Compliance Checklists for IL 2023 Commercial Stretch Energy Code

HOW TO USE | For use ensuring building compliance with IL 2023 Commercial Stretch Energy Code. Checklists are organized by compliance pathway and supplemental definition and equations are provided in Appendices A and B. All information in this document, including Appendices, comes from the 2024 International Energy Conservation Code (IECC) and the 2023 Illinois Commercial Stretch Energy Code, unless otherwise specified.

INSTRUCTIONS:

Use the section of this checklist that matches the compliance pathway selected by the building's design team. On the relevant checklist, indicate if the design is in compliance by selecting Yes (Y), No (N), or Not Applicable (N/A) next to each requirement. **All items on a checklist must be marked Yes or Not Applicable to be considered in compliance with the stretch code**.

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PRESCRIPTIVE COMPLIANCE PATH C402–C406

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)
Building Thermal Envelope (C402)						
			Wood Frame Wall U-Factor	CZ 4: 0.064 CZ 5: 0.051	Visual inspection at rough-in	C402.1.2, Table C402.1.2
			Wood Frame Wall	CZ 4: R-0 + R-12ci or R-13 + R-3.8ci or R-20 CZ 5: R-0 + R-16ci or R-13 + R-7.5ci or R-20 + R3.8ci or R-27	Visual inspection at rough-in	C402.1.3, Table C402.1.3
			Floor	CZ 4&5: R-14.6ci	Visual inspection at rough-in	C402.1.3, Table C402.1.3
			Floor U-Factor	CZ 4&5: 0.057	Visual inspection at rough-in	C402.1.3, Table C402.1.3
			Below Grade Wall	CZ 4&5: R-7.5ci	Visual inspection at basement installation	C402.1.3, Table C402.1.3
			Basement Wall U-Factor	CZ 4&5: c-0.119	Visual inspection at rough-in	C402.1.3, Table C402.1.3

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PRESCRIPTIVE COMPLIANCE PATH | C402-C406 *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)**
Building Thermal Envelope (C402) *continued*						
			Roof/Ceiling R-Value Insulation Entirely Above Roof Deck	CZ 4&5: R-30ci	Visual inspection at rough-in	C402.1.3, Table C402.1.3
			Roof/Ceiling R-value Metal Buildings	CZ 4&5: R-19 + R-11 LS	Visual inspection at rough-in	C402.1.3, Table C402.1.3
			Roof/Ceiling R-value Attic and Other	CZ 4&5: R-49	Visual inspection at rough-in	C402.1.3, Table C402.1.3
			Roof/Ceiling U-Factor Insulation Entirely Above Roof Deck	CZ 4&5: 0.032	Visual inspection at rough-in	C402.1.2, Table C402.1.2
			Roof/Ceiling U-Factor Metal Buildings	CZ 4&5: 0.035	Visual inspection at rough-in	C402.1.2, Table C402.1.2
			Roof/Ceiling U-Factor Attic and Other	CZ 4&5: 0.021	Visual inspection at rough-in	C402.1.2, Table C402.1.2
			Fixed Fenestration	CZ 4&5: 0.34	Visual inspection	C402.5.1 through C402.5.5; Table C402.5
			Operable Fenestration	CZ 4&5: 0.45	Visual inspection	C402.5.1 through C402.5.5; Table C402.5
			Maximum Envelope Air Infiltration	The measured air leakage shall not be greater than 0.35 cfm/ft^2 of the building thermal envelope area at a pressure differential of 0.3-inch water gauge (75pa) *(See Exceptions on page 3)*	Blower door test by third party	C402.6.2.1

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PRESCRIPTIVE COMPLIANCE PATH | C402-C406 *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)**
Building Thermal Envelope (C402) *continued*						
			Maximum Envelope Air Infiltration *continued*	Exceptions: 1. Buildings larger than 25,000 sq ft in CZ 0-4 2. Where the measured air leakage is between 0.35 and 0.45 cfm/ft^2, the approved third party shall perform a diagnostic evaluation using a smoke tracer or infrared imaging, along with a visual inspection of the air barrier in accordance with ASTM E1186. 3. Buildings or portions of buildings containing R-2 or I-1 occupancies may be tested by an approved third party in accordance with C402.6.2.2, and measured air leakage shall not be greater than 0.27 cfm/ft^2	Blower door test by third party	C402.6.2.1
			Blower Door Test	Blower door test required. Same testing requirements as base code with exceptions: 1. For buildings less than 10,000 sq ft the entire building thermal envelope shall be tested in accordance with ASTM E770, ASTM E3158, ASTM E1827 2. For buildings greater than 50,000 sq ft portions of the building shall be tested by the area-weight.	Blower door test by third party	C402.6.2.1

