



| | | | CZ 2 | CZ 3 | CZ 4 | Comments | |
|--|---|--------------------------------------|--|---|---|---|-----------|
| Insulation^A | Roofs | Opt A No Air Space | No c.i. ^K R-38 ceiling Rad Barrier | No c.i. R-30 ceiling Rad Barrier | R-8 c.i. R-38 ceiling Rad Barrier | | |
| | | Opt A With Air Space | No c.i. R-38 ceiling Rad Barrier | No c.i. R-30 ceiling Rad Barrier | R-6 c.i. R-38 ceiling Rad Barrier | | |
| | | Opt B ^E No Air Space | No b.r.d. ^K R-38 ceiling Rad Barrier | No b.r.d. R-30 ceiling Rad Barrier | R-18 b.r.d. R-38 ceiling No Rad Barrier | | |
| | | Opt B ^E With Air Space | No b.r.d. R-38 ceiling Rad Barrier | No b.r.d. R-30 ceiling Rad Barrier | R-13 b.r.d. R-38 ceiling No Rad Barrier | | |
| | | Opt C | No c.i. R-30 ceiling Rad Barrier Ducts in cond. space | No c.i. R-30 ceiling Rad Barrier Ducts in cond. space | No c.i. R-30 ceiling Rad Barrier Ducts in cond. space | | |
| | Walls | Above Grade | Framed ^F | U-0.051 | U-0.051 | U-0.051 | |
| | | | Mass Wall Interior ^G | U-0.070 R-13 | U-0.070 R-13 | U-0.070 R-13 | or higher |
| | | | Mass Wall Exterior ^G | U-0.125 R-8 | U-0.125 R-8 | U-0.125 R-8 | or higher |
| | | Below Grade | Below Grade Interior ^G | U-0.070 R-13 | U-0.070 R-13 | U-0.070 R-13 | or higher |
| | | | Below Grade Exterior ^G | U-0.200 R-5 | U-0.200 R-5 | U-0.200 R-5 | or higher |
| | Floors | Slab Perimeter | NR ^L | NR | NR | or higher | |
| | | Raised | U-0.037 R-19 | U-0.037 R-19 | U-0.037 R-19 | or higher | |
| | | Concrete Raised | U-0.092 R-8 | U-0.269 R 0 | U-0.269 R 0 | or higher | |
| | Roofing Products | Low- sloped | Aged Solar Reflectance | NR | NR | NR | |
| | | | Thermal Emittance | NR | NR | NR | |
| Steep- sloped | | Aged Solar Reflectance | NR | NR | NR | | |
| | | Thermal Emittance | NR | NR | NR | | |
| Fenestration | Maximum U factor ^H | | 0.32 | 0.32 | 0.32 | | |
| | Maximum SHGC ^I | | 0.25 | NR | 0.25 | | |
| | Maximum Total Area | | 20% | 20% | 20% | | |
| | Maximum West Facing Area | | 5% | NR | 5% | | |
| Space Heating^{B,C} | Electric-Resistance Allowed | | No | No | No | | |
| | If gas, AFUE | | MIN | MIN | MIN | Central furnace: ≥225,000 kBtuh 80% AFUE or higher ^N | |
| | If Heat Pump, Heating Seasonal Performance Factor (HSPF) | | MIN | MIN | MIN | Single-phase air source • Split: <65 kBtuh 8.2 HSPF • Packaged: <65 kBtuh 8.0 HSPF or higher ^N | |
| Space Cooling | SEER | | MIN | MIN | MIN | Central air conditioner or central air source heat pump • Split: <45 kBtuh 14.0 SEER/12.2 EER ≥45 but <65 kBtuh 14 SEER /11.7 EER • Packaged: <65 kBtuh 14 SEER/ 11 EER or higher ^N | |
| | Refrigerant Charge Verification or Charge Indicator Display | | REQ | NR | NR | | |
| | Whole House Fan ^J | | NR | NR | NR | | |
| Central System Air Handlers | Central Fan Integrated Ventilation System Fan Efficacy | | REQ | REQ | REQ | | |
| Ducts^D | Duct Insulation | | R-6 or R-8 ^M | R-6 | R-6 or R-8 ^M | or higher | |
| Water Heating | All Buildings | | Gas Storage ≤55 gallons; ≤105 kBtuh Tankless Instantaneous ≤200 kBtuh | | Apr 16, 2015: 0.675-(0.0015*V) ^O EF or higher | | |

Notes

- A The U-factors/R-values shown for ceiling, wall and raised floor insulation are for wood-frame construction with insulation installed between the framing members, with continuous insulation where appropriate. For alternative construction assemblies, see [Section 150.1\(c\)1A, B and C](#).
- B A supplemental heating unit may be installed in a space served directly or indirectly by a primary heating system, provided that the unit thermal capacity does not exceed 2 kW or 7,000 Btuh and is controlled by a time-limiting device not exceeding 30 minutes.
- C Furnaces shall have an electrical standby mode power consumption and electrical off mode power consumption not more than the following:
- Non-weatherized gas furnaces (not including mobile home furnaces)..... 10W
 - Non-weatherized oil-fired furnaces (not including mobile home furnaces)..... 11W
 - Electric furnaces 10W
- Central air conditioners and central air conditioning heat pumps manufactured on or after January 1, 2015, shall have an average off mode electrical power consumption of:
- Split-system air conditioners..... 30W
 - Split-system heat pumps..... 33W
 - Single-package air conditioners..... 30W
 - Single-package heat pumps 33W
 - Small-duct, high-velocity systems..... 30W
 - Space-constrained air conditioners..... 30W
 - Space-constrained heat pumps..... 33W
- D Duct sealing is a Mandatory Requirement in all climate zones, as confirmed through field verification and diagnostic testing. See [Section 150.0\(m\)11](#).
- E For Option B, where insulation directly below the roof deck is required, either R-13 insulation between rafters with an air space or R-18 insulation between the rafters with no air space between the insulation and underside of the roof deck is required.
- F U-factors can be met by cavity insulation alone or with continuous insulation alone, or with both cavity and continuous insulation that results in a U-factor \leq the U-factor shown. Any combination of cavity insulation and/or continuous insulation that results in a U-factor \leq the Prescriptive requirement is allowed.
- G Mass wall has a thermal heat capacity ≥ 7.0 Btuh-ft². Below grade “interior” denotes insulation installed on the inside surface of the wall. Below grade “exterior” denotes insulation installed on the outside surface of the wall.
- H The installed fenestration products shall meet the requirements of [Section 150.1\(c\)3](#).
- I The installed fenestration products shall meet the requirements of [Section 150.1\(c\)4](#).
- J When whole house fans (WHF) are required, only those listed in the [Energy Commission Title 20 Appliance Efficiency Database](#) may be installed. Compliance requires installation of one or more WHFs whose total airflow is capable of meeting or exceeding a minimum 1.5 cfm/ft² of conditioned floor area per [Section 150.1\(c\)12](#).
- K c.i. = continuous insulation
b.r.d. = below roof deck insulation
- L NR = No Requirement
- M R-8 is required if rigid insulation above or below the roof deck complies with Option A or B in prescriptive [Table 150.1-A](#). If Option C is used R-6 and duct leakage testing are required.
- N For information about other HVAC equipment efficiency requirements, refer to [Chapter 4 of the 2016 Residential Compliance Manual](#).
- O V = rated storage volume of water heater in gallons

For more information

- See Energy Code Ace Quick Reference Sheets: energycodeace.com/content/resources-fact-sheets/
 - Residential Heating & Cooling Equipment Minimum Efficiencies
 - Short Glossary of Terms



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