



FSEC Energy Research Center

UNIVERSITY OF CENTRAL FLORIDA

Impactful Residential Provision Differences Between the Florida Building Code, Energy Conservation, 8th Edition (2023) and 2021 International Energy Conservation Code

Draft Interim Report

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Project Overview


This project was initiated to review residential provisions of the Florida Building Code, Energy Conservation, 8th Edition (2023) (FBC-EC) in order to make a determination if it meets or exceeds the 2021 International Energy Conservation Code (IECC) regarding building energy efficiency. The project’s code stringency evaluation activities include:

- Reviewing residential provisions of the 2023 FBC-EC and comparing them with residential provisions of the 2021 IECC
- Listing impactful code differences by Mandatory, Prescriptive, Performance and Energy Rating Index categories and providing the anticipated stringency impact for each
- Using EnergyGauge® USA energy modeling software to compare 2021 IECC and 2023 FBC-EC Prescriptive and Performance compliance method stringencies.

Impactful Code Differences Listing

This interim report provides a listing of the impactful differences between the 2023 FBC-EC and 2021 IECC, together with the anticipated impact of each on code stringency.

2023 FBC-EC vs. 2021 IECC Impactful Differences Listing and Stringency Impacts

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
CHAPTER 1 SCOPE AND ADMINISTRATION			
Scope and Admin	R101.5.1	FBC-EC compliance calculation software approval requirement	May increase consistency but difficult to assess stringency without field data
CHAPTER 3 GENERAL REQUIREMENTS			
Climate Zones  <small>IECC 2021 has four counties in climate zone 1 (1) Florida code includes 3 other counties (★)</small>	Table R301.1	2021 IECC adds Palm Beach as Climate Zone 1 county; FBC-EC includes three additional south Florida counties in Climate Zone 1	Some impact on Prescriptive compliance (in applicable cases)
CHAPTER 4 RESIDENTIAL ENERGY EFFICIENCY			
Addresses all compliance options	IECC R401.2.5	2021 IECC adds “additional energy efficiency” section which stipulates additional efficiency requirements for all compliance options: - For Prescriptive compliance, one of the Section R408.2 package options - For Performance compliance, one of the Section R408.2	Decreases FBC-EC Prescriptive and Energy Rating Index stringency wrt IECC; for Performance compliance, the 2023 FBC-EC includes an equivalent 5% stringency reduction, so now matches IECC

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
		package options or 5% reduction in annual energy cost - For Energy Rating Index compliance, a 5% reduction from the target Index	
Mandatory	R402.2.3	2021 IECC makes section mandatory, adds “net free area” to the baffle opening stipulation, and adds baffle installation language to maximize space for attic insulation coverage and prevent ventilation air bypass	Slightly decreases FBC-EC stringency wrt IECC (depending on typical practice)
Mandatory	FBC-EC R402.2.4 IECC R402.2.4.1	Separates existing IECC prescriptive Section R402.2.4 into mandatory and Prescriptive sections; new Section R402.2.4.1 regarding access hatch and door installation is now mandatory	Slightly decreases stringency of FBC-EC Performance and ERI compliance wrt IECC
Mandatory	R402.4	FBC-EC exception allows R-2 and multiple attached single-family dwellings to comply with commercial code air leakage testing requirements	Difficult to assess without field data
Mandatory	R402.4.1.2	Building air leakage rate max ACH50 = 5 in IECC vs. 7 in FBC-EC	Decreases stringency of FBC-EC compliance wrt IECC
Mandatory	R402.4.1.2	FBC-EC building air leakage tester approval requirement	Possibly increases stringency of FBC-EC compliance wrt IECC
Mandatory	R402.4.1.2	FBC-EC building air leakage testing exemption for additions	Little or no impact (in applicable cases)
Mandatory	R402.4.2	IECC removed UL 907 listing and labeling requirement for the doors of masonry fireplaces	May slightly increase stringency of FBC-EC wrt IECC (in applicable cases)
Mandatory	Table R402.4.1.1	2021 IECC adds rim joist junction air sealing requirements and insulation installation clarification	Slightly decreases stringency of FBC-EC compliance wrt IECC (depending on current practice)

