHGC:c. U-Factor: N/A ft²SHGC:d. U-Factor: N/A ft²SHGC:Area Weighted Average Overhang Depth: 1.000 ft. Area Weighted Average SHGC: 0.3508. Floor Types (500.0 sqft.) Insulation Areaa. Slab-On-Grade Edge Insulation R=0.0 500.00 ft² b. N/A R= ft² c. N/A R= ft² | 9. Wall Types (405.0 sqft.) Insulation Areaa. Concrete Block - Int Insul, Exterior R=5.0 405.00 ft² b. N/A R= ft² c. N/A R= ft² d. N/A R= ft²10. Ceiling Types (500.0 sqft.) Insulation Areaa. Under Attic (Vented) R=30.0 500.00 ft² b. N/A R= ft² c. N/A R= ft²11. Ducts R ft² a. Sup: Attic, Ret: Attic, AH: Main 6 10012. Cooling systems kBtu/hr Efficiency a. Central Unit 8.8 SEER:16.0013. Heating systems kBtu/hr Efficiency a. Electric Heat Pump 6.5 HSPF:7.7014. Hot water systems - None (Baseline assumed)a. Electric Cap: N/A EF: 0.92b. Conservation featuresNone15. Credits Pstat |
| Total Proposed Modified Loads: 13.89Glass/Floor Area: 0.120 Total Baseline Loads: 17.57 **PASS** |
| I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Building ~~Energy~~ Code, Energy Conservation.PREPARED BY: DATE: I hereby certify that this building, as designed, is in compliance with the Florida Building ~~Energy~~ Code, Energy Conservation.OWNER/AGENT: DATE:  | Review of the plans and specifications covered by this calculation indicates compliance with the Florida Building ~~Energy~~ Code, Energy Conservation. Before construction is completed this building will be inspected for compliance with Section 553.908, *Florida Statutes*.BUILDING OFFICIAL: DATE:  |

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| --- |
| **PROJECT** |
| Title: Sample Addition Bedrooms: 3 Adress Type: Street AddressBuilding Type: FLProp2010 Conditioned Area: 500 Lot #Owner: OWNER Total Stories: 1 Block/SubDivision:# of Units: 1 Worst Case: No PlatBook:Builder Name: BUILDER Rotate Angle: 0 Street: 346 Main Street Permit Office: Cross Ventilation: County: Orange Jurisdiction: Whole House Fan: City, State, Zip: Orlando ,Family Type: Single-family FL , 32922- New/Existing: AdditionComment: |
| **CLIMATE** |
| IECC Design Temp Int Design Temp Heating Design Daily TempDesign Location TMY Site Zone 97.5 % 2.5 % Winter Summer Degree Days Moisture Range |
| FL, Orlando FL\_ORLANDO\_INTL\_AR 2 41 91 75 70 526 44 Medium |
| **BLOCKS** |
| Number Name Area Volume |
| 1 Block1 500 4000 |
| **SPACES** |
| Number Name Area Volume Kitchen Occupants Bedrooms Infil ID Cooled Heated |
| 1 Main 500 4000 Yes 4 3 1 Yes Yes |
| **FLOORS** |
|  |  | # Floor Type Room Perimeter R-Value Area Tile Wood Carpet |
|  1 Slab-On-Grade Edge Insulatio Main 45 ft 0 500 ft² ---- 1 0 0 |
| **ROOF** |
| Roof Gable Roof Solar SA Emitt Emitt Deck Pitch# Type Materials Area Area Color Absor. Tested Tested Insul. (deg) |
|  1 Hip Composition shingles 542 ft² 0 ft² Medium 0.96 No 0.9 No 0 22.6 |
| **ATTIC** |
| # Type Ventilation Vent Ratio (1 in) Area RBS IRCC |
|  1 Full attic Vented 300 500 ft² N N |
| **CEILING** |
|  | # Ceiling Type Space R-Value Area Framing Frac Truss Type |
|  1 Under Attic (Vented) Main 30 500 ft² 0.11 Wood |

