

Residential Energy Conservation Rules



There are three options to comply with the energy code:

- I. **Prescriptive Package:** see chart on reverse side for insulation and glazing requirements. Decide if you will be installing 2x6 stud walls with R-20 insulation or using footnote (f), and make sure that detail is on your plans. All window NFRC (U-factor) labels should be left on windows until the insulation inspection has been approved. Provide required information for Options A or B below.
 - A) HVAC contractor shall size heating/cooling equipment to ACCA Manual J, 8th Edition. An ACCA Manual J 8th report shall be submitted with plans for new residences with a furnace. Heat Loss calculations from approved software choices (Wrightsoft, Adtek, Elite, Carmelsoft, Cool Calc, Avenir HeatCAD/LoopCAD, or Florida Solar Energy Center's Energy Gauge) are required. Calculations shall show the size, make, model, and BTU's/SEER Rating (A/C) for both the furnace and air conditioner.

The following thermal design parameters shall be used for these calculations:

 - a. Winter Outdoor Design Dry-bulb (4⁰F),
 - b. Winter Indoor Design Dry-bulb (72⁰F),
 - c. Summer Outdoor Design Dry-bulb (89⁰F),
 - d. Summer Indoor Design Dry-bulb (75⁰F),
 - e. Summer Design Wet-bulb (62⁰F),
 - f. 6368 Degree Days Heating, and
 - g. 479 Degree Days Cooling.
 - B) For new residences with a boiler, provide spec. sheet listing boiler efficiency rating.
- II. **REScheck Program:** provide REScheck Compliance Certification showing you pass the 2009 IECC; an architect may be able to help you with this. Heating/AC equipment to be detailed on REScheck report with BTUs and efficiency ratings. For a free software download, go to www.energycodes.gov on the web and click on REScheck.
- III. **Simulated Performance Alternative (HERS)** done by a certified energy rater: go to www.resnet.us to find certified raters. Larimer County allows a \$75 rebate on permit fee if a certified energy rater inspects and documents with a compliance report showing how the home meets or exceeds 2009 IECC residential requirements.

Please indicate which option you are choosing by marking I, II or III above.

IRC (Table N1102.1) Larimer County Single-Family Prescriptive Package^(h)

	Maximum	Maximum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum
Climate Zone	Fenestration U-Factor	Skylight U-factor ^(b)	Ceilings R-value ^(e)	frame wall R-value	Mass Wall R-value ^(g)	Floor R-value over unheated space	Basement Wall R-Value continuous /cavity ^(c)	Slab perimeter R-value/Depth ^(d)	Crawl Space R-value Cont./cavity ^(c)
5	0.32	0.60	38	20 ^(a) or 13+5 ^(f)	13/17	30 ⁽ⁱ⁾	10/13	10, 2ft.	10/13

- (a)** R-19 permitted to be compressed into a 2x6 cavity such that the R-value is reduced by R-1 or more shall be marked with the compressed batt R-value in addition to the full thickness R-value. If this method is used, supplement with insulated sheathing of at least R-2.
- (b)** The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
- (c)** The first R-value applies to continuous insulation, the second to framing cavity insulation; either insulation method meets the requirement.
- (d)** R-5 insulation shall be added to the required slab edge R-values for heated slabs.
- (e)** R-30 shall be deemed to satisfy the requirements of R-38 wherever full height R-30 insulation extends over the wall top plate at the eaves.
- (f)** 13+5 means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25% or less of the exterior, R-5 sheathing is not required where the structural sheathing is used. If structural sheathing covers more than 25% of the exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.
- (g)** The second R-value applies when more than half the insulation is on the interior.
- (h)** Larimer County will also accept a REScheck Compliance Report that passes using 2009 International Energy Conservation Code (IECC), and any Home Energy Rating Score (HERS) by a certified energy rater showing the home passes the 2009 IECC. For additional information on energy codes or free REScheck download, go to www.energycodes.gov.
- (i)** Or insulation sufficient to fill the framing cavity, R-19 minimum.

Equipment Sized to ACCA Manual J, 8th Edition by HVAC Contractor

Furnace Make & Model	Efficiency Rating	BTU/H of Furnace	AC Make & Model	Efficiency Rating	Size of AC	Name of HVAC Contractor

***A minimum of 50 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.**