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Mandatory	Table R402.4.1.1	2021 IECC revises section name to clarify foundation types that are included, and revises and adds to Air Barrier Criteria and Insulation Installation Criteria to clarify foundation related requirements	Slightly decreases FBC-EC stringency wrt IECC (depending on current practice)
Mandatory	Table R402.4.1.1	2021 IECC revises and adds Air Barrier Criteria and Insulation Installation Criteria to clarify shaft and penetration related requirements	Slightly decreases FBC-EC stringency wrt IECC (depending on current practice)
Mandatory	Table R402.4.1.1	2021 IECC adds Insulation Installation Criteria to narrow cavity requirements	Slightly decreases FBC-EC stringency wrt IECC (depending on current practice)
Mandatory	Table R402.4.1.1	2021 IECC adds Air Barrier Criteria to garage separation requirements	Slightly decreases FBC-EC stringency wrt IECC (depending on current practice)
Mandatory	Table R402.4.1.1	2021 IECC revises and adds Air Barrier Criteria and Insulation Installation Criteria to clarify recessed lighting related requirements	Slightly decreases FBC-EC stringency wrt IECC (depending on current practice)
Mandatory	Table R402.4.1.1	2021 IECC adds “or other obstructions” to Plumbing and Wiring section name, adds Air Barrier Criteria and revises Insulation Installation Criteria to clarify these requirements	Slightly decreases FBC-EC stringency wrt IECC (depending on current practice)
Mandatory	Table R402.4.1.1	2023 FBC-EC modifies the Electrical/phone box on exterior walls section name, revises Air Barrier Criteria and adds Insulation Installation Criteria to clarify these requirements	Slightly increases FBC-EC stringency wrt IECC (depending on current practice)
Mandatory	R402.4.1.2	IECC adds square footage based air leakage rate testing alternative for attached single and multifamily building	Unknown

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
		dwelling units and buildings or dwelling units that are 1500 square feet or smaller, and also clarifies mechanical ventilation requirements	
Mandatory	R402.4.1.2	2021 IECC adds air leakage testing exception for certain heated, attached and detached private garages	May slightly increase FBC-EC stringency wrt IECC (in applicable cases)
Mandatory	R402.4.1.2	IECC sets maximum building air leakage rate in all Climate Zones to 5 ACH50; also adds decimal place to ACH50 values ("5" to "5.0") to clarify intent	Decreases stringency of FBC-EC wrt IECC
Mandatory	R402.4.1.2	2023 FBC-EC adds clarification that whole-house mechanical ventilation is required for dwelling units with air leakage rates less than 3 ACH50, in accordance with provided code sections	May slightly increase FBC-EC stringency wrt IECC (in applicable cases and depending on typical practice)
Mandatory	R402.4.1.2	2023 FBC-EC adds testing requirement clarification that if an attic is both air sealed and insulated at the roof deck, interior access doors and hatches between the conditioned space volume and the attic must be opened during the test and the volume of the attic must be added to the conditioned space volume for purposes of reporting infiltration volume and calculating the air leakage of the home	May slightly increase FBC-EC stringency wrt IECC (in applicable cases and depending on typical practice)
Mandatory	R402.4.1.2	FBC-EC includes exception that testing is not required for additions, alterations, renovations or repairs of the building thermal envelope of existing buildings in which the new construction is less than	Slightly decreases FBC-EC stringency wrt IECC (in applicable cases)

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
		85 percent of the building thermal envelope	
Mandatory	R403.3.1	IECC changes section from Prescriptive to Mandatory and changes duct location criteria from “attic” to “outside conditioned space”, so 3+ inch diameter ducts outside of conditioned space must be insulated to R-8 for all compliance options, vs. FBC-EC which only requires R-8, 3+ inch ducts for Prescriptive compliance and if located in the attic	Slightly decreases FBC-EC Prescriptive stringency wrt IECC in some cases (homes with ducts in crawlspaces or other non-attic unconditioned space)
Mandatory	R403.3.1	IECC adds mandatory insulation requirements for ducts buried beneath a building; 2023 FBC-EC has same requirement, but only for Prescriptive compliance	None or decreases FBC-EC stringency slightly wrt IECC in applicable Performance and ERI cases
Mandatory	FBC-EC R403.3.2 IECC R403.3.4	FBC-EC duct tightness tester approval requirement	May slightly increase FBC-EC stringency wrt IECC but difficult to assess without field data
Mandatory	FBC-EC R403.3.3 IECC R403.3.5	FBC-EC includes a duct testing requirement exception for Performance compliance with default leakage ducts	Slight decrease FBC-EC stringency wrt IECC for Performance method.
Mandatory	FBC-EC R403.3.3 IECC R403.3.5	IECC removes exception that had exempted projects with ducts and air handlers located entirely within the building thermal envelope from the duct testing requirement	Decreases FBC-EC stringency wrt IECC (in applicable cases)
Mandatory	FBC-EC R403.3.3 IECC R403.3.5	IECC duct testing exception text reads: “A duct air-leakage test shall not be required for ducts serving ventilation systems that are not integrated with ducts serving heating or cooling systems.”	FBC-EC does not state it, but may interpret it the same