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PRESCRIPTIVE COMPLIANCE PATH | C402-C406 *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)**
Building Mechanical System (C403)						
			Ventilation	Natural and mechanical ventilation comply with Chapter 4 of the IMC. HVAC systems serving zones over 25,000 sq ft: Zone isolation required. Buildings with a conditioned floor area over 100,000 sq ft served by one or more HVAC systems should be equipped with fault detection and diagnostics systems to monitor HVAC systems' performance.	HVAC inspection	C403.2
			Demand Response	Demand-response-capable thermostats and water heaters required.	HVAC and/ or electrical inspection	C403.4.6; C404.10
			Ventilation Fan Efficacy	Table C403.8.5 shows minimum CFM/Watt	HVAC inspection	C403.8.5
			Duct Testing	All ducts must be tested for tightness	Duct blaster test	C403.13.1
			Duct Tightness	Conditioned: Must meet 4 cfm/100 sq ft	Duct blaster test	C403.13.2.3
			Duct Insulation	Unconditioned spaces: R-6 Conditioned spaces: CZ 4: R-8 CZ 5: R-12	HVAC inspection at rough-in	C403.13.1
			Cavities as Ducts	Supply and return ducts and plenums	Visual inspection	C403.13
			Piping Insulation	Table C403.13.3 (1) or Table C403.13.3 (2)	Plumbing inspection at rough-in	C403.13.3

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PRESCRIPTIVE COMPLIANCE PATH | C402-C406 *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)**
Electrical Power and Lighting Systems (C405)						
			Electric-readiness	Full electrification is not required. Natural gas may still be used, but commercial buildings are required to be electric-ready for water heating, space heating, cooking and clothes drying. Requires new R2 occupancy commercial buildings to include electric infrastructure that would be required for electric appliance installation at time of combustion appliance replacement.	Electric inspection	C405.16
			High Efficacy Lighting	Increased efficiency and controls—Buildings must meet lighting power allowances and lighting controls, specified by building use type.	Electric inspection	C405.3
			EV-readiness *(continued on page 6)*	The number of required EV spaces, EV capable spaces and EV ready spaces complies with Table **C405.14.1** and is based on the total number of automobile parking spaces. R-2 buildings: The number of required EV spaces, EV capable spaces and EV ready spaces complies with Table **C405.14.1,** based on the *total number of dwelling units or the total number of automobile parking spaces, whichever is less.*	Electric inspection	C405.14.1 through C405.14.4
				All **EV-capable** spaces used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.2	Electric inspection	

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PRESCRIPTIVE COMPLIANCE PATH | C402-C406 *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)**
Electrical Power and Lighting Systems (C405) *continued*						
				All **EV-ready** spaces used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.3	Electric inspection	
				All **EVSE spaces** used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.4	Electric inspection	
Additional Efficiency Requirements (C406)						
			Additional Compliance Package	Achieves the minimum number of required efficiency credits from Table C406.1.1(1) based on building occupancy group and climate zone. Exceptions: 1. portions of buildings devoted to manufacturing or industrial use 2. where a building achieves more renewables and load management credits than required.	Credits should be selected and documented in the design phase and inspected for compliance during construction.	C406.1.1, Table C406.1.1
Solar-readiness (Appendix CB)						
			Solar-readiness	Buildings that are five stories or less above grade plane and are oriented between 110 and 270 degrees of true north, or have low slope roofs, have a solar-ready zone on the roof.	Electric inspection	CB103.1 through CB 103.8
				Solar-ready zone complies with Sections CB103.2 through CB103.8.	Electric inspection	