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|  |
| --- |
| **WALLS** |
|  |
|  |  | Adjacent Cavity Width Height Sheathing Framing Solar Below# Ornt To Wall Type Space R-Value Ft In Ft In Area R-Value Fraction Absor. Grade% |
|  1 SE Exterior Concrete Block - Int Insul Main 5 20 9 180 ft² 0 0.6 0 2 SW Exterior Concrete Block - Int Insul Main 5 25 9 225 ft² 0 0.6 0 |
| **DOORS** |
|  |  | # Ornt Door Type Space Storms U-Value Width Height Area |
| Ft In Ft In |
|  1 SE Wood Main None 0.460000 2.8 6.7 18.75999 |
| **WINDOWS**Orientation shown is the entered, Proposed orientation. |
| Overhang# Ornt Frame Panes NFRC U-Factor SHGC Storms Area Depth Separation Int Shade Screening |
|  1 SE Metal Low-E Double Yes 0.55 0.35 N 30 ft² 1 ft 0 in 1 ft 0 in HERS 2006 None 2 SW Metal Low-E Double Yes 0.55 0.35 N 30 ft² 1 ft 0 in 1 ft 0 in HERS 2006 None |
| **INFILTRATION** |
| # Scope Method SLA CFM 50 ELA EqLA ACH ACH 50 |
| 1 BySpaces Best Guess 0.000500 655.75 36 67.703 0.3650 9.8363 |
| **HEATING SYSTEM** |
|  | # System Type Subtype Efficiency Capacity Block Ducts |
|  1 Electric Heat Pump None HSPF: 7.7 6.5 kBtu/hr 1 sys#1 |
| **COOLING SYSTEM** |
|  | # System Type Subtype Efficiency Capacity Air Flow SHR Block Ducts |
|  1 Central Unit Split SEER: 16 8.8 kBtu/hr 360 cfm 0.75 1 sys#1 |
| **HOT WATER SYSTEM** |
|  |  | # System Type EF Cap Use SetPnt Conservation |
|  1 Electric 0.92 40 gal 60 gal 120 deg None |
| **SOLAR HOT WATER SYSTEM** |
| FSEC Collector StorageCert # Company Name System Model # Collector Model # Area Volume FEF |
|  None None ft² |

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|  |  |  |
| --- | --- | --- |
|  | **DUCTS** |  |
|  | # | ---- Supply ---- Location R-Value Area | ---- Return ---- Location Area | Leakage Type | AirHandler CFM 25 | PercentLeakage | QN RLF | HVAC # Heat Cool |
|   | 1 | Attic 6 100 ft² | Attic 25 ft² | DSE=0.88 | Main 0.0 cfm | 0.00 % | 0.00 0.60 | 1 1 |

**TEMPERATURES**

Programable Thermostat: Y Ceiling Fans:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cooling Heating Venting | [X] Jan [X] Jan [X] Jan | [X] Feb [X] Feb [X] Feb | [X] Mar [X] Mar [X] Mar | [X] Apr [X] Apr [X] Apr | [X] [X] [X] | May May May | [X] Jun [X] Jun [X] Jun | [X] Jul [X] Jul [X] Jul | [X] Aug [X] Aug [X] Aug | [X] Sep [X] Sep [X] Sep |  | [X] Oct [X] Oct [X] Oct | [X] Nov [X] Nov [X] Nov | [X] Dec [X] Dec [X] Dec |
| Thermostat Schedule: | HERS 200 | 6 Reference |  |  |  |  | Hou | rs |  |  |  |  |  |
| 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 |

**Florida Code Compliance Checklist**

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~~Florida Department of Business and Professional Regulations~~

Residential Simulated ~~Whole Building~~ Performance Alternative ~~Method~~

ADDRESS: 346 Main Street PERMIT #: Orlando, FL, 32922-

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

|  |  |  |  |
| --- | --- | --- | --- |
| **COMPONENT** | **SECTION** | SUMMARY OF REQUIREMENT(S) | **CHECK** |
| Air leakage | R402.4 | To be caulked, gasketed, weatherstripped or otherwise sealed per Table R402.4.1.1. Recessed lighting: IC-rated as having ≤ 2.0 cfm tested to ~~meeting~~ ASTM E 283. Windows and doors: ~~=~~ 0.3 cfm/sq.ft. (swinging doors: 0.5 cfm) when tested to NFRC 400 or AAMA/WDMA/CSA 101/I.S. 2/A 440. Blower door t~~T~~esting to ≤5 ACH ~~or visual inspection~~ required. Fireplaces: tight-fitting flue dampers & outdoor combustion air ~~gasketed doors & outdoor combustion air. Must complete envelope leakage report or visually verify Table 402.4.2.~~ |  |
| Thermostat &Controls | R403.1.1 | 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 | R403.2.2R403.2~~3~~.3 | 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 C4~~5~~03.2.7.2 of this code.Building framing cavities shall not be used as ~~supply~~ ducts or plenums. |  |
| Water heaters | R403.4 | Heat trap required for vertical pipe risers. Comply with efficiencies in Table C404.2~~403.4.3.2~~. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). ~~Circulating system~~ Most pipes insulated to = R-3~~2~~ + accessible manual OFF switch. |  |
| Mechanical ventilation | R403.5 | Provide with whole-house mechanical ventilation in accordance with Section M1507.3 of the *FBC-Residential*. 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 | R403.9 | Pool pumps and pool pump motors with a total horsepower (HP) of = 1HP 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 fromsite-recovered energy. Off/timer switch required. Gas heaters minimumthermal efficiency=~~78% (~~82% ~~after 4/16/13)~~. Heat pump pool heaters except geothermal) minimum COP= 4.0. |  |
| Cooling/heating equipment | R403.6 | Sizing calculation performed & attached. Minimum efficiencies per Tables C4~~5~~03.2.3. 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~~ | R405.2.1 | R-19, space permitting. |  |

