

2021 IECC Building Inspector Checklist - Commercial
Project Information Sheet

Permit # _____ Date _____

Project Address _____

Project Name _____

Project Contact Info Name _____ Phone _____

Email _____

Building Type

Retail/Mercantile	<input type="checkbox"/>	Office	<input type="checkbox"/>	Education/School	<input type="checkbox"/>
Restaurant/Dining/Fast Food	<input type="checkbox"/>	Healthcare	<input type="checkbox"/>	Assembly/Religious	<input type="checkbox"/>
Lodging/Hotel/Motel	<input type="checkbox"/>	Warehouse/Storage	<input type="checkbox"/>	High Rise Residential	<input type="checkbox"/>
				Other	<input type="checkbox"/>

New Construction _____ Addition _____ Renovation _____

Compliance Approach

Prescriptive _____ Component Performance Alternative _____ Total Building Performance _____

Glazing < 30% Glazing < 40% ASHRAE 90.1 _____

Inspector Contact Info: Name _____ Phone _____

Email _____

Jurisdiction Name _____

County _____ Climate Zone _____

Substantiating Data

- _____ Mechanical Load Calculations
- _____ Duct design
- _____ Lighting Plan
- _____ Compliance Path documentation
 - _____ Component Performance Alternative- need COMcheck or equivalent
 - _____ Performance - need Engineering Analysis/Performance Report
 - _____ Prescriptive - Show Prescriptive requirements on plans (U-factor, C-factor, F-factor method needs assembly description and values used)
 - _____ Other, Please describe _____

Inspection and Project Comments:

2021 IECC Building Inspector Checklist - Commercial
Thermal Envelope Compliance

<u>Code Section</u>	<u>Insulation</u>		
402.1.1	Low Energy Buildings	<u>Y / N</u>	C402.1.1.1 Greenhouse <u>Y / N</u>
402.1.2	Equipment Buildings	<u>Y / N</u>	
402.2.1	Roof Assembly	R _____ + _____	Above Ceiling ___ Metal Roof _____ Attic/other _____
402.2.2	Above-Grade Walls	R _____ + _____	Metal _____ Metal Frame _____ Mass _____ Wood/Other _____
402.2.5	Below Grade Walls	R _____ + _____	Heated slab at bottom of wall? (footnote d) <u>Y / N</u>
402.2.3	Floors	R _____ + _____	Mass floor _____ Joist/framed floor _____
402.2.4	Slab-on-grade floors	R _____ + _____	Heated Y/N Depth _____ ft Under-slab Insulation _____
402.2.6	Radiant Heat Systems	R _____	System Location _____
402.2.7	Air Spaces airtight	_____	Space Location _____
402.4.5	Opaque Doors	_____	How many? Swinging _____ Non-Swinging _____
T402.1.4	Garage Doors	_____	Less than 14% glazing? (footnote i) <u>Y / N</u>

Fenestration

402.4	NFRC Certificate provided?	<u>Y / N</u>	for all fenestration with correct U-factor and SHGC
402.4.1	Window/Wall Area	_____ %	
402.4.1.1	Daylight Responsive Controls	<u>Y / N</u>	
402.4.3.3	Dynamic Glazing used?	<u>Y / N</u>	

Skylights

402.4.2	Skylight/Roof Area	_____ %	402.4.1.2 Daylight Responsive Controls	<u>Y / N</u>
402.4.2.2	Haze Factor	_____	Exception taken?	<u>Y / N</u>

