

## SUMMIT SUSTAINABLE BUILDING CODE CHECKLIST FOR NEW SFR'S

The following options have been created to meet the community goals for above code programs that are in line with the Climate Action Plan. The first option is the DOE ZERH Program requiring individual modeling and is based on a federal program. The second option is to utilize the thermal envelope requirements of the 2021 IECC as well as items listed below. The third option is to use the thermal envelope listed in the option, but will require the project to offset a minimum 25% of the annual energy usage of the home with a PV system.

**DOE ZERH PROGRAM** , or

**2021 IECC PRESCRIPTIVE OPTION** , or

- Forced air-furnace system, minimum 97% AFUE.
- Radiant heating system, minimum 95% AFUE.
- Heat pump minimum efficiency, Heating Seasonal Performance Factor (HSPF) 10
- High-efficacy LED lights, minimum 100%.
- Energy efficient water heater.
  - Electric, minimum 0.95 energy factor
  - Gas, minimum 0.76 energy factor.
- Provide an electrical car charging rough in, including a blanked electrical box, and a raceway terminating in the electrical panel per Article 625 of the 2020 NEC.
- Provide PV ready construction including a metal raceway from the electrical panel to the roof location where the panels will be installed, including a roof jack, a #8 copper ground, a 2 pull blank in the electrical panel and an electrical conduit from the electrical panel out to the electric meter.
- WaterSense fixtures throughout.
- HRV/ ERV, 65% sensible heat recovery efficiency, meeting minimum airflow rates per IRC installed.
- Maximum 30% of exterior walls to be fenestrations.
- Programmable thermostats.

Thermal envelope requirements:

Roof/ ceiling:	R60, or R49 uncompressed over the top plate
Above grade walls:	R30 cavity or R20 cavity, R5 continuous insulation (ci) or R13 cavity, R10 ci or R20 ci
Slabs, including slab edge:	R10
Fenestrations:	Max U 0.32
Floor R-value:	R38
Basement wall:	R15 ci or R19 cavity or R13 cavity, R5 ci
Mass Wall:	R19 ci or R21 cavity
Crawl space wall:	R15 ci or R19 cavity or R13 cavity, R5 ci
Blower Door:	ACH 2.7 at a pressure 0.2 inches w.g. (50 Pascals)

These specifications are based off of the 2021 IECC residential thermal envelope requirements as described in Table R402.1.3, which should be referred to for interpretation reasons.

**PV PRESCRIPTIVE OPTION**

- Forced air-furnace system, minimum 97% AFUE.
- Radiant heating system, minimum 95% AFUE.
- Heat pump efficiency, Heating Seasonal Performance Factor (HSPF) 10
- High-efficacy LED lights, minimum 100%.
- Energy efficient water heater.
  - Electric, minimum 0.95 energy factor
  - Gas, minimum 0.76 energy factor.
- Provide an electrical car charging rough in, including a blanked electrical box, and a raceway terminating in the electrical panel per Article 625 of the 2020 NEC.
- WaterSense fixtures throughout.
- HRV/ ERV, 65% sensible heat recovery efficiency, meeting minimum airflow rates per IRC installed.
- Maximum 30% of exterior walls to be fenestrations.
- Programmable thermostats.

Thermal envelope requirements:

Roof/ ceiling:	R49
Above grade walls:	R23 cavity or R20 cavity, R5 continues insulation (ci)
Slabs, including slab edge:	R10
Fenestrations:	Max U 0.35
Floor R-value:	R38
Basement wall:	R15 ci or R19 cavity or R13 cavity, R5 ci
Mass Wall:	R19 ci or R21 cavity
Crawl space wall:	R15 ci or R19 cavity or R13 cavity, R5 ci
Blower Door:	ACH 3.0 at a pressure 0.2 inches w.g. (50 Pascals)
PV system:	Provide an onsite PV system sized to provide 25% of the annual energy use determined through an engineered solar calculator approved by the Summit County Building Department. The PV system will be limited by the allowable maximum size as determined by the electrical service provider. *Residences over <b>4,000 sq. ft.</b> must have an estimated annual electrical consumption evaluation stamped by a Colorado state licensed electrical engineer, to be submitted with PV permit application.*

\*If either of the prescriptive options are chosen, no substitutions are allowed. If substitutions are needed, utilize the performance based DOE ZERH option.

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Applicant Signature

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Date