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SIMULATED TOTAL BUILDING PERFORMANCE COMPLIANCE PATH

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)—as required by Table C407.2
			Overall Compliance with Table C407.2(1)		Performance software report	C407.2, able C407.2(1)
			Total Performance Requirement	An annual energy cost that is less than or equal to the percent of the site energy use of the standard reference design calculated in equation 4-32.	Performance software report	C407.2
			Additional Compliance Package	Buildings shall comply with measures from C406.2 to achieve not less than the number of required efficiency credits from table C406.1.1(1) based on building occupancy group and *climate zone* including any energy credit adjustments in accordance with C406.1.1.1	Credits should be selected and documented in the design phase and inspected for compliance during construction.	C406.2
Building Thermal Envelope (C401-C402)						
			Certificate	A permanent building thermal envelope certificate will be posted on a wall in the space where the space conditioning is located, a utility room or another approved location.	Final inspection	C401.3
			Joints Staggered	Continuous, above-deck insulation board located above the roof deck is installed in at least two layers, and the edge joints between each layer of insulation are staggered.	Visual inspection at rough-in	C402.2.1.1
			Skylight curbs	R-5 or the level of the above-deck roof insulation, whichever is less	Visual inspection at rough-in	C402.2.1.2
			Insulation of radiant heating system panels	R-3.5	Visual inspection at rough-in	C402.2.6

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SIMULATED TOTAL BUILDING PERFORMANCE COMPLIANCE PATH *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)—as required by Table C407.2**
Building Thermal Envelope (C401-C402) *continued*						
			Air leakage	The measured air leakage of the building envelope shall not exceed 0.35 cfm/ft² at a pressure differential of 0.3-inch water gauge (75pa) Exception: Buildings over 25,000 sq ft of conditioned floor area	Blower door test by third party	C402.6.2
			Blower Door Test	Blower door test required. Same testing requirements as base code with exceptions: 1. For buildings less than 10,000 sq ft the entire building thermal envelope shall be tested 2. For buildings greater than 50,000 sq ft portions of the building shall be tested by the area-weight.	Blower door test by third party	C402.6.2.1
Mechanical (C403)						
			Calculation of heating and cooling loads	Determined in accordance with ANSI/ASHRAE/ACCA Standard 183	Completed report, HVAC inspection	C403.1.1
			Data centers	Sections 6 and 8 of ASHRAE 90.4	At rough-in	C403.1.2
			Ventilation	Chapter 4 of the IMC	HVAC inspection and commissioning report	C403.2
			Heating and cooling equipment efficiencies	Output capacity is not greater than that of the smallest available equipment size that exceeds the loads calculated in accordance with Section C403.1.1. HVAC equipment meets the minimum efficiency requirements of Tables C403.3.2 (1) through C403.3.2(16).	Completed report, HVAC inspection	C403.3

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SIMULATED TOTAL BUILDING PERFORMANCE COMPLIANCE PATH *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)—as required by Table C407.2**
Mechanical (C403) *continued*						
			Demand Response	Demand-response-capable thermostats and water heaters required.	Electric inspection	C403.4.6; C404.10
			Off-hour controls	Each zone is provided with thermostatic setback controls that are controlled by either an automatic time clock or programmable control system.	HVAC inspection and commissioning report	C403.4.2
			Heating and cooling system controls for operable openings to the outdoors	Doors and all operable openings larger than 40 sqft leading from a conditioned space to the outdoors have automatic controls interlocked with the heating and cooling system.	HVAC inspection and commissioning report	C403.4.7
			Economizer fault detection and diagnostics	Air-cooled unitary direct-expansion units and variable refrigerant flow (VRF) units that are equipped with an economizer include a fault detection and diagnostics system complying with the requirements outlined in Section C403.5.5.	HVAC inspection and commissioning report	C403.5.5
			Ventilation Fan Efficiency	Table C403.8.5	HVAC inspection	C403.8.5
			Large-diameter ceiling fans	Tested and labeled in accordance with AMCA 230 and meet the efficiency requirements of Travel C403.9 and Section C403.9.1	HVAC inspection	C403.9
			Refrigeration equipment performance	Comply with minimum efficiency requirements in Table C403.12.1	Visual inspection	C403.12, except C403.12.3