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**FLORIDA BUILDING CODE, ENERGY EFFICIENCY**

**~~CODE FOR BUILDING CONSTRUCTION~~**

~~Florida Department of Business and Professional Regulation~~ –

 Simulated ~~Residential~~ Performance Alternative ~~Method~~

|  |
| --- |
| Project Name: Sample 2 zone home Builder Name: BUILDER Street: 123 Main Street Permit Office:City, State, Zip: Orlando , FL , 32922- Permit Number: Owner: OWNER Jurisdiction: Design Location: FL, Orlando |
| 1. New construction or existing New (From Plans)2. Single family or multiple family Single-family3. Number of units, if multiple family 14. Number of Bedrooms 65. Is this a worst case? No6. Conditioned floor area above grade (ft²) 2400Conditioned floor area below grade (ft²) 07. Windows(416.0 sqft.) Description Areaa. U-Factor: Dbl, U=0.75 276.00 ft²SHGC: SHGC=0.40b. U-Factor: Dbl, U=0.60 40.00 ft²SHGC: SHGC=0.30c. U-Factor: Dbl, U=0.50 40.00 ft²SHGC: SHGC=0.35d. U-Factor: other (see details) 60.00 ft²SHGC: other (see details)Area Weighted Average Overhang Depth: 2.000 ft. Area Weighted Average SHGC: 0.4068. Floor Types (2400.0 sqft.) Insulation Areaa. Slab-On-Grade Edge Insulation R=0.0 1200.00 ft² b. Interior Floor R=0.0 1200.00 ft² c. N/A R= ft² | 9. Wall Types (2350.0 sqft.) Insulation Areaa. Frame - Wood, Exterior R=13.0 1230.00 ft² b. Concrete Block - Int Insul, Exterior R=5.0 944.00 ft² c. Frame - Wood, Adjacent R=13.0 176.00 ft² d. N/A R= ft²10. Ceiling Types (1200.0 sqft.) Insulation Areaa. Under Attic (Vented) R=30.0 1200.00 ft² b. N/A R= ft² c. N/A R= ft²11. Ducts R ft² a. Sup: Main, Ret: Main, AH: Main 6 240 b. Sup: Attic, Ret: Attic, AH: 2nd Floor 6 24012. Cooling systems kBtu/hr Efficiency a. Central Unit 20.0 SEER:13.00 b. Central Unit 18.0 SEER:13.0013. Heating systems kBtu/hr Efficiency a. Electric Heat Pump 20.0 HSPF:7.70 b. Natural Gas Furnace 18.0 AFUE:0.7814. Hot water systemsa. Electric Cap: 50 gallonsEF: 0.9 b. Conservation featuresNone15. Credits Pstat |
|  Total Proposed Modified Loads: 47.03Glass/Floor Area: 0.173 Total Baseline Loads: 58.94 **PASS** |
| I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Building ~~Energy~~ Code, Energy Conservation.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 Building ~~Energy~~ Code, Energy Conservation. Before construction is completed this building will be inspected for compliance with Section 553.908Florida 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 R403.2.2.1.1.

- Compliance requires an envelope leakage test report~~, by a Florida Class 1 Rater,~~ in accordance with Section R402.4.1.2. ~~Table B-1.1.2.~~

- ~~Compliance requires a roof absorptance test and a roof emittance test in accordance with 405.6.2~~

- Compliance requires an air distribution system test report, by an energy ~~Florida Class 1~~ ~~R~~rater in accordance with Sec. 553.99, F.S. or as authorized by Florida Statutes, confirming systemleakage to outdoors tested at 25 pascals pressure difference in accordance with R403.2.2.1. is not greater than (36 cfm:Duct#1) (36 cfm:Duct#2)

