

Florida Building Code, Seventh Edition (2020) - Energy Conservation C401.2 (1)

ASHRAE 90.1 2016 Appendix G

Applications for compliance with the Florida Building Code, Energy Conservation shall include:

- This Checklist
- The full compliance report generated by the software that contain the project summary, compliance summary, certifications and detailed component compliance reports.
- Boxes appropriately checked in the Mandatory Section of the compliance report
- Input Report *

*Warning - Input file (aka ECB Checklist) not generated. Append ECB Checklist to Florida Compliance Report.

This file can be generated via the following action in the navigator: Results > Checklist Report > ECB Checklist Report

Project Summary

Description:

Owner: Owner

Address 1: 123 Main Street

Address 2:

City: Miami

State: Florida

Zip:

Class:

Jurisdiction:

Conditioned Area: 22500.0

Conditioned & Unconditioned Area 22500.0

No of Stories: 0.0

Area Entered from Plans: 0.0

Permit No: 123456789

Building Rotation: 0.0 Degrees Anticlockwise from North

Certifications

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

Prepared By:

Building Official:

Date:

Date:

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

Owner Agent:

Date:

If required by Florida law, I hereby certify (*) that the system design is in compliance with the Florida Energy Efficiency Code

Architect:

Reg No:

Electrical Designer:

Reg No:

Lighting Designer:

Reg No:

Mechanical Designer:

Reg No:

Plumbing Designer:

Reg No:

(*) Signature is required where Florida Law requires design to be performed by registered design professionals.

Typed names and registration numbers may be used where all relevant information is contained on signed/sealed plans.

Florida Compliance Report

Project Name: A1 Bldg (New Cons., Office Occupancy) FL Code			
Project Address: 123 Main Street, , Miami, Florida		Date: 16-Nov-2020	
Designer of Record: Designer	Email:	Telephone:	
Contact Person: Owner	Email:	Telephone:	
City: Miami		Principal Heating Source	
Weather Data: USA_FL_Miami.Intl.AP.722020_TMY3.epw		<input checked="" type="checkbox"/> Fossil Fuel <input checked="" type="checkbox"/> Electricity <input type="checkbox"/> Solar/site recovered <input type="checkbox"/> Other	

Space Summary

Building Use	Conditioned Area (ft²)	Unconditioned Area (ft²)	Total (ft²)	BPF (Table 4.2.1.1)
SPACE: Office - Open plan	22500.0	0	22500.0	0.62
Total/Total Area Weighted BPF	22500.0	0	22500.0	0.62

Advisory Messages

	Proposed Building Design	Budget Building	Difference Proposed/Budget
Number of hours heating loads not met (system/plant)	0.0	0.0	0.0
Number of hours cooling loads not met (system/plant)	0.0	0.0	0.0
Number of warnings	-	-	-
Number of errors	-	-	-
Number of defaults overridden			

Florida Compliance Report

Project Name: A1 Bldg (New Cons., Office Occupancy) FL Code		
Contact Person: Designer	Email:	Telephone:

Energy and Cost Summary by Fuel Type*

Regulated Energy	Energy Type	Proposed Building		Baseline Building	
		Energy (kBtu/yr)	Energy Cost (£/yr)	Energy (kBtu/yr)	Energy Cost (£/yr)
Lighting	Electricity	19,270.6		19,077.9	
Space heating	Gas	359.1		0	
Space heating	Electricity	0		104.4	
Space cooling	Electricity	24,462.9		84,825.6	
Fans	Electricity	5,733.3		14,357.6	
Heat rejection	Electricity	1,561.5		5,414.4	
Total Regulated Electric Energy		51,028.3	16,118.3	123,779.9	38,933.8
Total Regulated Gas Energy		359.1	45.6	0	0
Total Regulated Energy		51,387.4	16,163.9	123,779.9	38,933.8
Unregulated Energy					
Office equipment	Electricity	28,905.9		27,488.0	
Total Unregulated Electric Energy		28,905.9	9,385.3	27,488.0	9,096.4
Total Unregulated Gas Energy		0	0	0	0
Total Unregulated Energy		28,905.9	9,385.3	27,488.0	9,096.4
Total Energy		80,293.3	25,549.2	151,267.9	48,030.3