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SIMULATED TOTAL BUILDING PERFORMANCE COMPLIANCE PATH *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)—as required by Table C407.2**
Mechanical (C403) *continued*						
			Duct Testing	All ducts must be tested for tightness	Duct blaster test	C403.13.1
			Duct Tightness	Conditioned: Must meet 4 cfm/100 sq ft	Duct blaster test	C403.13.2.3
			Duct Insulation	Unconditioned spaces: R-6 Conditioned spaces: CZ 4: R-8 CZ 5: R-12	HVAC inspection at rough-in	C403.13.1
			Cavities as Ducts	Supply and return ducts and plenums	HVAC inspection at rough-in	C403.13
			Piping Insulation	Table C403.13.3 (1) or Table C403.13.3 (2)	Plumbing inspection	C403.13.3
			Mechanical systems located outside of envelope	Snow- and ice-melting systems, roof and gutter deicing controls, and freeze protection system controls have automatic controls configured to shut off systems when the outdoor air temperature is above 40F. Additionally, snow- and ice-melting systems should have automatic controls to shut off the system when pavement temperature is above 50F.	HVAC inspection at rough-in	C403.14
Service water heating (C404)						
			Performance efficiency	Water-heating equipment and hot water storage tanks meet the minimum efficiency requirements in Table C404.2	Plumbing inspection at rough-in	C404.2
			Heat traps	Required for hot water storage tanks	Plumbing inspection at rough-in	C404.3

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SIMULATED TOTAL BUILDING PERFORMANCE COMPLIANCE PATH *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)—as required by Table C407.2**
Service water heating (C404) *continued*						
			Service water heating system piping insulation	Piping is surrounded by uncompressed insulation. Wall thickness of the insulation meets minimum requirements in Table C404.4.1, or as calculated by Equation 4-8 when insulation thermal conductivity is not within range in the table.	Plumbing inspection at rough-in	C404.4
			Heated water supply piping	Flow rate is less than or equal to maximum requirements in C404.5. Maximum allowable pipe length is in accordance with Table C404.5.1.	Plumbing inspection at rough-in	C404.5
			Circulation systems	Heated water circulation systems are provided with a circulation pump. Controls are configured to automatically turn off the pump when water in the circulation loop is at the desired temperature and when there is not a demand for hot water.	Plumbing inspection at rough-in	C404.6
			Drain water heat recovery units	Comply with CSA B55.2. Potable water-side pressure loss is less than 10 psi at maximum design flow. Exception: Group R occupancies shall comply with CSA B55.1.	Plumbing inspection	C404.7
Electrical power and lighting systems (C405)						
			High Efficacy Lighting	Increased efficiency and controls—Buildings must meet lighting power allowances and lighting controls, specified by building use type.	Electric inspection	C405.3

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SIMULATED TOTAL BUILDING PERFORMANCE COMPLIANCE PATH *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)—as required by Table C407.2**
Electrical power and lighting systems (C405) *continued*						
			EV-readiness	The number of required EV spaces, EV capable spaces and EV ready spaces complies with Table **C405.14.1** and is based on the total number of automobile parking spaces. R-2 buildings: The number of required EV spaces, EV capable spaces and EV ready spaces complies with Table **C405.14.1**, based on the total number of dwelling units or the total number of automobile parking spaces, whichever is less.	Electric inspection	C405.14.1 through C405.14.4
				All **EV-capable** spaces used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.2	Electric inspection	
				All **EV-ready** spaces used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.3	Electric inspection	
				All **EVSE spaces** used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.4	Electric inspection	
			Electric-readiness	Full electrification is not required. Natural gas may still be used, but commercial buildings are required to be electric-ready for water heating, space heating, cooking and clothes drying. Requires new R2 occupancy commercial buildings to include electric infrastructure that would be required for electric appliance installation at time of combustion appliance replacement.	Electric inspection	C405.16

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SIMULATED TOTAL BUILDING PERFORMANCE COMPLIANCE PATH *continued*						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)—as required by Table C407.2**
Maintenance information and system commissioning (C408)						
			Building operations and maintenance information	Building operations and maintenance documents are provided to the owner and consist of manufacturers' information, specification and recommendations; programming procedures and data points; narratives; and other means of illustrating to the owner how the building, equipment and systems are intended to be installed, maintained and operated.	Final inspection	C408
Solar-ready requirements (Appendix CB)						
			Solar-readiness	Buildings that are five stories or less above grade plane and are oriented between 110 and 270 degrees of true north, or have low slope roofs, have a solar-ready zone on the roof.	Electric inspection	CB103.1 through CB 103.8
				Solar-ready zone complies with Sections CB103.2 through CB103.8.	Electric inspection	