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Mandatory	FBC-EC R403.5.4 IECC R403.5.3	IECC clarifies that the drain water heat recovery requirements in this section only apply where a drain water heat recovery unit is installed, and makes the section mandatory; FBC-EC is not clear whether this section is mandatory or Prescriptive	May slightly decrease FBC-EC stringency wrt IECC in applicable Performance and ERI compliance cases (depending on if FBC-EC section is mandatory or not)
Mandatory	FBC-EC R403.5.5	FBC-EC includes heat trap requirement for storage water heaters	Slightly increases FBC-EC stringency wrt IECC (in applicable cases)
Mandatory	FBC-EC R403.5.6	FBC-EC includes several water heater subsections not included in the IECC that specify controls, shut down, and efficiency requirements	May slightly increase FBC-EC stringency wrt IECC (in applicable cases)
Mandatory	FBC-EC R403.6.1 IECC R403.6.2	2018 IECC and 2023 FBC-EC include WHMV efficacy exception for air handlers that are integral to HVAC equipment, just requiring them to use an electronically commutated motor; 2021 IECC removes this exception and adds air-handler integrated to tested and listed HVAC equipment minimum efficacy requirement of 1.2 cfm/watt	Somewhat increases FBC-EC stringency wrt IECC (in applicable cases)
Mandatory	FBC-EC R403.6.2	FBC-EC provides mechanical ventilation criteria, including maximum rates, prohibited make-up air sources, and insulation requirements	May slightly increase FBC-EC stringency wrt IECC (in applicable cases and depending on typical practice)
Mandatory	IECC R403.6.3	New IECC section requiring testing of mechanical ventilation system flow rates, with exception for certain kitchen range hoods	May improve intent; impact on energy unknown
Mandatory	R403.7	Additional FBC-EC heating and cooling equipment sizing requirements	Slightly increases FBC-EC stringency wrt IECC (depending on typical practice)

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Mandatory	R403.10.3	Increased percentage of pool and spa heating from heat pump or on-site renewables for IECC cover exemption	Slightly decreases FBC-EC stringency wrt IECC (in applicable cases)
Mandatory	FBC-EC R403.10.4	FBC-EC includes efficiency requirements for gas- and oil-fired pool and spa heaters	May slightly increase FBC-EC stringency wrt IECC (in applicable cases and depending on typical practice)
Mandatory	FBC-EC R403.10.5	FBC-EC includes efficiency requirements for heat pump pool heaters	May slightly increase FBC-EC stringency wrt IECC (in applicable cases and depending on typical practice)
Mandatory	FBC-EC R403.13	FBC-EC includes requirements for dehumidifiers	Slightly increases FBC-EC stringency wrt IECC (in applicable cases)
Mandatory	FBC-EC R403.13.1	FBC-EC includes requirements for ducted dehumidifiers	Slightly increases FBC-EC stringency wrt IECC (in applicable cases)
Mandatory	IECC R404.1.1	With several exceptions (including for detached one and two family dwellings and compliance with Section R404.1), this new IECC section requires connected exterior lighting for residential buildings to comply with commercial exterior lighting Section C405.4	None or somewhat decreases FBC-EC stringency wrt IECC
Mandatory	IECC R404.2	With several exceptions, new mandatory IECC interior lighting controls section requires either a dimmer, occupant sensor or other control for permanently installed lighting fixtures	Somewhat decreases FBC-EC stringency wrt IECC
Prescriptive	FBC-EC Table R402.1.4 IECC Table R402.1.2	IECC decreases the maximum ceiling <i>U</i> -factor in Climate Zones 2 and 3 from 0.030 to 0.026	Decreases FBC-EC Climate Zone 2 Prescriptive stringency wrt IECC