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| **PROJECT** |
| Title: Sample 2 zone home Bedrooms: 6 Adress Type: Street AddressBuilding Type: FLProp2010 Conditioned Area: 2400 Lot #Owner: OWNER Total Stories: 2 Block/SubDivision:# of Units: 1 Worst Case: No PlatBook:Builder Name: BUILDER Rotate Angle: 0 Street: 123 Main Street Permit Office: Cross Ventilation: No County: Orange Jurisdiction: Whole House Fan: No City, State, Zip: Orlando ,Family Type: Single-family FL , 32922- New/Existing: New (From Plans)Comment: High Performance Florida Home |
| **CLIMATE** |
| IECC Design Temp Int Design Temp Heating Design Daily TempDesign Location TMY Site Zone 97.5 % 2.5 % Winter Summer Degree Days Moisture Range |
| FL, Orlando FL\_ORLANDO\_INTL\_AR 2 41 91 75 70 526 44 Medium |
| **BLOCKS** |
| Number Name Area Volume |
| 1 Zone1 1200 96002 Zone2 1200 9600 |
| **SPACES** |
| Number Name Area Volume Kitchen Occupants Bedrooms Infil ID Cooled Heated |
| 1 Main 1200 9600 Yes 3.5 3 1 Yes Yes2 2nd Floor 1200 9600 No 3.5 3 2 Yes Yes |
| **FLOORS** |
|  |  | # Floor Type Room Perimeter Perimeter R-Value Area Joist R-Value Tile Wood Carpet |
|  1 Slab-On-Grade Edge Insulatio Main 140 ft 0 1200 ft² ---- 0.2 0 0.8 2 Interior Floor 2nd Floor ---- ---- 1200 ft² 0 0 0 1 |
| **ROOF** |
| Roof Gable Roof Solar SA Emitt Emitt Deck Pitch# Type Materials Area Area Color Absor. Tested Tested Insul. (deg) |
|  1 Hip Composition shingles 1300 ft² 0 ft² White 0.85 Yes 0.9 Yes 0 22.6 |
| **ATTIC** |
| # Type Ventilation Vent Ratio (1 in) Area RBS IRCC |
|  1 Full attic Vented 150 1200 ft² N N |

**CEILING**

# Ceiling Type

 1 Under Attic (Vented)

Space

2nd Floor

R-Value Area Framing Frac Truss Type

30 1200 ft² 0.11 Wood

**WALLS**

Adjacent

Cavity

Width

Height

Sheathing Framing Solar

Below

# Ornt

To Wall Type

Space

R-Value

Ft In Ft In

Area

R-Value

Fraction Absor.

Grade%

 1 N

 2 E

 3 S

 4 W

 5 W

 6 N

 7 E

 8 S

 9 W

Exterior Concrete Block - Int Insul Exterior Concrete Block - Int Insul Exterior Concrete Block - Int Insul Exterior Concrete Block - Int Insul Garage Frame - Wood

Exterior Frame - Wood Exterior Frame - Wood Exterior Frame - Wood

Exterior Frame - Wood

Main 5

Main 5

Main 5

Main 5

Main 13

2nd Floor 13

2nd Floor 13

2nd Floor 13

2nd Floor 13

40 8

30 8

40 8

8 8

22 8

40 9

30 9

40 9

30 8

320 ft²

240 ft²

320 ft²

64 ft²

176 ft²

360 ft²

270 ft²

360 ft²

240 ft²

0 0

0 0

0 0

0 0

0 0

0 0.23

0 0.23

0 0.23

0 0.23

0.5 0

0.5 0

0.5 0

0.5 0

0.01 0

0.5 0

0.5 0

0.5 0

0.5 0

**DOORS**

# Ornt

Door Type

Space

Storms

U-Value

Width

Height

Area

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Ft In | Ft | In |  |
|   | 1 | N | Insulated | Main | None | 0.2 | 3 | 6 | 8 | 20 ft² |
|   | 2 | S | Insulated | Main | None | 0.2 | 3 | 6 | 8 | 20 ft² |

**WINDOWS**

Orientation shown is the entered, Proposed orientation.