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ASHRAE COMPLIANCE PATH						
Y	**N**	**N/A**	**Requirement**		**Documentation**	**Relevant Code Section(s)**
			Overall compliance with ASHRAE 90.1-2022			N/A
			Complies with Sections C405.14 (EV Readiness) and C405.16 (Electric-readiness) of the 2024 IECC		Electric inspection	C405.14 and C405.16
			EV-readiness	The number of required EV spaces, EV capable spaces and EV ready spaces complies with Table **C405.14.1** and is based on the total number of automobile parking spaces. R-2 buildings: The number of required EV spaces, EV capable spaces and EV ready spaces complies with Table **C405.14.1**, based on the total number of dwelling units or the total number of automobile parking spaces, whichever is less.	Electric inspection	C405.14.1 through C405.14.4
				All **EV-capable** spaces used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.2	Electric inspection	
				All **EV-ready** spaces used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.3	Electric inspection	
				All **EVSE spaces** used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.4	Electric inspection	
			Electric-readiness	Full electrification is not required. Natural gas may still be used, but commercial buildings are required to be electric-ready for water heating, space heating, cooking and clothes drying. Requires new R2 occupancy commercial buildings to include electric infrastructure that would be required for electric appliance installation at time of combustion appliance replacement.	Electric inspection	C405.16

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PHIUS ALTERNATIVE COMPLIANCE PATH					
Y	**N**	**N/A**	**Requirement**	**Documentation**	**Relevant Code Section(s)—as required by Table C407.2**
			Certified in compliance with Passive House Institute (PHI) or Passive House Institute U.S. (PHIUS)	PHI or PHIUS official certificate	C102.1.1; 600.330 (Illinois Commercial Stretch Energy Code)
Building Thermal Envelope (C401-C402)					
			Certificate	A permanent building thermal envelope certificate will be posted on a wall in the space where the space conditioning is located, a utility room or another approved location.	C401.3
			Joints Staggered	Continuous, above-deck insulation board located above the roof deck is installed in at least two layers, and the edge joints between each layer of insulation are staggered.	Visual inspection at rough-in	C402.2.1.1
			Skylight curbs	R-5 or the level of the above-deck roof insulation, whichever is less.	Visual inspection at rough-in	C402.2.1.2
			Insulation of radiant heating system panels	R-3.5	Visual inspection at rough-in	C402.2.6
			Air leakage	The measured air leakage of the building envelope shall not exceed 0.35 cfm/ft^2 at a pressure differential of 0.3-inch water gauge (75pa) Exception: Buildings over 25,000 sq ft of conditioned floor area	Blower door test by third party	C402.6.2
			Blower Door Test	Blower door test required. Same testing requirements as base code with exceptions: 1. For buildings less than 10,000 sq ft the entire building thermal envelope shall be tested 2. For buildings greater than 50,000 sq ft portions of the building shall be tested by the area-weight.	Blower door test by third party	C402.6.2.1

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PHIUS ALTERNATIVE COMPLIANCE PATH *continued*

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)—as required by Table C407.2
Mechanical (C403)						
			Calculation of heating and cooling loads	Determined in accordance with ANSI/ ASHRAE/ACCA Standard 183	HVAC inspection and commissioning report	C403.1.1
			Data centers	Sections 6 and 8 of ASHRAE 90.4		C403.1.2
			Ventilation	Chapter 4 of the IMC	HVAC inspection and commissioning report	C403.2
			Heating and cooling equipment efficiencies	Output capacity is not greater than that of the smallest available equipment size that exceeds the loads calculated in accordance with Section C403.1.1. HVAC equipment meets the minimum efficiency requirements of Tables C403.3.2 (1) through C403.3.2(16).	HVAC inspection and commissioning report	C403.3
			Demand Response	Demand-response-capable thermostats and water heaters required.	Electric inspection	C403.4.6; C404.10
			Off-hour controls	Each zone is provided with thermostatic setback controls that are controlled by either an automatic time clock or programmable control system.	HVAC inspection and commissioning report	C403.4.2
			Heating and cooling system controls for operable openings to the outdoors	Doors and all operable openings larger than 40 sqft leading from a conditioned space to the outdoors have automatic controls interlocked with the heating and cooling system.	HVAC inspection and commissioning report	C403.4.7