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Prescriptive	FBC-EC Table R402.1.2 IECC Table R402.1.3	IECC increases the minimum ceiling <i>R</i> -value in Climate Zones 2 and 3 from R-38 to R-49	Decreases FBC-EC Climate Zone 2 Prescriptive stringency wrt IECC
Prescriptive	FBC-EC R402.1.2 IECC Table R402.1.3	FBC-EC Table R402.1.2 maximum <i>U</i> -factor increase for impact rated fenestration in Climate Zone 2	Decreases FBC-EC Climate Zone 2 Prescriptive stringency wrt IECC (in applicable cases)
Prescriptive	R402.2.4	IECC provides insulation level exceptions for horizontal pull-down stair type access hatches	Slightly increases stringency of FBC-EC compliance wrt IECC (in applicable cases)
Prescriptive	FBC-EC R402.2.9 IECC R402.2.8	IECC unconditioned basement wall insulation exception includes more requirements than the FBC-EC	Slightly decreases stringency of FBC-EC compliance wrt IECC (in applicable cases)
Prescriptive	FBC-EC R402.2.13 IECC R402.2.12	In IECC, heated garages must now also meet this section's sunroom requirements and are also eligible for sunroom thermal isolation exception	Slightly decreases FBC-EC stringency (in applicable cases)
Prescriptive	R402.3.5	In IECC, heated garages must now also meet this section's sunroom fenestration requirements and are also eligible for sunroom thermal isolation exception	Slightly decreases FBC-EC stringency (in applicable cases)
Prescriptive	IECC R403.3.2	2021 IECC clarifies existing IECC option that allows ductwork to be considered as being inside conditioned space, and adds two new options-- for ductwork in floor cavities and within exterior walls	Slightly increases FBC-EC stringency wrt IECC in some cases
Prescriptive	IECC R403.3.3	IECC Prescriptive stipulations for ducts buried within ceiling insulation	Little or no stringency impact anticipated (in applicable cases)
Prescriptive	FBC-EC R403.3.3	IECC adds Prescriptive compliance total duct leakage limit of 8 cfm/100 sq. ft. for cases in which all ducts and air	Somewhat decreases FBC-EC stringency compliance wrt IECC (in applicable cases)

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
	IECC R403.3.6	handlers are located entirely within the building thermal envelope	
Prescriptive	FBC-EC R403.3.6	Air handlers not allowed in attics for FBC-EC Prescriptive compliance	Somewhat increases FBC-EC stringency compliance wrt IECC (in applicable cases)
Prescriptive	FBC-EC R403.7.2	FBC-EC prohibits electric resistance from being primary heating used in Climate Zone 2 for Prescriptive compliance	Increases FBC-EC stringency compliance wrt IECC (in applicable cases)
Prescriptive	IECC R404.3	New Prescriptive IECC section requires specified automatic shut off controls where total permanent installed exterior lighting power is greater than 30 watts	Somewhat decreases FBC-EC stringency wrt IECC (in applicable cases)
Performance	FBC-EC Table R402.1.4 IECC Table R402.1.2	Maximum IECC ceiling <i>U</i> -factor in Climate Zones 2 and 3 is reduced from 0.030 to 0.026	Decreases FBC-EC stringency wrt IECC (increases stringency of IECC std. reference design)
Performance	IECC R402.5	Maximum IECC area-weighted average fenestration SHGC permitted for Performance compliance in Climate Zones 0 through 3 reduced from 0.50 to 0.40	No impact because of FBC-EC trade-offs
Performance	IECC R402.5	IECC adds fenestration <i>U</i> -factor and SHGC exception for storm shelters in compliance with ICC 500	No impact because of trade-offs
Performance	IECC R405.2	Per Table R405.2 reference, 2021 IECC Performance compliance requires total leakage duct testing (but does not stipulate a maximum Performance compliance duct leakage)	May slightly decrease stringency of FBC-EC compliance compared with IECC
Performance	IECC R405.2	IECC requires Performance compliance project envelope efficiency to meet or exceed	No impact because of FBC-EC trade-offs