Overhang

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | # | Ornt | Frame | Panes | NFRC | U-Factor | SHGC | Storms | Area | Depth | Separation | Int Shade | Screening |
|   | 1 | N | Vinyl | Low-E Double | Yes | 0.75 | 0.4 | N | 48 ft² | 2 ft 0 in | 10 ft 4 in | HERS 2006 | None |
|   | 2 | N | None | Glazed Block | No | 0.6 | 0.6 | N | 24 ft² | 2 ft 0 in | 10 ft 4 in | HERS 2006 | None |
|   | 3 | E | Vinyl | Low-E Double | Yes | 0.75 | 0.4 | N | 24 ft² | 2 ft 0 in | 10 ft 4 in | HERS 2006 | None |
|   | 4 | E | Vinyl | Low-E Double | Yes | 0.75 | 0.4 | N | 24 ft² | 2 ft 0 in | 10 ft 4 in | HERS 2006 | None |
|   | 5 | S | Vinyl | Low-E Double | Yes | 0.75 | 0.4 | N | 36 ft² | 2 ft 0 in | 10 ft 4 in | HERS 2006 | None |
|   | 6 | S | Vinyl | Low-E Double | Yes | 0.5 | 0.35 | N | 40 ft² | 2 ft 0 in | 10 ft 4 in | HERS 2006 | None |
|   | 7 | W | Vinyl | Low-E Double | Yes | 0.6 | 0.3 | N | 16 ft² | 2 ft 0 in | 10 ft 4 in | HERS 2006 | None |
|   | 8 | N | Vinyl | Low-E Double | Yes | 0.75 | 0.5 | N | 36 ft² | 2 ft 0 in | 1 ft 4 in | HERS 2006 | None |
|   | 9 | E | Vinyl | Low-E Double | Yes | 0.75 | 0.4 | N | 48 ft² | 2 ft 0 in | 1 ft 4 in | HERS 2006 | None |
|   | 10 | S | Vinyl | Low-E Double | Yes | 0.75 | 0.4 | N | 48 ft² | 2 ft 0 in | 1 ft 4 in | HERS 2006 | None |
|   | 11 | S | Vinyl | Low-E Double | Yes | 0.75 | 0.4 | N | 48 ft² | 2 ft 0 in | 1 ft 4 in | HERS 2006 | None |
|   | 12 | W | Vinyl | Low-E Double | Yes | 0.6 | 0.3 | N | 24 ft² | 2 ft 0 in | 1 ft 4 in | HERS 2006 | None |

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| --- |
| **GARAGE** |
|  | # Floor Area Ceiling Area Exposed Wall Perimeter Avg. Wall Height Exposed Wall Insulation |
|  1 384 ft² 384 ft² 64 ft 8 ft 13 |
| **INFILTRATION** |
| # Scope Method SLA CFM 50 ELA EqLA ACH ACH 50 |
| 1 BySpaces Proposed ACH(50) 0.000360 1133.1 62.208 116.99 0.3235 7.08212 BySpaces Proposed ACH(50) 0.000355 1120 61.486 115.63 0.3197 7 |
| **HEATING SYSTEM** |
|  | # System Type Subtype Efficiency Capacity Block Ducts |
|  1 Electric Heat Pump None HSPF: 7.7 20 kBtu/hr 1 sys#1 2 Natural Gas Furnace None HSPF: 0.78 18 kBtu/hr 2 sys#2 |
| **COOLING SYSTEM** |
|  | # System Type Subtype Efficiency Capacity Air Flow SHR Block Ducts |
|  1 Central Unit None SEER: 13 20 kBtu/hr 600 cfm 0.75 1 sys#1 2 Central Unit None SEER: 13 18 kBtu/hr 540 cfm 0.75 2 sys#2 |
| **HOT WATER SYSTEM** |
|  | # System Type EF Cap Use SetPnt Conservation |
|  1 Electric 0.9 50 gal 90 gal 120 deg None |
| **SOLAR HOT WATER SYSTEM** |
|  |  | FSEC Collector Storage |
| Cert # Company Name System Model # Collector Model # Area Volume FEF |
|  None None ft² |
| **DUCTS** |
| ---- Supply ---- ---- Return ---- Air Percent HVAC ## Location R-Value Area Location Area Leakage Type Handler CFM 25 Leakage QN RLF Heat Cool |
|  1 Main 6 240 ft² Main 60 ft² Proposed Qn Main 36.0 cfm 6.00 % 0.03 0.50 1 1 2 Attic 6 240 ft² Attic 60 ft² Proposed Qn 2nd Floor 36.0 cfm 6.67 % 0.03 0.50 2 2 |

**TEMPERATURES**

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Programable Thermostat: Y Ceiling Fans:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cooling Heating Venting | [X] Jan [X] Jan [X] Jan | [X] Feb [X] Feb [X] Feb | [X] Mar [X] Mar [X] Mar | [X] Apr [X] Apr [X] Apr | [X] [X] [X] | May May May | [X] Jun [X] Jun [X] Jun | [X] Jul [X] Jul [X] Jul | [X] Aug [X] Aug [X] Aug | [X] Sep [X] Oct [X] Sep [X] Oct [X] Sep [X] Oct | [X] Nov [X] Nov [X] Nov | [X] Dec [X] Dec [X] Dec |
| Thermostat Schedule: | HERS 200 | 6 Reference |  |  |  |  | Hou | rs |  |  |  |  |  |
| 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 |