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PHIUS ALTERNATIVE COMPLIANCE PATH *continued*

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)—as required by Table C407.2
Mechanical (C403) *continued*						
			Economizer fault detection and diagnostics	Air-cooled unitary direct-expansion units and variable refrigerant flow (VRF) units that are equipped with an economizer include a fault detection and diagnostics system complying with the requirements outlined in Section C403.5.5.	HVAC inspection and commissioning report	C403.5.5
			Ventilation Fan Efficiency	Table C403.8.5	HVAC inspection	C403.8.5
			Large-diameter ceiling fans	Tested and labeled in accordance with AMCA 230 and meet the efficiency requirements of Travel C403.9 and Section C403.9.1	HVAC inspection	C403.9
			Refrigeration equipment performance	Comply with minimum efficiency requirements in Table C403.12.1	Visual inspection	C403.12, except C403.12.3
			Duct Testing	All ducts must be tested for tightness	Duct blaster test	C403.13.1
			Duct Tightness	Conditioned: Must meet 4 cfm/100 sq ft	Duct blaster test	C403.13.2.3
			Duct Insulation	Unconditioned spaces: R-6 Conditioned spaces: CZ 4: R-8 CZ 5: R-12	HVAC inspection at rough-in	C403.13.1
			Cavities as Ducts	Supply and return ducts and plenums	HVAC inspection at rough-in	C403.13
			Piping Insulation	Table C403.13.3 (1) or Table C403.13.3 (2)	Plumbing inspection	C403.13.3

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PHIUS ALTERNATIVE COMPLIANCE PATH *continued*

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)—as required by Table C407.2
Mechanical (C403) *continued*						
			Mechanical systems located outside of envelope	Snow- and ice-melting systems, roof and gutter deicing controls, and freeze protection system controls have automatic controls configured to shut off systems when the outdoor air temperature is above 40F. Additionally, snow- and ice-melting systems should have automatic controls to shut off the system when pavement temperature is above 50F.	HVAC inspection and commissioning report	C403.14
Service water heating (C404)						
			Performance efficiency	Water-heating equipment and hot water storage tanks meet the minimum efficiency requirements in Table C404.2	Plumbing inspection at rough-in	C404.2
			Heat traps	Required for hot water storage tanks	Plumbing inspection at rough-in	C404.3
			Service water heating system piping insulation	Piping is surrounded by uncompressed insulation. Wall thickness of the insulation meets minimum requirements in Table C404.4.1, or as calculated by Equation 4-8 when insulation thermal conductivity is not within range in the table.	Plumbing inspection at rough-in	C404.4
			Heated water supply piping	Flow rate is less than or equal to maximum requirements in C404.5. Maximum allowable pipe length is in accordance with Table C404.5.1.	Plumbing inspection at rough-in	C404.5

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PHIUS ALTERNATIVE COMPLIANCE PATH *continued*

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)—as required by Table C407.2
Service water heating (C404) *continued*						
			Circulation systems	Heated water circulation systems are provided with a circulation pump. Controls are configured to automatically turn off the pump when water in the circulation loop is at the desired temperature and when there is not a demand for hot water.	Plumbing inspection at rough-in	C404.6
			Drain water heat recovery units	Comply with CSA B55.2. Potable water-side pressure loss is less than 10 psi at maximum design flow. Exception: Group R occupancies shall comply with CSA B55.1.	Plumbing inspection	C404.7
Electrical power and lighting systems (C405)						
			High Efficacy Lighting	*Increased efficiency and controls*—Buildings must meet lighting power allowances and lighting controls, specified by building use type.	Electric inspection	C405.3
			EV-readiness	The number of required EV spaces, EV capable spaces and EV ready spaces complies with Table **C405.14.1** and is based on the total number of automobile parking spaces. R-2 buildings: The number of required EV spaces, EV capable spaces and EV ready spaces complies with Table **C405.14.1**, based on the total number of dwelling units or the total number of automobile parking spaces, whichever is less.	Electric inspection	C405.14.1 through C405.14.4
				All **EV-capable** spaces used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.2	Electric inspection	

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PHIUS ALTERNATIVE COMPLIANCE PATH *continued*

