

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

SUBCHAPTER 4 – Commercial Building Compliance Methods

Form 400C-04
Building Prescriptive Envelope Method

North
Climate Zones 1 2 3

Project Name:	Zone:
Address:	Building Classification:
City, Zip Code:	Building Permit No.:
Builder:	Permitting Office:
Owner:	Jurisdiction No.:

BUILDING ENVELOPE INFORMATION

ENVELOPE COMPONENT	Nonresidential		Residential		Semiheated	
	U-factor	R-value	U-factor	R-value	U-factor	R-value
Roof type:						
Wall type:						
Floor type:						
Fenestration	Max. U-factor Fixed/operable	Max. SHGC All orientation	Max. U-factor Fixed/operable	Max. SHGC All orientation	Max. U-factor Fixed/operable	Max. SHGC All orientation
Vertical glazing type, % of wall:						
Skylight type, % of roof:						

SYSTEMS INFORMATION

SYSTEM	Type (describe system)	Size (capacity)	Sizing calc.	Efficiency	Rating
Air-conditioning system					
Heating system					
Ventilation					
Ducts	Location:	Fan Power:		R-value	
Piping	Fluid design operating temp:	Size of pipe:	-----	Inches	
Hot water			-----	EF	
Electric power	Drawings	Y	N	Operations manual available upon completion:	Y N
Motors	Open or enclosed			Poles & speed	Horsepower:
Lighting	Space type:			Lighting power density	

PRESCRIPTIVE MEASURES

Components	Section	Requirements	Check
Operations Manual	102.1, 410, 413	Operations manual provided to owner.	
Windows & Doors	406.1.ABC.1.1	Glazed swinging entrance & revolving doors: max. 1.0 cfm/ft ² ; all other products: 0.4 cfm/ft ² .	
Joints/Cracks	406.1.ABC.1.2	To be caulked, gasketed, weatherstripped or otherwise sealed.	
Dropped Ceiling Cavity	406.1.ABC.1.4	Vented: seal & insulated ceiling. Unvented seal & insulate roof & side walls.	
Reheat	407.1.BC	Electric resistance reheat prohibited.	
HVAC Efficiency	407.1, 408.1	Minimum efficiencies: Cooling Tables 407.1.ABC.3.2A-D; Heating Tables 407.1.ABC.3.2B, 407.1.ABC.3.2D, 408.1.ABC.3.2E thru 408.1.ABC.3.2G.	
HVAC Controls	407.1.ABC.2	Zone controls prevent reheat (exceptions); separate thermostatic control per zone; combined HAC control 5°F deadband (exceptions).	
Ventilation	409.1.ABC.3	Motorized dampers reqd. except gravity dampers OK in: 1) exhaust systems and 2) systems with design outside air intake or exhaust capacity ≤300 cfm.	
HVAC Ducts	410.1.ABC	Air ducts, fittings, mechanical equipment & plenum chambers shall be mechanically attached, sealed, insulated & installed per Sec. 410.1.ABC. Fan power limitations.	
Balancing	410.1.ABC.4	HVAC distribution system(s) tested & balanced. Report in construction documents.	
Piping Insulation	411.1.ABC	In accordance with Table 411.1.ABC.2.	
Water Heaters	412.1.ABC	Performance requirements in accordance with Table 412.1.ABC.3. Heat trap required.	
Swimming Pools	412.1.ABC.2.6	Cover on heated pools; Time switch (exceptions); Readily accessible on/off switch.	
Hot Water Pipe Insulation	412.1.ABC.4	Table 411.1.ABC.2 for circulating systems, first 8' outlet pipe from storage tank, between inlet pipe and heat trap.	
Water Fixtures	412.1.ABC.2.5.2	Shower heat water flow restricted to 2.5 gpm at 80 psi. Public lavatory fixture max. Flow 0.5 gpm; if self-closing valve 0.25 gallon circulating, 0.5 gallon noncirculating.	
Lighting Controls	415.1.ABC	Automatic control required for interior lighting in buildings <5,000 s.f.; Space control; Exterior photo sensor; Tandem wiring where 1-3 linear fluorescent lamps >30W.	

If required by Florida law, I hereby certify that the system design is in compliance with the Florida Energy Code.

Registration number

ARCHITECT: _____
 ELECTRICAL SYSTEM DESIGNER: _____
 LIGHTING SYSTEM DESIGNER: _____
 MECHANICAL SYSTEM DESIGNER: _____
 PLUMBING SYSTEM DESIGNER: _____

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

PREPARED BY: _____ DATE: _____

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

OWNER AGENT: _____ DATE: _____

Review of plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed, this building will be inspected for compliance in accordance with Section 553.908, F.S.