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
		residential 2009 IECC Table 402.1.1 or Table 402.1.3	
Performance	FBC-EC R405.2.1	FBC-EC requires space permitting Performance compliance minimum ceiling insulation level of R-19	No impact because of FBC-EC trade-offs
Performance	FBC-EC R405.2.2	FBC-EC subsection clarifies that Performance building air leakage testing must verify the leakage rate used for the proposed design	Likely slightly increases stringency of FBC-EC compliance compared with IECC (in applicable cases)
Performance	FBC-EC R405.2.3	FBC-EC subsection clarifies when Performance compliance duct air leakage testing is required and that testing must verify the leakage rate used for the proposed design	Likely slightly increases stringency of FBC-EC compliance compared with IECC (in applicable cases)
Performance	FBC-EC R403.3.3	FBC-EC exception clarifies when Performance compliance duct air leakage testing is required and that testing must verify the leakage rate used for the proposed design	Same as item directly above, likely slightly increases stringency of FBC-EC compliance compared with IECC (in applicable cases)
Performance	FBC-EC R405.3 IECC R405.2	Performance-based compliance calculation methodology	See Simulations section of final report
Performance	FBC-EC R405.3	2023 FBC-EC increases stringency of performance compliance method by 5%	Increases FBC-EC stringency to now match one of the 2021 IECC additional efficiency requirements
Performance	FBC-EC R405.5 IECC R405.4	For R-2 and R-4 residences and townhouses, the limit for the FBC-EC's common wall area dependent "F" term used in the equation to determine standard referenced design fenestration area varies from the limit in the IECC	Somewhat decreases stringency of FBC-EC compliance wrt IECC (in applicable cases)
Performance	FBC-EC R405.5 IECC R405.4	FBC-EC Table R405.5.2(1) has a standard reference design air	Decreases FBC-EC stringency wrt IECC

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
		exchange rate of ACH50 = 7 vs. IECC's rate of ACH50 = 5	
Performance	FBC-EC R405.5 IECC R405.4	2021 IECC clarifies that the standard reference design's air exchange rate mechanical ventilation system type is the same as in the proposed design	None or slightly changed stringency for Performance projects
Performance	FBC-EC R405.5 IECC R405.4	As a clarification, 2021 IECC adds "system type" to definition of mechanical ventilation sections' minimum fan efficacy term used to calculate standard reference design annual vent fan energy use	No stringency impacts likely
Performance	FBC-EC R405.5 IECC R405.4	IECC specifies the same proposed and standard reference design heating and cooling equipment efficiencies while the 2023 FBC-EC specifies federal minimum standards applicable January 2023 for its standard reference design	FBC-EC allows equipment efficiency trade-offs while IECC does not
Performance	FBC-EC R405.5 IECC R405.4	FBC-EC specifies service water heating standard reference and proposed design use and energy consumption according to ANSI/RESNET/ICC Standard 301, while IECC specifies same proposed and standard reference design water heating efficiency	Minimal impact for use of Std. 301 for base code storage type system; will vary for other system types and measures; also FBC-EC allows water heating equipment efficiency trade-offs while IECC does not
Performance	FBC-EC R405.5 IECC R405.4	2021 IECC Table R405.4.2(1) stipulates the standard reference design duct insulation be R-8 for ducts \geq three inches in diameter and outside of conditioned space (per Section R403.3.1), while the FBC-EC stipulates R-6 standard reference design ducts	Somewhat decreases stringency of FBC-EC wrt IECC in most Performance compliance cases

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Performance	FBC-EC R405.5 IECC R405.4	2021 IECC Table R405.4.2(1) stipulates the standard reference design duct location be the same as the proposed design, while the FBC-EC stipulates the reference design duct location to be entirely within the building thermal envelope	Somewhat increases stringency of FBC-EC wrt IECC in most Performance compliance cases
Performance	FBC-EC R405.5 IECC R405.4	FBC-EC includes Dehumidification Systems section in Table R405.5.2(1) while the IECC only includes dehumidifiers if a mechanical ventilation system with latent heat recovery is utilized (see next item below); other differences include the FBC-EC having two dehumidifier reference efficiencies depending on total capacity, and separate proposed design specifications while the IECC uses standard reference design specifications for the proposed design	None or slightly changed stringency (for applicable projects)
Performance	FBC-EC R405.5 IECC R405.4	2021 IECC adds dehumidistat and dehumidifier standard reference and proposed design specifications for proposed designs with mechanical ventilation systems with latent heat recovery; FBC-EC already includes dehumidistat specifications with same reference setpoint turn on (differences include IECC section being specifically for mechanical ventilation systems, and FBC-EC has two dehumidifier reference efficiencies depending on total capacity vs. one reference efficiency in the IECC)	None or slightly changed stringency (for applicable projects)