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Air Leakage

402.5.1 Continuous Air Barrier Y / N

402.5.1.3 Materials used for air barrier _____

402.5.1.5 Envelope verification Evaluated by: _____

Building envelope performance verification report provided? Y / N

402.5.2 Dwelling/Sleeping Unit testing _____ CFM/ft2 Number of dwelling/sleeping units _____

402.5.3 Building Envelope Test _____ CFM/ft2 Areas of building tested _____

402.5.5 Rooms Containing Fuel burning Appliances outside of envelope? Y / N / NA

402.5.6 Stair/Elevator Shaft Openings gasketed or sealed? Y / N / NA

402.5.7 Air Intake/Exhaust Openings have dampers? Y / N / NA

402.5.8 Loading Dock Weather seals Y / N / NA

402.5.9 Vestibule with self-closing doors? Y / N Exception? Y / N

402.5.10 Recessed Lighting sealed, IC-rated, and leakage rate labeled? Y / N / NA

402.5.11 Operable Opening Interlocking with setpoint control? Y / N / NA

OTHER ENVELOPE PROVISIONS

402.3 Roof Solar Reflectance _____ Solar reflectance index (Climate Zone 0-3 only)

2021 IECC Building Inspector Checklist - Commercial
HVAC System Compliance

HVAC Equipment

- _____ Mechanical Compliance Report provided?
- _____ 403.3.1 Equipment Sizing
- _____ 403.3.2 HVAC equipment Performance
- _____ 403.3.2.2 Positive Displacement chillers
- _____ 403.4.1 Thermostatic Controls
- _____ 403.4.1.1 Heat Pump Supplementary Heat
- _____ 403.4.1.3 Setpoint overlap restriction
- _____ 403.4.1.4 Heated or cooled vestibules
- _____ 403.4.3.3.2 Heat rejection
- _____ 403.4.3.3.3 Two-position valve
- _____ 403.4.5 Pump isolation
- _____ 403.5 Economizers
- _____ 403.5.3.2 Control signal
- _____ 403.5.3.3 High-limit shutoff
- _____ 403.5.3.4 Relief of excess outdoor air
- _____ 403.5.3.5 Economizer dampers
- _____ 403.5.4.2 Maximum Pressure Drop
- _____ 403.6.2 Single-duct VAV systems, Terminal devices
- _____ 403.6.3 Dual-duct and mixing VAV systems
- _____ 403.7.2 Enclosed parking garage ventilation control
- _____ 403.7.3 Ventilation air heating control
- _____ 403.7.4.2 Energy recovery- other dwelling units
- _____ 403.7.5 Kitchen Exhaust Systems
- _____ 403.7.7 Shutoff dampers
- _____ 403.8.1 Allowable Fan Horsepower
- _____ 403.8.2 Motor nameplate horsepower
- _____ 403.8.3 Fan Efficacy
- _____ 403.8.5 Low-capacity ventilation fans
- _____ 403.9 Large-diameter ceiling fans
- _____ 403.10.3 Limitation on centrifugal fan cooling towers
- _____ 403.10.4 Tower flow turndown
- _____ 403.10.5 Heat recovery for service water heating

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The following items would be inspected with Commissioning Agent if required. If no commissioning is required, the Inspectors for the AHJ would inspect.

- _____ 403.2.1 Zone Isolation
- _____ 403.2.3 Fault Detection and Diagnostics
- _____ 403.3.4 Boiler Turndown
- _____ 403.4.1.2 Deadband
- _____ 403.4.1.5 Hot water boiler temp setback
- _____ 403.4.2 Off-hour controls
 - _____ 403.4.2.1 Thermostatic Setback
 - _____ 403.4.2.2 Automatic setback and shutdown
 - _____ 403.4.2.3 Automatic start and stop
- _____ 403.4.3.2 Two-pipe changeover system
 - _____ 403.4.3.3.1 Hydronic heat pump temp deadband
- _____ 403.4.4 Part-load controls
- _____ 403.5.1 Integrated Economizer Control
- _____ 403.5.5 Economizer fault detection/diagnostics
- _____ 403.6.1 Variable air volume/multiple zone systems
- _____ 403.6.5 Supply-air temperature reset controls
- _____ 403.6.6 Multi-zone VAV ventilation Optimization
- _____ 403.6.7 Parallel-flow fan-powered VAV terminal
- _____ 403.6.8 Setpoints for direct digital control
- _____ 403.6.9 Static Pressure sensor location
- _____ 403.7.1 Demand Control Ventilation
- _____ 403.7.6 Auto control of HVAC systems in guestrooms
 - _____ 403.7.6.1 Temperature setpoint controls
 - _____ 403.7.6.2 Ventilation Controls
- _____ 403.8.4 Fractional hp fan motors
 - _____ 403.8.6.1 Fan airflow control
- _____ 403.10.1 Fan speed control
- _____ 403.10.2 Multiple-cell heat rejection equipment

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Code					
Section	<u>Refrigeration Equipment</u>				
403.11	Refrig. equipment performance	<input type="checkbox"/>	403.11.3	Refrigeration systems	<input type="checkbox"/>
403.11.1	Commercial fridge, freezers	<input type="checkbox"/>	403.11.3.1	Condensers serving refrig. systems	<input type="checkbox"/>
403.11.2.1	Walk-in coolers/freezers perf.	<input type="checkbox"/>	403.11.3.2	Compressor systems	<input type="checkbox"/>

Code					
Section	<u>Duct & Piping Systems</u>				
403.12.1	Duct Insulation and Sealing	<input type="checkbox"/>	403.12.2.1	Low pressure duct system	<input type="checkbox"/>
403.12.3	HVAC piping insulation	<input type="checkbox"/>	403.12.2.2	Medium pressure duct system	<input type="checkbox"/>
403.12.3.1	Protection of Pipe Insulation	<input type="checkbox"/>	403.12.2.3	High pressure duct system	<input type="checkbox"/>