FORM 405-10

**Florida Code Compliance Checklist**

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

ADDRESS: 123 Main Street PERMIT #: Orlando, FL, 32922-

EnergyGauge® USA - FlaRes2010

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

|  |  |  |  |
| --- | --- | --- | --- |
| **COMPONENT** | **SECTION** | SUMMARY OF REQUIREMENT(S) | **CHECK** |
| Air leakage | R402.4 | To be caulked, gasketed, weatherstripped or otherwise sealed per Table R402.4.1.1. Recessed lighting: IC-rated as having ≤ 2.0 cfm tested to ~~meeting~~ ASTM E 283. Windows and doors: ~~=~~ 0.3 cfm/sq.ft. (swinging doors: 0.5 cfm) when tested to NFRC 400 or AAMA/WDMA/CSA 101/I.S. 2/A 440. Blower door t~~T~~esting to ≤5 ACH ~~or visual inspection~~ required. Fireplaces: tight-fitting flue dampers & outdoor combustion air ~~gasketed doors & outdoor combustion air. Must complete envelope leakage report or visually verify Table 402.4.2.~~ |  |
| Thermostat &controls | R403.1.1 | 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 | R403.2.2R403.2~~3~~.3 | 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 C4~~5~~03.2.7.2 of this code.Building framing cavities shall not be used as ~~supply~~ ducts or plenums. |  |
| Water heaters | R403.4 | Heat trap required for vertical pipe risers. Comply with efficiencies in Table C404.2~~403.4.3.2~~. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). ~~Circulating system~~ Most pipes insulated to = R-3~~2~~ + accessible manual OFF switch. |  |
| Mechanical ventilation | R403.5 | Provide with whole-house mechanical ventilation in accordance with Section M1507.3 of the *FBC-Residential*. 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 | R403.9 | Pool pumps and pool pump motors with a total horsepower (HP) of = 1HP 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 fromsite-recovered energy. Off/timer switch required. Gas heaters minimumthermal efficiency=~~78% (~~82% ~~after 4/16/13)~~. Heat pump pool heaters except geothermal) minimum COP= 4.0. |  |
| Cooling/heating equipment | R403.6 | Sizing calculation performed & attached. Minimum efficiencies per Tables C4~~5~~03.2.3. 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~~ | R405.2.1 | R-19, space permitting. |  |

1. New construction or existing

New (From Plans)

9. Wall Types

Insulation Area

2. Single family or multiple family

3. Number of units, if multiple family

4. Number of Bedrooms

Single-family

1

6

a. Frame - Wood, Exterior R=13.0 1230.00 ft² b. Concrete Block - Int Insul, Exterior R=5.0 944.00 ft² c. Frame - Wood, Adjacent R=13.0 176.00 ft² d. N/A R= ft²

10. Ceiling Types

Insulation Area

5. Is this a worst case? No

a. Under Attic (Vented) R=30.0 1200.00 ft²

6. Conditioned floor area (ft²)

2400

b. N/A

R= ft²

7. Windows\*\*

Description Area

c. N/A R= ft²

a. U-Factor:

Dbl, U=0.75 276.00 ft²

11. Ducts

a. Sup: Main, Ret: Main, AH: Main

R ft²

6 240

SHGC:

b. U-Factor:

SHGC=0.40

Dbl, U=0.60 40.00 ft²

b. Sup: Attic, Ret: Attic, AH: 2nd Floor 6 240

SHGC:

SHGC=0.30

12. Cooling systems

kBtu/hr

Efficiency

c. U-Factor: SHGC:

Dbl, U=0.50 40.00 ft²

SHGC=0.35

a. Central Unit 20.0 SEER:13.00 b. Central Unit 18.0 SEER:13.00

d. U-Factor:

other (see details) 60.00 ft²

13. Heating systems kBtu/hr

Efficiency

SHGC:

other (see details)

a. Electric Heat Pump 20.0 HSPF:7.70

Area Weighted Average Overhang Depth:

Area Weighted Average SHGC:

8. Floor Types

2.000 ft.

0.406

Insulation Area

b. Natural Gas Furnace

14. Hot water systems

18.0 AFUE:0.78

a. Slab-On-Grade Edge Insulation b. Interior Floor

c. N/A

R=0.0 1200.00 ft²

R=0.0 1200.00 ft²

R= ft²

a. Electric Cap: 50 gallons

EF: 0.9

b. Conservation features

None

15. Credits Pstat

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

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I certify that this home has complied with the Florida Building ~~Energy Efficiency~~ Code, Energy Conservation, ~~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.~~

1. New construction or existing

Addition

9. Wall Types

Insulation Area

2. Single family or multiple family

3. Number of units, if multiple family

4. Number of Bedrooms

Single-family

1

3(1)

a. Concrete Block - Int Insul, Exterior R=5.0 405.00 ft² b. N/A R= ft² c. N/A R= ft² d. N/A R= ft²

10. Ceiling Types

Insulation Area

5. Is this a worst case? No

a. Under Attic (Vented) R=30.0 500.00 ft²

6. Conditioned floor area (ft²)

500

b. N/A

R= ft²

7. Windows\*\*

Description Area

c. N/A R= ft²

a. U-Factor:

Dbl, U=0.55 60.00 ft²

11. Ducts

R ft²

SHGC:

b. U-Factor:

SHGC=0.35

N/A ft²

a. Sup: Attic, Ret: Attic, AH: Main 6 100

SHGC:

12. Cooling systems

kBtu/hr

Efficiency

c. U-Factor: SHGC:

N/A ft²

a. Central Unit 8.8 SEER:16.00

d. U-Factor:

N/A ft²

1~~3~~. Heating systems kBtu/hr

Efficiency

SHGC:

Area Weighted Average Overhang Depth: Area Weighted Average SHGC:

8. Floor Types

a. Slab-On-Grade Edge Insulation b. N/A

c. N/A

1.000 ft.