Performance Cost Index Target

Variable	Description	Value	Source
BBUEC	Baseline Building Unregulated Energy Cost (£)	9,096.4	Energy and Cost Summary by Fuel Type Table
BBREC	Baseline Building Regulated Energy Cost (£)	38,933.8	Energy and Cost Summary by Fuel Type Table
BBP	Baseline Building Performance (Energy Cost) (£)	48,030.3	Energy and Cost Summary by Fuel Type Table
BPF	Total Area Weighted Building Performance Factor	0.62	Space Summary Table
PC_t	Performance Cost Index Target	0.69	[BBUEC + (BBREC × BPF)]/BBP

Energy Summary by End Use*

	Proposed Building		Budget Building		Performance Cost Index (PCI)
	Energy Use (kBtu/yr)	Energy Cost (£/yr)	Energy Use (kBtu/yr)	Energy Cost (£/yr)	Proposed Cost / Baseline Cost
Electricity	79,934.2	25,503.6	151,267.9	48,030.3	0.53
Gas	359.1	45.6	0	0	0
Total ex Onsite Generation	80,293.3	25,549.2	151,267.9	47,966.79	0.53
Total inc Onsite Generation	80,293.3	25,549.2	151,267.9	47,966.79	0.53
'Total inc Onsite Generation' PCI less than or equal to PCI _t ? (Yes/No)					Yes

* These results use assumptions for showing compliance during a typical year; actual energy costs may be substantially different.

Notes

The results are based on 8760 simulated hours
 5 Rooms included in the unmet load hours check

Lighting Controls

Room	Thermal Template	Area	Result
Room 008	SPACE: Office - Open plan	188.1	FAILED
Room 017	SPACE: Office - Open plan	188.1	FAILED
Room 016	SPACE: Office - Open plan	188.1	FAILED
Room 010	SPACE: Office - Open plan	1337.8	FAILED
Room 015	SPACE: Office - Open plan	188.1	FAILED

HVAC System Compliance

a Packaged Single Zone Air Conditioner [AHU 1]					
Type	Component	Capacity (kBtu/h)	Design COP/ Efficiency	Min COP/ Efficiency	Compliance
Heating	Furnace - fixed AFUE accounting for on-off cycles, rather than steady-...	269.57	0.86	0.8	PASSES
Cooling	DX Cooling - Pkg Sys 65-135 kBtu/h COP 3.88 EERnf 13.2 (EER 11.0 per 9...	71.99	3.88	3.22	PASSES
Cooling	DX Cooling - Pkg Sys 65-135 kBtu/h COP 3.88 EERnf 13.2 (EER 11.0 per 9...	87.59	3.88	3.22	PASSES
Cooling	DX Cooling - Pkg Sys 65-135 kBtu/h COP 3.88 EERnf 13.2 (EER 11.0 per 9...	82.17	3.88	3.22	PASSES
Cooling	DX Cooling - Pkg Sys 65-135 kBtu/h COP 3.88 EERnf 13.2 (EER 11.0 per 9...	444.2	3.88	2.87	PASSES
Cooling	DX Cooling - Pkg Sys 65-135 kBtu/h COP 3.88 EERnf 13.2 (EER 11.0 per 9...	76.03	3.88	3.22	PASSES



Plant Equipment Compliance

Description	Capacity (kBtu/h)	Design COP/ Efficiency	Min COP/ Efficiency	Compliance
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DHW Equipment Compliance

Description	Capacity (kBtu/h)	Design COP/ Efficiency	Min COP/ Efficiency	Compliance
Baseline SHW heating plant (fossil fuel) - set Eff. per 90.1 table 7.8; set SL i...	1000.0	0.8	0.82	FAILED