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Performance	FBC-EC R405.5 IECC R405.4	IECC Table R405.4.2(1) footnote “a” continues to allow the building air leakage testing requirement to be at the discretion of the code official	May slightly increase stringency of FBC-EC wrt IECC in some cases
Performance	FBC-EC R405.5 IECC R405.4	FBC-EC Table R405.5.2(1) footnote “e” adds clarification of type of heating system to be used for projects without proposed heating systems	Little or no stringency difference
Performance	FBC-EC R405.5.3.1	FBC-EC requires glazing areas to include manufacturer’s frame area	May slightly increase stringency of FBC-EC wrt IECC (depending on typical practice)
Performance	FBC-EC R405.5.3.1	FBC-EC allows area of an existing window enclosed by addition to be subtracted from addition’s glazing area for same overhang and orientation	Slightly decreases stringency of FBC-EC wrt IECC (in applicable cases)
Performance	FBC-EC R405.5.3.2	FBC-EC includes Performance compliance window overhang specifications	May slightly increase stringency of FBC-EC wrt IECC (depending on typical practice)
Performance	FBC-EC R405.5.3.3	FBC-EC stipulates how glass area in doors is to be calculated	Slightly increases stringency of FBC-EC wrt IECC (in applicable cases and depending on typical practice)
Performance	FBC-EC R405.5.3.4	FBC-EC includes maximum fenestration SHGC overhang depth alternative	Little or no impact (in applicable cases)
Performance	FBC-EC R405.6.3.1	FBC-EC includes proposed home EF and UEF adjustment factors for instantaneous water heaters	Somewhat increases stringency of FBC-EC wrt IECC (in applicable cases)
Performance	FBC-EC R405.7	FBC-EC Performance compliance installation criteria for radiant barrier, cool roof, cross ventilation, whole house fan, ceiling fan, heat recovery unit, and heat pump water heater credit options	Slightly increases stringency of FBC-EC wrt IECC (in applicable cases and depending on typical practice)

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Performance	FBC-EC R405.7.1	Increases operative surface emissivity limit for sheet radiant barriers from 0.06 to 0.10	May slightly decrease stringency of FBC-EC wrt IECC (in applicable cases)
Energy Rating Index	R406.2	FBC-EC continues to include 2015 IECC Section R403.5.3 hot water pipe insulation requirements for ERI compliance, while the 2021 IECC no longer includes this requirement for ERI compliance	No impact because of trade-offs
Energy Rating Index	IECC Table R406.2	2021 IECC Table R406.2 includes a requirement that duct insulation be R-8 for ducts \geq three inches in diameter and outside of conditioned space (per reference to Section R403.3.1), while the FBC-EC stipulates a minimum duct insulation of R-6 for ducts not inside the building thermal envelope (unless site-wrapped)	No impact because of trade-offs
Energy Rating Index	FBC-EC R406.3 IECC R406.4	Energy Rating Index details including standard reference design ventilation rate differences	Difficult to assess
Energy Rating Index	IECC R406.3.1	New 2021 IECC subsection replaces building thermal envelope requirements for cases in which on-site renewables are not included with a total building thermal envelope UA requirement; intended to increase thermal “backstop” flexibility	No impact because of trade-offs
Energy Rating Index	IECC R406.3.2 and R406.4	New 2021 IECC subsection increases stringency of building thermal envelope requirements for cases in which on-site renewables are included, specifying those in 2018 IECC (instead of those in 2015 IECC), and in Section	Slightly decreases stringency of FBC-EC wrt IECC

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
		R406.4, limits the reduction in energy use of the rated design from on-site renewables to 5 percent of the total energy use	
Energy Rating Index	FBC-EC R406.4 IECC R406.5	Maximum Energy Rating Index in FBC-EC is 58 vs. 52 in IECC for the two Florida Climate Zones	Decreases stringency of FBC-EC wrt IECC
Energy Rating Index	FBC-EC R406.4 IECC R406.5	Added 2021 IECC language specifies that both the proposed design and confirmed built dwelling unit be shown to meet ERI requirements	None or somewhat decreases stringency of FBC-EC wrt IECC depending on typical practice
Energy Rating Index	FBC-EC R406.5 IECC R406.6	FBC-EC requires that verification be completed by an approved third party in accordance with Florida statute based Building Energy Efficiency Rating System while IECC only requires verification by an approved third party or authority having jurisdiction	None or slightly increases stringency of FBC-EC depending on typical practice
Energy Rating Index	FBC-EC R406.6.2 IECC R406.7.2	2021 IECC stipulates that compliance documentation be created and submitted for both the proposed design and confirmed built dwelling unit, and moves expanded required information to proposed and confirmed subsections	None or somewhat decreases stringency of FBC-EC wrt IECC depending on typical practice
Energy Rating Index	IECC R406.7.3	New IECC section requires that where onsite renewable energy is included in the calculation of an ERI, the code official must be provided with either 1) substantiation that the associated RECs are owned by, or retired on behalf of, the homeowner, or 2) a contract that conveys the RECs associated with the onsite renewable energy to the homeowner, or conveys an equivalent quantity of RECs	Slight reduction in overall community energy use for applicable IECC ERI projects as these RECs won't be used for offsetting others