0.350

Insulation Area

R=0.0 500.00 ft²

R= ft²

R= ft²

a. Electric Heat Pump 6.5 HSPF:7.70

1~~4~~. Hot water systems - None (Baseline assumed)

a. Electric Cap: N/A EF: 0.92

b. Conservation features

None

15. Credits Pstat

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

I certify that this home has complied with the Florida Building ~~Energy Efficiency~~ Code, Energy Efficiency, ~~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.~~

**TABLE R402.4.1.1 ~~2~~**

**AIR BARRIER AND INSULATION INSPECTION ~~COMPONENT CRITERIA~~**

|  |
| --- |
| Project Name: Sample Addition Builder Name: BUILDER Street: 346 Main Street Permit Office:City, State, Zip: Orlando , FL , 32922- Permit Number: Owner: OWNER Jurisdiction: Design Location: FL, Orlando |
| **COMPONENT** | **CRITERIA** | **CHECK** |
| Air barrier and thermal barrier | A continuous air barrier shall be ~~Exterior thermal envelope insulation for framed walls is~~ installed in the ~~substantial contact and continuous alignment~~ with building envelope ~~air barrier~~.Breaks or joints in the air barrier shall be sealed ~~are filled or repaired~~.Air-permeable insulation shall ~~is~~ not be used as a sealing material.Exterior thermal envelope contains a continuous air barrier. ~~Air-permeable insulation is inside of an air barrier~~. |  |
| Ceiling/attic | Air barrier in any dropped ceiling/soffit shall be ~~is substantially~~ aligned with the insulation and any gaps in the air barrier ~~are~~ sealedA~~ttic a~~ccess openings, drop down stair or knee wall doors to nconditioned attic spaces shall be sealed. ~~(except unvented attic), knee wall door, or drop down~~~~stair is sealed.~~ |  |
| Walls | Corners and headers shall be ~~are~~ insulated and the j~~J~~unction of foundation and sill plate shall be ~~is~~ sealed.The junction of the top plate and top of exterior walls shall be sealed.Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.Knee walls shall be seled. |  |
| Windows and doors | The Space between window/door jambs and framing and skylights and framing shall be ~~is~~ sealed. |  |
| Rim joists | Rim joists shall be ~~are~~ insulated and include the ~~an~~ air barrier. |  |
| Floors (including above-garage and cantilevered floors) | Insulation shall be ~~is~~ installed to maintain permanent contact with underside of subfloor decking.The air barrier shall be installed at any exposed edge of insulation. |  |
| Crawl space walls | Where provided in lieu of floor insulation, i~~I~~nsulation shall be ~~is~~ permanently attached to the crawlspace walls.Exposed earth in unvented crawl spaces shall be ~~is~~ covered with a Class I vapor retarder with overlapping joints taped. |  |
| Shafts, penetrations | Duct shafts, utility penetrations, ~~knee walls~~ and flue shafts opening to exterior or unconditioned space shall be ~~are~~ sealed. |  |
| Narrow cavities | Batts in narrow cavities shall be ~~are~~ cut to fit, or narrow cavities shall be ~~are~~ filled by~~sprayed/blown~~ insulation that on installation readily conforms to the available cavity space. |  |
| Garage separation | Air sealing shall be ~~is~~ provided between the garage and conditioned spaces. |  |
| Recessed lighting | Recessed light fixtures installed in the building thermal envelope shall be ~~are~~ air tight, IC rated, and sealed to the drywall.Exception—fixtures in conditioned space. |  |
| 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. ~~Insulation is placed between outside and pipes~~. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation |  |
| Shower/tub on exterior wall | Exterior walls adjacent to s~~S~~howers and tubs shall be insulated ~~on exterior walls have insulation~~ and the ~~an~~ air barrier installed separating them from the showers and tubs ~~separating them from the exterior wall~~. |  |
| Electrical/phone box on | The a~~A~~ir barrier shall be installed ~~extends~~ behind electrical or communication boxes or air sealed~~-type~~ boxes shall be ~~are~~ installed. |  |
| ~~Common wall~~ | ~~Air barrier is installed in common wall between dwelling units.~~ |  |
| HVAC register boots | HVAC register boots that penetrate building thermal envelope shall be ~~are~~ sealed to the subfloor or drywall. |  |
|  Fireplace  | An air barrier shall be installed on f~~F~~ireplace walls. Fireplaces shall have gasketed doors. include an air ~~barrier~~.  |  |