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)—as required by Table C407.2
Electrical power and lighting systems (C405) *continued*						
			EV-readiness *continued*	All **EV-ready** spaces used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.3	Electric inspection	C405.14.1 through C405.14.4 *continued*
				All **EVSE spaces** used to meet the requirements of Section C405.14.1 comply with the provisions outlined in Section C405.14.4	Electric inspection	
			Electric-readiness	Full electrification is not required. Natural gas may still be used, but commercial buildings are required to be electric-ready for water heating, space heating, cooking and clothes drying. Requires new R2 occupancy commercial buildings to include electric infrastructure that would be required for electric appliance installation at time of combustion appliance replacement.	Electric inspection	C405.16
Maintenance information and system commissioning						
			Building operations and maintenance information	Building operations and maintenance documents are provided to the owner and consist of manufacturers' information, specification and recommendations; programming procedures and data points; narratives; and other means of illustrating to the owner how the building, equipment and systems are intended to be installed, maintained and operated.	Final inspection	C408

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PHIUS ALTERNATIVE COMPLIANCE PATH *continued*

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)—as required by Table C407.2
Solar-ready requirements (Appendix CB)						
			Solar-readiness	Buildings that are five stories or less above grade plane and are oriented between 110 and 270 degrees of true north, or have low slope roofs, have a solar-ready zone on the roof.	Electric inspection	CB103.1through CB103.8
				Solar-ready zone complies with Sections CB103.2 through CB103.8.	Electric inspection	

COMMERCIAL ZERO ENERGY PATH (Appendix CC)

Y	N	N/A	Requirement		Documentation	Relevant Code Section(s)
			Renewable Energy	On-site renewable energy systems shall be installed, or off-site renewable energy shall be procured to offset the building energy as calculated in Equation CC-2.	Electric inspection	CC103.1; Equation CC-2
				Annual renewable energy generation is in minimum compliance with prescriptive renewable energy requirements listed in Table CC103.1.	Electric inspection	CC103.1
			Off-site renewable energy	Off-site energy complies with Sections CC103.3.1 and CC103.3.2.	Electric inspection	CC103.3.1 and CC103.3.2
			On-site renewable energy	Annual energy production from on-site renewable energy systems shall be determined using software approved by the code official	Electric inspection	CC103.2

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APPENDIX A: DEFINITIONS

Automobile Parking Space: A space within a building or private or public parking lot, exclusive of driveways, ramps, columns, office and work areas, for the parking of an automobile.

Demand Response Signal: A signal that indicates a price or a request to modify electricity consumption for a limited time period.

Demand Responsive Control: A control capable of receiving and automatically responding to a demand response signal.

Electric Vehicle (EV): An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, EVSE (Electric Vehicle Supply Equipment), a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current.

Electric Vehicle Ready Space (EV-Ready Space): An automobile parking space that is provided with a branch circuit and either an outlet, junction box or receptacle, that will support an installed EVSE. EV-Ready Space should be sized for a minimum EV charging load of 7.2 kVA.

Solar-ready Zone: A section or sections of the roof or building overhang designated and reserved for the future installation of a solar photovoltaic or solar thermal system (2021 IECC)

APPENDIX B: EQUATIONS

Equation CC-1

$$RE_{on\text{-}site} + RE_{off\text{-}site} \geq RE_{min}$$

Where:

$RE_{on\text{-}site}$ = Annual site energy production from on-site renewable energy systems, including installed on-site renewable energy systems used for compliance with Sections C405.13.1 and C406.

$RE_{off\text{-}site}$ = Adjusted annual site energy production from off-site renewable energy systems that is permitted to be credited against the minimum renewable energy requirement, including off-site renewable energy purchased for compliance with Section C405.13.2.

RE_{min} = Minimum renewable energy requirement, as determined by Table CC103.1 or Section C401.2.1, Item 2 or Section C401.2.2.

Equation CC-2:

$$RE_{off\text{-}site} = PF_{NonRecs} \times RE_{NonRecs} + 0.20 \times RE_{Recs}$$

Where:

$RE_{off\text{-}site}$ = Adjusted off-site renewable energy.

$PF_{NonRecs}$ = The renewable energy procurement factor for off-site renewable energy other than RECs, in accordance with Section CC103.3.3.1

$RE_{NonRecs}$ = Annual energy production for renewable energy procurement methods other than RECs.

RE_{Recs} = Annual energy production associated with unbundled RECs.