

Energy Code Checklist for Residential Construction

(Required for all New Residential Buildings, Additions and other Residential Building Permits as Applicable)

The State of Illinois amended the Energy Efficient Building Act to include residential buildings in Illinois. This law requires the 2012 International Energy Conservation Code (IECC) be the energy code for all residential construction in Illinois. The code sections listed are from Chapter 4 in the 2009 IECC.

Project Address			Permit #
Owner/Agent			Checked By
Phone #	Email		Date
Project Type:	New Building	Addition	Renovation

(Staff use only)

Required Documentation with Permit Submittal:

1. **Energy Compliance Checklist** – All methods must meet mandatory requirements.

Building Permit Application

Easement Sign off Form

checklist and certificate. for the energy code can be located: www.energycodes.gov/REScheck (it's free & easy!).

Notes:

2. **Mandatory Requirements** – All projects must meet the mandatory requirements of the IECC (401, 402.4, 402.5, 403.1, 403.2.2, 403.2.3, & 403.3 through 403.9). **COMPLETE ALL ITEMS (a through q)**

Mandatory Requirements	Compliance
a) Building Thermal Envelope (402.4.1) Seal building envelope from air infiltration	<input type="checkbox"/> Will Comply
b) Air Sealing and Insulation (402.4.2) Verify sealing and insulation-choose one method	<input type="checkbox"/> Blower Door <input type="checkbox"/> Visual Insp.
c) Fireplaces (402.4.3) Wood-burning have gasketed doors and outdoor combustion air	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
d) Fenestration Air Leakage (402.4.4) Windows, sliding glass doors, skylights	<input type="checkbox"/> ≤ 0.3 cfm/sf
e) Fenestration Air Leakage (402.4.4) Swinging doors	<input type="checkbox"/> ≤ 0.5 cfm/sf
f) Recessed Lighting (402.4.5) IC-rated and air tight when in thermal envelope	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
g) Heating/Cooling System Controls (403.1) Programmable thermostat for furnace	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
h) Duct Sealing (403.2) All ducts sealed with approved material	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
i) Duct Tightness Testing (403.2.2) Required if furnace/duct is outside of thermal envelope	<input type="checkbox"/> Test 1 <input type="checkbox"/> Test 2 <input type="checkbox"/> N/A
j) Building Cavities (403.2.3) Building framing cavities shall not be used as supply ducts	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
k) Mechanical System Piping Insulation (403.3) R-3 minimum for > 105°F or <55°F	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
l) Circulating Hot Water System (403.4) Piping insulated R-2 min. and on/off switch	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
m) Mechanical Ventilation (403.5) Outdoor air intakes/exhaust require dampers	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
n) Equipment Sizing (403.6) Heating/Cooling equip. sized per M1401.3 of IRC	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
o) Systems Serving Multiple Dwelling Units (403.7) Shall comply with 503 & 504 (comm.	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
p) Snow Melt System Controls (403.8) Automatic Shutoff	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
q) Pools (403.9) Pool heaters, Time Switches, Pool Covers	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A

3. **Building Cross Section** – Required for all new buildings and additions. Additional documents may be required by the Building Official. Minimum (1) section required. *For interior alterations include documents to illustrate code compliance.*
4. **Floor Plan** – Required for all new buildings and additions. Floor plan must indicate thermal envelope, conditioned/unconditioned spaces and heating system location.
5. **Prescriptive Requirements** – **COMPLETE THIS TABLE**, if prescriptive method is chosen.

Building Components	Prescriptive Standard	Actual Value	Remarks
Insulation (402.2) Prescriptive Standard is Minimum R-Value			
Ceilings with Attic Spaces (402.2.1)	R-38		<i>R-38 for standard truss, can be reduced to R-30 with Raised Heel/Energy Truss</i>
Ceilings without Attic Spaces (402.2.2)	R-30		<i>Limited to 500 sf OR 20% of the total insulated ceiling area, whichever is less</i>
Wood Frame Wall	R-13		<i>R-13 for interior cavity</i>
Floors Over Unconditioned Space (402.2.6)	R-19		<i>Floor insulation shall maintain permanent contact with subfloor decking</i>
Basement Walls (402.2.7)	R-10 or R-13		<i>R-10 continuous insulation on the interior or exterior or R-13 for interior wall cavity</i>
Slab-on-Grade Floors (402.2.8)	R-10		<i>Insulation depth shall be the depth of the footing</i>
Crawl Space Walls (402.2.9)	R-10 or R-13		<i>R-10 continuous insulation on the interior or exterior or R-13 for interior wall cavity</i>
Fenestrations (402.3) Prescriptive Standard is Maximum U-Factor			
Windows, Sliding Glass Doors, and Swinging Doors with > 50% glazing	U-0.35		<i>An area weighted average may be used to satisfy the U-factor requirements but must include all windows, skylights, glass doors and opaque doors. Provide documentation if this is used.</i>
Skylights	U-0.60		

(The above table is based on wood frame construction and common building practices, if not addressed in the table above, please attach separate documentation to illustrate code compliance. Values are based on Climate Zone 4 from Chapter 3 in the 2009 IECC)

6. Other Prescriptive requirements:

Other Requirements	Compliance
Certificate (401.3) Permanent certificate posted on elec. panel with energy values	<input type="checkbox"/> Will Comply
Duct Insulation (403.2.1) Supply ducts in attic \geq R-8, all other ducts outside thermal envelope \geq R-6	<input type="checkbox"/> Will Comply <input type="checkbox"/> N/A
Lighting Equipment (404.1) A minimum of 50% of lamps permanently installed must be high efficacy	<input type="checkbox"/> Will Comply

Notes:

- i. For further clarification on any of the above items, please consult the International Energy Conservation Code (IECC). The IECC may be purchased through the International Code Council at www.iccsafe.org or 1-888-ICC-SAFE
- ii. For a Thermally Isolated Sunroom (greater than 40% glazing area of walls and roof) addition, refer to the IECC.
- iii. For free, up-to-date energy references, energy training and energy code info, visit www.energycodes.gov

City of Mt. Carmel, Illinois

Code Enforcement Department

Web: www.cityofmtcarmel.com