\*\* Software Title and Version Here \*\* Section 405.4.1 Compliant Software

EnergyGauge® USA - FlaRes2010

Project Name: Street:

Sample Addition

346 Main Street

Builder Name: Permit Office:

BUILDER

City, State, Zip: Orlando , FL , 32922-

Permit Number:

Owner:

OWNER

Jurisdiction:

Design Location: FL, Orlando

Air Distribution System Leakage Test Results

|  |
| --- |
| CFM25 Air Distribution System Leakage Test Values |
| Line | System | Duct Leakage to Outdoors |
| 1 | System 1 |  cfm25(out) |
| 2 | System 2 |  cfm25(out) |
| 3 | System 3 |  cfm25(out) |
| 4 | System 4 |  cfm25(out) |
| 5 | **Total House Duct System Leakage** | Sum lines 1-4 Divide by (Total Conditioned Floor Area)=  **(Qn,out)**To qualify as "substantially leak free" Qn,out must be less than or equal to 0.03. |

I hereby certify that the above duct testing performance results demonstrate compliance with the Florida Building ~~Energy~~ Code, Energy Conservation, requirements in accordance with Section R403.2.2.1.

**Signature: Printed Name:**

**Florida Rater Certification #: DATE:**

EnergyGauge®

\*\* Software Title and Version Here \*\*

Florida Building Code, Energy Conservation, requires that testing to confirm duct leakage be performed by an energy rater certified in accordance with Section 553.99, F.S,. or other authorized by Florida Statutes ~~Class 1 Florida Energy Gauge Certified Energy Rater. Certified Florida Class 1 raters can be found at:~~ [~~http://energygauge.com/search.htm~~](http://energygauge.com/search.htm)

**BUILDING OFFICIAL: DATE:**

Section 405.4.1 Compliant Software

Project Name: Street:

Sample Addition

346 Main Street

Builder Name: Permit Office:

BUILDER

City, State, Zip: Orlando , FL , 32922-

Permit Number:

Owner:

OWNER

Jurisdiction:

Design Location: FL, Orlando

Envelope Leakage Test Results

Regression Data:

C: n: R:

Leakage Characteristics

Multi Point Test Data:

|  |  |
| --- | --- |
| CFM(50): |   |
| ELA: |   |
| EqLA: |   |
| ACH: |   |
| ACH(50): |   |
| SLA: |   |

|  |  |  |
| --- | --- | --- |
|  | HOUSE PRESSURE | FLOW: |
| 1 | Pa | cfm |
| 2 | Pa | cfm |
| 3 | Pa | cfm |
| 4 | Pa | cfm |
| 5 | Pa | cfm |
| 6 | Pa | cfm |

**402.4.1.2~~.1~~ Testing o~~ption~~**

The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 air changes per hour in climate Zones 1 and 2. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals), Where required by the code official, testing shall be conducted by 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.

~~Building envelope tightness and insulation installation shall be considered acceptable when tested air leakage is less~~

~~than seven air changes per hour (ACH) when tested with a blower door at a pressure of 33.5 psf (50 Pa). Testing shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances.~~

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~~, including exhaust, intake, makeup air, backdraft and flue dampers~~ beyond intended infiltration control measures;

3. Interior doors, if installed at the time of the test, shall be open;

4. Exterior doors ~~openings~~ for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;

5. Heating and cooling system(s), if installed at the time of the test, shall be turned off;

6. ~~HVAC ducts shall not be sealed; and~~

~~7~~. Supply and return registers, if installed at the time

of the test,, shall ~~not~~ be fully open ~~sealed~~.

I hereby certify that the above envelope leakage performance results demonstrate compliance with Florida Building ~~Energy~~ Code, Energy Conservation, requirements in accordance with Section R402.4.1.2 ~~Table B-1.1.2~~.

**Signature: Printed Name:**

Florida Building Code requires testing to confirm envelope leakage be performed by an energy rater certified in accordance with Section 553.99, F.S,. or other authorized by Florida Statutes ~~Class 1~~

~~Florida Energy Gauge Certified~~

~~Energy Rater. Certified Florida Class 1 raters can be found at:~~ [~~http://energygauge.com/search.htm~~](http://energygauge.com/search.htm)

**Florida Rater Certification #:**

**DATE:**

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\*\* Software Title and Version Here \*\*

Section 405.4.1 Compliant Software