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Additional Efficiency Package Options	IECC R408.2	<p>associated with other renewable energy to the homeowner</p> <p>New IECC section provides additional efficiency package options referenced in new Section R401.2.5 (discussed above):</p> <ul style="list-style-type: none"> - R408.2.1 provides an enhanced envelope performance option - R408.2.2 provides a more efficient HVAC equipment performance option - R408.2.3 provides a reduced energy use in service water-heating option - Section R408.2.4 provides a more efficient duct thermal distribution system option - Section R408.2.5 provides an improved air sealing and efficient ventilation system option 	<p>In conjunction with Section R401.2.5, decreases FBC-EC Prescriptive and Energy Rating Index stringency wrt IECC; for Performance compliance, the 2023 FBC-EC includes an equivalent 5% stringency reduction, so no impact for Performance compliance</p>
CHAPTER 5 EXISTING BUILDINGS			
General	FBC-EC R501.7.2	New FBC-EC subsection prohibits electric resistance from being the primary space heating system type used for complete central equipment replacements in Climate Zone 2	Increases FBC-EC stringency wrt IECC (in applicable equipment replacement cases)
Additions	FBC-EC R502.1.1.1 IECC R502.3.1	Renumbered IECC section exempts new envelope assemblies that are part of an addition from the requirements of Section R402.4.1.2 (air leakage testing)	None or minor impact in applicable cases
Additions	FBC-EC R502.1.1.2 IECC R502.3.2	Renumbered IECC Prescriptive compliance section now states "HVAC ducts newly installed as part of an addition..." must comply with Section R403 instead of stating "New	May slightly decrease or increase FBC-EC stringency wrt IECC

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
		heating, cooling and duct systems that are part of the addition..." must comply with Section R403; the 2023 FBC-EC only requires compliance with R403.1, R403.2, R403.3, R403.5 and R403.6, but still applies the requirement to "New heating, cooling and duct systems"	
Additions	FBC-EC R502.1.1.2 IECC R502.3.2	IECC Prescriptive existing system duct testing exception for additions formerly limited to ducts extending less than 40 linear feet in unconditioned spaces; now does not include a duct length limit (while FBC-EC still includes the 40 foot limit)	Slightly increases FBC-EC stringency wrt IECC (in applicable cases)
Alterations	FBC-EC and IECC R503.1.2	Renumbered IECC Prescriptive compliance section now states "HVAC ducts newly installed as part of an alteration..." must comply with Section R403 instead of "New heating, cooling and duct systems that are part of the alteration..." must comply with Section R403; the 2023 FBC-EC only requires compliance with R403.1, R403.2, R403.3, R403.5 and R403.6, but still applies the requirement to "New heating, cooling and duct systems"	May slightly decrease or increase FBC-EC stringency wrt IECC
Alterations	FBC-EC and IECC R503.1.2	IECC Prescriptive existing system duct testing exception for alterations formerly limited to ducts extending less than 40 linear feet in unconditioned spaces; now does not include a duct length limit (while FBC-EC still includes the 40 foot limit)	Slightly increases FBC-EC stringency wrt IECC (in applicable cases)
FBC-EC APPENDIX RC CALCULATION OF END USE ENERGY LOADS			

Provision Type	Code Section	Difference Summary	Anticipated Effect on FBC-EC Stringency wrt IECC
Calculation of end use energy loads for code compliance determination	FBC-EC Table RC-1(1)	2023 FBC-EC updates Performance compliance end use load calculation coefficients 'a' and 'b' that apply to Florida heating and cooling equipment	Slightly increases FBC-EC Performance stringency wrt IECC