Topic	Section	Component	Description	Yes	N/A	Exempt
1. To be checked by Designer or Engineer						
Insulation	C303.2	Envelope	Below-grade wall insulation per manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2	Envelope	Slab edge insulation installed per manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2	Envelope	Above-grade wall insulation installed per manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.3	Envelope	High-albedo roofs satisfy one of the following: 3-year-aged solar reflectance ≥ 0.55 and thermal emittance ≥ 0.75 or 3-year-aged solar reflectance index ≥ 0.64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fenestration	C402.4.4	Envelope	U-factor of opaque doors associated with the building thermal envelope meets requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.12.1	Mechanical	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.12.2	Mechanical	HVAC fan motors not oversized beyond allowable limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.3(8) Table	Mechanical	Heat Rejection Equipment: Minimum Efficiency Requirement meet those listed in Table C403.2.3(8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.7	Mechanical	Exhaust air energy recovery on systems meeting Table C403.2.7(1) and C403.2.7(2).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.3	Mechanical	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.3.2	Mechanical	Economizer operation will not increase heating energy use during normal operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.3.4, C403.3.4.1, C403.3.4.2, C403.3.1	Mechanical	Water economizers provided where required, meet the requirements for design capacity, maximum pressure drop and integrated economizer control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.1	Mechanical	Three-pipe hydronic systems using a common return for hot and chilled water are not used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.3.1	Mechanical	Hydronic heat pump systems connected to a common water loop meet heat rejection and heat addition requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.3.4	Mechanical	Open-circuit cooling towers having water cooled chiller systems and multiple or variable speed condenser pumps, are designed so that tower cells can run in parallel with larger of flow criteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.2	Mechanical	Service water heating equipment meets efficiency requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.3	Interior Lighting	Exit signs do not exceed 5 watts per face.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Topic	Section	Component	Description	Yes	N/A	Exempt
2. To be checked by Plan Reviewer						
Plan Review	C103.2	Envelope	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C103.2	Mechanical	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C103.2	Mechanical	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C103.2	Interior Lighting	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C103.2	Exterior Lighting	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.5	Envelope	Slab edge insulation depth/length. Slab insulation extending away from building is covered by pavement or ≥ 10 inches of soil.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.6	Project	Radiant heating systems panels insulated to $\geq R-3.5$ on face opposite space being heated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C402.2.6	Mechanical	Thermally ineffective panel surfaces of sensible heating panels have insulation $\geq R-3.5$.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.6	Envelope	Radiant panels and associated components, designed for heat transfer from the panel surfaces to the occupants or indoor space are insulated with a minimum of R-3.5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.7	Envelope	Vestibules are installed on all building entrances . Doors have self-closing devices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.12.3	Mechanical	Fans have efficiency grade (FEG) ≥ 67 . The total efficiency of the fan at the design point of operation $\leq 15\%$ of maximum total efficiency of the fan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.13	Mechanical	Unenclosed spaces that are heated use only radiant heat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.2	Mechanical	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.4.4	Mechanical	Zone isolation devices and controls installed where applicable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SYSTEM_SPECIFIC	C403.2.4.7	Mechanical	Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.5	Mechanical	Hot water boilers supplying heat via one- or two-pipe systems include outdoor setback control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.6.1	Mechanical	Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.1.1	Mechanical	Hydronic and multizone HVAC system controls are VAV fans driven by mechanical or electrical variable speed drive per Table C403.4.1.1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.1.3	Mechanical	Reset static pressure setpoint for DDC controlled VAV boxes reporting to central controller based on the zones requiring the most pressure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2	Mechanical	Temperature reset by representative building loads in pumping systems for chiller and boiler systems >500,000 Btu/h.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.3.2.1	Mechanical	Closed-circuit cooling tower within heat pump loop have either automatic bypass valve or lower leakage positive closure dampers. Open-circuit tower within heat pump loop have automatic valve to bypass all heat pump water flow around the tower.