BUILDING OFFICIAL: _____
 DATE: _____

APPENDIX 13-D
**Form 400C-04
Building Prescriptive Envelope Method**
**North
Climate Zones 1 2 3**

Opaque Elements	Nonresidential		Residential			Semiheated	
	Assembly Maximum	Insulation Min. ¹ R-value	Assembly Maximum	Insulation Min. ¹ R-value	Assembly Maximum	Insulation Min. ¹ R-Value	
Roofs							
Insulation all above deck	U-0.063	R-15.0 ci	U-0.063	R-15.0 ci	U-0.218	R-3.8 ci	
Metal building	U-0.065	R-19.0	U-0.065	R-19	U-0.167	R-6.0	
Attic and other	U-0.034	R-30.0	U-0.034	R-30.0	U-0.081	R-13.0	
Walls, Above-Grade							
Mass	U-0.580	NR	U-0.151 ²	R-5.7 ci ²	U-0.580	NR	
Metal Building	U-0.113	R-13.0	U-0.113	R-13.0	U-0.184	R-6.0	
Steel framed	U-0.124	R-13.0	U-0.124	R-13.0	U-0.352	NR	
Wood framed and other	U-0.089	R-13.0	U-0.089	R-13.0	U-0.292	NR	
Walls, Below-Grade							
Below-grade wall	C-1.140	NR	C-1.140	NR	C-1.140	NR	
Floors							
Mass	U-0.137	R-4.2 ci	U-0.107	R-6.3 ci	U-0.322	NR	
Steel Joist	U-0.052	R-19.0	U-0.052	R-19.0	U-0.350	NR	
Wood framed and Other	U-0.051	R-19.0	U-0.051	R-19.0	U-0.282	NR	
Slab-On-Grade Floors							
Unheated	F-0.730	NR	F-0.730	NR	F-0.730	NR	
Heated	F-1.020	R-7.5 for 12 in.	F-1.020	R-7.5 for 12 in.	F-1.020	R-7.5 for 12 in.	
Opaque Doors							
Swinging	U-0.700		U-0.700		U-0.700		
Nonswinging	U-1.450		U-1.450		U-1.450		
Fenestration	Assembly Max U (Fixed/Operable)	Assembly Max. SHGC (All Orientations/North-Oriented)	Assembly Max. U (Fixed/Operable)	Assembly Max. SHGC (All Orientations/North-Oriented)	Assembly Max. U (Fixed/Operable)	Assembly Max. SHGC (All Orientations/North-Oriented)	
Vertical Glazing, % of wall							
0 - 10%	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.39 SHGC _{north} 0.61	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.61 SHGC _{north} 0.61	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} NR SHGC _{north} NR	
10.1 - 20%	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.25 SHGC _{north} 0.61	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.44 SHGC _{north} 0.61	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} NR SHGC _{north} NR	
20.1 - 30%	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.25 SHGC _{north} 0.61	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.44 SHGC _{north} 0.61	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} NR SHGC _{north} NR	
30.1 - 40%	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.25 SHGC _{north} 0.61	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.40 SHGC _{north} 0.61	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} NR SHGC _{north} NR	
40.1 - 50%	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.17 SHGC _{north} 0.42	U _{fixed} —1.22 U _{oper} —1.27	SHGC _{all} 0.29 SHGC _{north} 0.41	U _{fixed} —0.98 U _{oper} —1.02	SHGC _{all} NR SHGC _{north} NR	
Skylight with curb, glass, % roof							
0 - 2.0%	U _{all} —1.98	SHGC _{all} 0.39	U _{all} —1.98	SHGC _{all} 0.36	U _{all} —1.98	SHGC _{all} NR	
2.1 - 5.0%	U _{all} —1.98	SHGC _{all} 0.25	U _{all} —1.98	SHGC _{all} 0.19	U _{all} —1.98	SHGC _{all} NR	
Skylight with curb, plastic, % roof							
0 - 2.0%	U _{all} —1.90	SHGC _{all} 0.65	U _{all} —1.90	SHGC _{all} 0.27	U _{all} —1.90	SHGC _{all} NR	
2.1 - 5.0%	U _{all} —1.90	SHGC _{all} 0.39	U _{all} —1.90	SHGC _{all} 0.27	U _{all} —1.90	SHGC _{all} NR	
Skylight without curb, all, % roof							
0 - 2.0%	U _{all} —1.36	SHGC _{all} 0.39	U _{all} —1.36	SHGC _{all} 0.36	U _{all} —1.36	SHGC _{all} NR	
2.1 - 5.0%	U _{all} —1.36	SHGC _{all} 0.25	U _{all} —1.36	SHGC _{all} 0.19	U _{all} —1.36	SHGC _{all} NR	

¹ The following definitions apply: ci = continuous insulation; NR = no (insulation) requirements.

² Exception to 402.1.C.1 applies for mass walls.