

(Required for all New Single-Family and Multi-Family Dwellings, Additions and Renovations)

Project Address:					Permit #
Builder:					License #
Phone:		Email:			Date
Project Type:	<input type="checkbox"/> Single-Family Dwelling	<input type="checkbox"/> Townhome	<input type="checkbox"/> Duplex	<input type="checkbox"/> Addition	<input type="checkbox"/> Renovation

**1. Energy Compliance – Choose One method.** All methods must meet the Mandatory Requirements (2).

- 2. Mandatory Requirements** – Building envelope air tightness and insulation installation shall be demonstrated to comply with the following.

<p>1. Building Thermal Envelope (402.4.1) - Building thermal envelope shall be durably sealed to limit infiltration.</p>	<input type="checkbox"/> Complied
<p>2. Air Sealing and Insulation (402.4.2) – Building envelope air tightness and insulation shall be demonstrated to comply with one of the following options - <b>CHOOSE ONE</b></p> <p><input type="checkbox"/> <b>Blower Door Test</b> – <i>Individual performing the test is required to be HERS or BPI Certified</i></p> <p>Air leakage is less than (7) seven air changes per hour at a pressure of 50 pascals.</p> <p>Test Performed By: _____</p> <p>Address: _____</p> <p>Date Test Was Performed: _____</p> <p><input type="checkbox"/> <b>HERS Certified</b>      <input type="checkbox"/> <b>BPI Certified</b></p> <p>To locate a certified professional log onto:   <a href="http://www.energy.sc.gov/">http://www.energy.sc.gov/</a>                       <a href="http://www.resnet.us/trade/home-energy-raters-hers-raters">http://www.resnet.us/trade/home-energy-raters-hers-raters</a>                       <a href="http://www.bpi.org/">http://www.bpi.org/</a></p> <p><input type="checkbox"/> <b>Visual Inspection</b> – <i>Building envelope tightness and insulation inspection shall be considered acceptable when items listed in Table 402.4.2 are field verified.</i></p>	<div> <input type="checkbox"/> Complied      <input type="checkbox"/> N/A           </div> <div> <input type="checkbox"/> Complied with Table 402.4.2      <input type="checkbox"/> N/A           </div>

### Mandatory Requirements - Continued

3. Fireplaces ( <b>State Amendment</b> ) Wood burning fireplaces shall have tight-fitting flue dampers and outdoor combustion air.	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
4. Fenestration Air Leakage (402.4.4) – Windows, sliding glass doors, skylights < 0.3 cfm/sf	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
5. Fenestration Air Leakage (402.4.4) – Swinging Doors < 0.5 cfm/sf	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
6. Recessed Lighting (402.4.5) – IC Rated, Sealed w/ Gasket or Caulk and Air Tight	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
7. Heating/Cooling System Controls (403.1) – Programmable Thermostat Required	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
8. HVAC Duct Sealing (403.2) – All ducts sealed with approved material	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
9. HVAC Duct Tightness Testing (403.2.2)– <b>CHOOSE ONE</b> <i>Note: Individual performing test is required to be HERS or BPI Certified.</i>  <input type="checkbox"/> <b>Post Construction Test</b> – Leakage to outdoors less than or equal to 8 cfm per 100 sf of conditioned floor area or a total leakage of less than or equal to 12 cfm per 100 sf of conditioned floor area at a pressure differential of 25 pascals. Includes Manufacturer's Air Handler Enclosure.  <input type="checkbox"/> <b>Rough In Test</b> - Total leakage is less than or equal to 6 cfm per 100 ft2 of conditioned floor area at a pressure differential of 25 pascals including Manufacturer's Air Handler Enclosure. If Air Handler is not installed, total leakage shall be less than or equal to 4 cfm per 100 ft2.  Test Performed By: _____ Address: _____ Date Test Was Performed: _____ <input type="checkbox"/> <b>HERS Certified</b> <input type="checkbox"/> <b>BPI Certified</b>	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
10. Building Cavities (403.2.3) - Building framing cavities shall not be used as supply ducts.	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
11. Mechanical Piping Insulation (403.3) – R3 Minimum	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
12. Circulating Hot Water System (403.4) – Piping insulated R2 minimum	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
13. Mechanical Ventilation (403.5) – Outdoor air intakes/exhaust require dampers.	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
14. Lighting Equipment (404.1) - 50% of the bulbs installed in permanent lighting fixtures shall be high efficiency (CFL's, LED's, etc.)	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
15. HVAC Equipment Sizing (403.6) – HVAC equipment shall be sized based on building loads calculated in accordance with ACCA Manual J.	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A