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.4	Mechanical	Hydronic systems greater than 500,000 Btu/h designed for variable fluid flow.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.5	Mechanical	System turndown requirement met through multiple single-input boilers, one or more modulating boilers, or a combination of single-input and modulating boilers. Boiler input between 1.0 MBtu/h and 5 MBtu/h has 3:1 turndown ratio, boiler input between 5.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.6	Mechanical	Chilled water plants with multiple chillers have capability to reduce flow automatically through the chiller plant when a chiller is shut down. Boiler plants with multiple boilers have the capability to reduce flow automatically through the boiler plant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.3 C403.4.3.2	Mechanical	Fan systems with motors >=7.5 hp associated with heat rejection equipment to have capability to operate at 2/3 of full-speed and auto speed controls to control the leaving fluid temperature or condensing temp/pressure of heat rejection device.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.4.5	Mechanical	Multiple zone HVAC systems have supply air temperature reset controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.4.6	Mechanical	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SYSTEM_SPECIFIC	C404.2.1	Mechanical	Gas-fired water-heating equipment installed in new buildings: where a singular piece of water-heating equipment $\geq 1,000$ kBtu/h serves the entire building, thermal efficiency ≥ 90 Et. Where multiple pieces of water-heating equipment serve the building with combined rating is $\geq 1,000$ kBtu/h, the combined input-capacity-weighted-average thermal efficiency, thermal efficiency must be ≥ 90 Et. Exclude input rating of equipment in individual dwelling units and equipment ≤ 100 kBtu/h.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.4	Mechanical	All piping insulated in accordance with section details and Table C403.2.10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.5.1 C404.5.2	Mechanical	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.6.3	Mechanical	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to ≤ 5 minutes after end of heating cycle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.7	Mechanical	A water distribution system having one or more recirculation pumps that pump water from a heated-water supply pipe back to the heated-water source through a cold-water supply pipe shall be a demand recirculation water system. Pumps shall have controls that comply with both of the following: The control shall start the pump upon receiving a signal from the action of a user of a fixture or appliance, sensing the presence of a user of a fixture or sensing the flow of hot or tempered water to a fixture fitting or appliance. The control shall limit the temperature of the water entering the cold-water piping to 104F (40C)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.5.1	Exterior Lighting	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C405.6	Project	Group R-2 dwelling units have separate electrical meters.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C406	Project	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C408.2.2.2	Mechanical	HVAC hydronic heating and cooling coils have means to balance and have pressure test connections.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C408.2.2.2	Mechanical	HVAC hydronic heating and cooling coils have means to balance and have pressure test connections.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Topic	Section	Component	Description	Yes	N/A	Exempt
3. To be checked by Inspector						
Insulation	C303.1	Envelope	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the roof slope is ≤ 3 in 12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.1	Envelope	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fenestration	C303.1.3	Envelope	Fenestration products rated in accordance with NFRC.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fenestration	C303.1.3	Envelope	Fenestration products are certified as to performance labels or certificates provided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2, C402.2.4	Envelope	Floor insulation installed per manufacturer's instructions. Cavity or structural slab insulation installed in permanent contact with underside of decking or structural slabs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2.1	Envelope	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2.1	Envelope	Exterior insulation is protected from damage with a protective material. Verification for exposed foundation insulation may need to occur during Foundation Inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.1.3	Envelope	Non-swinging opaque doors have R-4.75 insulation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.2	Envelope	Skylight curbs are insulated to the level of roofs with insulation above deck or R-5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.2	Envelope	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5	Envelope	Building envelope contains a continuous air barrier that has been tested and deemed to limit air leakage ≤ 0.40 cfm/ft ² .