Code					
Section	<u>Mechanical systems outside the building</u>				
403.13.1	Heating outside a building	<input type="checkbox"/>			
403.13.2	Snow and Ice melt system control	<input type="checkbox"/>			
403.13.3	Freeze protection system control	<input type="checkbox"/>			
403.14	Operable opening interlocking controls	<input type="checkbox"/>			

Code					
Section	<u>Service Water Heating</u>				
404.2	Service water heating efficiency	<input type="checkbox"/>	403.12.2.1	Low pressure duct system	<input type="checkbox"/>
404.2.1	High input service water heating	<input type="checkbox"/>	403.12.2.2	Medium pressure duct system	<input type="checkbox"/>
404.3	Heat traps for HW storage tanks	<input type="checkbox"/>	403.12.2.3	High pressure duct system	<input type="checkbox"/>
404.4	Insulation of Piping	<input type="checkbox"/>	404.6.2	Heat Trace Systems	<input type="checkbox"/>
404.5	Heated Water supply piping	<input type="checkbox"/>	404.6.3	Controls for hot water storage	<input type="checkbox"/>
404.5.2.1	Water volume determination	<input type="checkbox"/>	404.7	Drain Water Heat Recovery Units	<input type="checkbox"/>
404.6	HW circulating /temp maintenance	<input type="checkbox"/>	404.8.1	Pool/spa heaters	<input type="checkbox"/>
404.6.1	Circulation systems	<input type="checkbox"/>	404.8.2	Time Switches	<input type="checkbox"/>
404.6.1.1	Demand Recirculation Controls	<input type="checkbox"/>	404.8.3	Covers	<input type="checkbox"/>
			404.9	Portable Spas	<input type="checkbox"/>

Mechanical/Service Water Heating Comments:

2021 IECC Building Inspector Checklist - Commercial
Lighting System Compliance

<u>Code</u>	<u>Section</u>			
<input type="checkbox"/>		Interior Lighting Compliance Certificate provided?	<input type="checkbox"/>	Exterior Lighting Compliance Certificate provided?
<input type="checkbox"/>	402.4.2.1	Controls in Daylight Zones	<input type="checkbox"/>	405.2.7 Exterior lighting controls
<input type="checkbox"/>	405.2	Lighting Controls	<input type="checkbox"/>	405.2.7.1 Daylight shutoff
<input type="checkbox"/>	405.2.1	Occupant sensor controls	<input type="checkbox"/>	405.2.7.2 Building Façade/Landscape Lighting
<input type="checkbox"/>	405.2.7.4	Exterior time-switch control	<input type="checkbox"/>	405.2.7.3 Lighting Setback
<input type="checkbox"/>	405.2.2	Time switch controls	<input type="checkbox"/>	405.2.8 Parking garage lighting control
<input type="checkbox"/>	405.2.3	Light reduction controls	<input type="checkbox"/>	405.3.2 Interior lighting power
<input type="checkbox"/>	405.2.4	Daylight responsive controls	<input type="checkbox"/>	405.4 Lighting for plant growth/maint.
<input type="checkbox"/>	405.2.4.4	Atriums	<input type="checkbox"/>	405.5.5.2 Exterior lighting power
<input type="checkbox"/>	405.2.5	Specific application controls	<input type="checkbox"/>	405.5.3 Gas Lighting
<input type="checkbox"/>	405.2.6	Manual Controls		

Electrical Power System Compliance

<input type="checkbox"/>	405.6	Dwelling electrical meter	<input type="checkbox"/>	405.11	Automatic Receptacle Control
<input type="checkbox"/>	405.7	Electrical transformers	<input type="checkbox"/>	405.12	Energy Monitoring
<input type="checkbox"/>	405.8	Electrical motors	<input type="checkbox"/>	405.12.1	Electrical Energy Metering
<input type="checkbox"/>	405.9.1	Elevator cabs	<input type="checkbox"/>	405.12.2	End-use metering categories
<input type="checkbox"/>	405.9.2	Escalators & moving walks	<input type="checkbox"/>	405.12.3	Meters
<input type="checkbox"/>	405.9.2.1	Energy Recovery	<input type="checkbox"/>	405.12.4	Data acquisition system
<input type="checkbox"/>	405.10	Voltage Drop	<input type="checkbox"/>	405.12.5	Graphical energy report

C406 Additional Efficiency Points Options (10 credits required)

Compliance Certificate shows additional efficiency options selected

C408 Commissioning

<u>Code</u>	<u>Section</u>	
408.2.5.1	System balancing report	<input type="checkbox"/>
408.2.5.2	Final Commissioning Report	<input type="checkbox"/>