**Builder Signature:**

**Date:**

### 3. Prescriptive Requirements

#### Minimum Fenestration, Insulation and Energy Requirements (Climate Zone 3)

Fenestration U-Factor	0.50	Windows, Opaque Doors, Glazed Doors U = Thermal Transmittance Factor	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Glazed Fenestration SHGC	0.30	SHGC = Solar Heat Gain Coefficient	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Skylight U-Factor	0.65		<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Ceiling Insulation	R30		<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Exterior Wood Frame Wall	R13		<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Floor Over Un-Conditioned Space	R19		<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
HVAC Ducts in Attics	R8	R6 required in unconditioned basements and crawl spaces	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Conditioned Basement Wall	R 5/13	R5 Continuous or R13 Cavity	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Mass Wall	R 5/8		<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Crawl Space Wall (Closed)	R 5/13	R5 Continuous or R13 Cavity	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Slab on Grade Floors	0	R5 For Heated Slabs on Grade	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Cold Formed Steel Framing	Table 402.2.5	Cold Formed Steel Framing R Values meet the requirements of Table 402.2.5	<input type="checkbox"/> Complied	<input type="checkbox"/> N/A
Access Hatches and Doors - Doors from conditioned to unconditioned spaces shall be weather stripped and insulated.			<input type="checkbox"/> Complied	<input type="checkbox"/> N/A

**Builder Signature:**

**Date:**

**4. Energy Certificate** – This form is required to be filled out complete and posted on or in the electrical panel box.

Energy Efficiency Certificate			
Permit # _____			
Address: _____			
_____			
Insulation Ratings		R-Value	
ROOF/CEILING	With Attic	R -	_____
	Without Attic	R -	_____
WALLS			
Frame	R - _____	Basement	R - _____
Mass	R - _____	Crawlspace	R - _____
FLOORS	Over Unconditioned Space	R -	_____
HVAC DUCTS	Attice Space	R -	_____
	Basements and Crawl Space	R -	_____
Fenestration Ratings	U - Factor	SHGC	
Opaque Doors	_____	_____	
Windows	_____	_____	
Skylights	_____	_____	
Equipment Performance		Efficiency	
Heating System	HSPF/AFUE	_____	
Cooling System	SEER/COP	_____	
Water Heater/Boiler	EF/Ec or E1	_____	
Builder Signature: _____			
Date: _____			
Adopted Energy Code Edition: _____			
THIS CERTIFICATE SHALL BE PERMANENTLY POSTED ON OR IN THE ELECTRICAL PANEL BOX			

**AFUE** = Annual fuel utilization efficiency. Standard measurement of efficiency for gas and oil-fired furnaces. **(Minimum Efficiency of 78% Required)**

**COP** = Coefficient of Performance

**EF** = Energy Factor

**SHGC** = Solar Heat Gain Coefficient

**SEER** = Seasonal Energy Efficiency Ratio is a measure of the cooling efficiency of your air conditoner or Heat Pump. **(Minimum 13 SEER Required)**

**HSPF** = Heating Seasonal Performance Factor is a measure of the heating efficiency of a heat pump. **(Minimum 7.7 HSPF Required)**

Table 402.4.2 identifies the items required to be field verified if "**Visual Inspection**" is checked under the Mandatory Requirements (Item #2)

Table 402.4.2		
Air Barrier and Thermal Barrier	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier.
	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Breaks or joints in the air barrier are filled or repaired.
	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Air permeable insulation is not used as a sealing material. -
	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Air permeable insulation is inside of an air barrier. -
Ceiling/Attic	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.
	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Attic access (except unvented attic), knee wall door, or drop down stair is sealed.
Walls	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Corners and headers are insulated.
	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Junction of foundation and sill plate is sealed.
Windows and Doors	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Space between window/door jambs and framing is sealed.
Rim Joists	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Rim Joists are insulated and include an air barrier.
Floors (Including above-garage and cantilevered floors)	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Insulation is installed to maintain permanent contact with underside of subfloor decking. Air barrier is installed at any exposed edge of insulation.
Crawl Space Walls (Closed Crawl Space)	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Insulation is permanently attached to walls.
	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Exposed earth in unvented crawl spaces is covered with a Class I vapor retarder with overlapping joints taped.
Shafts, Penetrations	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.
Narrow cavities	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation.
Garage Separation	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Air sealing is provided between the garage and conditioned spaces.
Recessed Lighting	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Recessed light fixtures are air tight, IC rated, and sealed to drywall. <i>Exception: Fixtures in conditioned space.</i>
Plumbing and Wiring	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.
Shower/Tub on Exterior Wall	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Showers and tubs on exterior walls have insulation and an air barrier separating them from the exterior wall.
Electrical/Phone Box on Exterior Wall	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Air barrier extends behind boxes or air sealed type boxes are installed.
Common Wall	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Air barrier is installed in common wall between dwelling units.
HVAC Register Boots	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	HVAC register boots that penetrate building envelope are sealed to subfloor or drywall
Fireplace	<input type="checkbox"/> Complied <input type="checkbox"/> N/A	Fireplace walls include an air barrier.

**Table 402.4.2 is not required to be submitted to the Building & Codes Department but is to be used as a checklist to field verify the items as noted.**