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.1	Envelope	The building envelope contains a continuous air barrier that is sealed in an approved manner and either constructed or tested in an approved manner. Air barrier penetrations are sealed in an approved manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.1.1	Envelope	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.1.2.1	Envelope	The building envelope contains a continuous air barrier that is sealed in an approved manner and material permeability ≤ 0.004 cfm/ft ² . Air barrier penetrations are sealed in an approved manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.1.2.2	Envelope	The building envelope contains a continuous air barrier that is sealed in an approved manner and average assembly air leakage ≤ 0.04 cfm/ft ² . Air barrier penetrations are sealed in an approved manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.2, C402.5.4	Envelope	Factory-built fenestration and doors are labeled as meeting air leakage requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Air Leakage	C402.5.3	Envelope	In Climate Zones 3 through 8, where open combustion air ducts provide combustion air to open combustion space conditioning fuel-burning appliances, the appliances and combustion air openings shall be located outside of the building thermal envelope or enclosed in a room isolated from inside the thermal envelope.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.5, C403.2.4.3	Envelope	Stair and elevator shaft vents have motorized dampers that automatically close.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.5, C403.2.4.3	Envelope	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.6	Envelope	Weatherseals installed on all loading dock cargo doors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.5.8	Envelope	Recessed luminaires in thermal envelope to limit infiltration and be IC rated and labeled. Seal between interior finish and luminaire housing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.1	Mechanical	HVAC systems and equipment design loads calculated in accordance with ANSI/ASHRAE/ACCA Standard 183 or by an approved equivalent computational procedure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.10	Mechanical	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.3	Mechanical	HVAC equipment efficiency verified.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.3	Mechanical	PTAC and PTHP with sleeves 16 in. by 42 in. labeled for replacement only as per Footnote b to Table C403.2.3(3).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.4.1	Mechanical	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.4.1.1	Mechanical	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.1.2	Mechanical	Thermostatic controls have a 5°F deadband.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.1.2	Mechanical	Thermostatic controls have a 5°F deadband.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.1.3	Mechanical	Temperature controls have setpoint overlap restrictions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.2.1, C403.2.4.2.2	Mechanical	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.4.2.3	Mechanical	Systems include optimum start controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.5, C403.2.4.6	Mechanical	Snow/ice melting system sensors for future connection to controls. Freeze protection systems have automatic controls installed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.6.2	Mechanical	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HVAC	C403.2.9	Mechanical	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.9.1.3	Mechanical	Ductwork operating >3 in. water column requires air leakage testing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.1.2	Mechanical	VAV fans have static pressure sensors located so controller setpoint <=1.2 w.c.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.2	Mechanical	Two-pipe hydronic systems using a common distribution system have controls to allow a deadband >=15°F, allow operation in one mode for at least 4 hrs before changeover, and have rest controls to limit heating and cooling supply temperature to <=30 °F.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.3.3	Mechanical	Two-position automatic valve interlocked to shut off water flow when hydronic heat pump with pumping system >10 hp is off.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.4.5, C403.4.4.5.1-4	Mechanical	Zone controls can limit simultaneous heating and cooling and sequence heating and cooling to each zone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.5	Mechanical	Condenser heat recovery system that can heat water to 85°F or provide 60% of peak heat rejection is installed for preheating of service hot water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.6	Mechanical	Hot gas bypass limited to: <=240 kBtu/h - 50% capacity, >240 kBtu/h - 25% capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.3	Mechanical	Heat traps installed on non-circulating storage water tanks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.3	Mechanical	Heat traps installed on supply and discharge piping of non-circulating systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.3	Mechanical	Heat traps installed on supply and discharge piping of non-circulating systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.6.1	Mechanical	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank. System return pipe is a dedicated return pipe or a cold water supply pipe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.6.1, C404.6.2	Mechanical	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.9.1	Mechanical	Pool heaters are equipped with on/off switch and no continuously burning pilot light.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.9.2	Mechanical	Time switches are installed on all pool heaters and pumps.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.9.2	Mechanical	Time switches are installed on all pool heaters and pumps.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.9.3	Mechanical	Vapor retardant pool covers are provided for heated pools and permanently installed spas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.1	Interior Lighting	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.1	Interior Lighting	Occupancy sensors installed in required spaces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Controls	C405.2.1 C405.2.2.3	Interior Lighting	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.2.1	Interior Lighting	Automatic controls to shut off all building lighting installed in all buildings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.3	Interior Lighting	Daylight zones provided with individual controls that control the lights independent of general area lighting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.3, C405.2.3.1, C405.2.3.2	Interior Lighting	Primary sidelighted areas are equipped with required lighting controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.3, C405.2.3.1, C405.2.3.3	Interior Lighting	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.4	Interior Lighting	Separate lighting control devices for specific uses installed per approved lighting plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.2.4	Interior Lighting	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.5	Exterior Lighting	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.4.1	Interior Lighting	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mandatory Additinal Eff	C406.4	Project	Interior lighting in the building shall have the following enhanced lighting controls that shall be located, scheduled and operated in accordance with Section C405.2.2. Luminaires shall be capable of continuous dimming. Luminaires shall be capable of being addressed individually. Where individual addressability is not available for the luminaire class type, a controlled group of not more than four luminaires shall be allowed. Not more than eight luminaires shall be controlled together in a daylight zone. Fixtures shall be controlled through a digital control system that includes the following function: 4.1. Control reconfiguration based on digital addressability. 4.2. Load shedding. 4.3. Individual user control of overhead general illumination in open offices. 4.4. Occupancy sensors shall be capable of being reconfigured through the digital control system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mandatory Additinal Eff	C406.6	Project	Dedicate outdoor air system efficiency package: Buildings with hydronic and/or multiple-zone HVAC systems are equipped with an independent ventilation system designed to provide >= 100-percent outdoor air to each individual occupied space, as specified by	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mandatory Additional Eff	C406.7, C406.7.1	Project	<p>Buildings shall be of the following types to use this compliance method: Group R-1: Boarding houses, hotels or motels. Group I-2: Hospitals, psychiatric hospitals and nursing homes. Group A-2: Restaurants and banquet halls or buildings containing food preparation areas. Group F: Laundries. Group R-2: Buildings with residential occupancies. Group A-3: Health clubs and spas. Buildings showing a service hot water load of 10 percent or more of total building energy loads, as shown with an energy analysis as described in Section C407. The building service water-heating system shall have one or more of the following that are sized to provide not less than 60 percent of hot water requirements, or sized to provide 100 percent of hot water requirements if the building shall otherwise comply with Section C403.4.5. Waste heat recovery from service hot water, heat-recovery chillers, building equipment, process equipment, or a combined heat and power system. Solar water-heating systems.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C408.2.2.1	Mechanical	<p>Air outlets and zone terminal devices have means for air balancing.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Testing	C408.2.3.2	Mechanical	<p>HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Topic	Section	Component	Description	Yes	N/A	Exempt
4. To be checked by Inspector at Project Completion and Prior to Issuance of Certificate of Occupancy						
Post Construction	C303.3, C408.2.5.2	Interior Lighting	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C303.3, C408.2.5.3	Mechanical	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fenestration	C402.4.2.2	Envelope	Skylights in office, storage, automotive service, manufacturing, non-refrigerated warehouse, retail store, and distribution/sorting area have a measured haze value > 90 percent unless designed to exclude direct sunlight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.1	Mechanical	Commissioning plan developed by registered design professional or approved agency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.3.1	Mechanical	HVAC equipment has been tested to ensure proper operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.3.3	Mechanical	Economizers have been tested to ensure proper operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.4	Mechanical	Preliminary commissioning report completed and certified by registered design professional or approved agency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.5.1	Mechanical	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.5.1	Interior Lighting	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.5.3	Mechanical	An air and/or hydronic system balancing report is provided for HVAC systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.5.4	Mechanical	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.3	Interior Lighting	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>