

Significant differences between the 2021 International Energy Conservation Code (2021 IECC) compared to 2018 IECC - with proposed Montana Amendments - April 28, 2022

Insulation

All insulation levels, window and door requirements remain the same as listed in 2018 IECC with Montana amendments.

A Montana amendment for exterior above grade wall insulation lists R-21 or R-20 + R-5ci or R-13 + R-10ci or R-15ci*.

*ci = continuous insulation. Foam sheathing over an exterior wall framing is an example of continuous insulation.

Ductwork testing

Montana amended the 2021 IECC - R403.3.5

The Montana amendment lists

“A duct leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.”

Air sealing / blower door testing.

2021 IECC - R402.4.6 requires installation of air-sealed electrical boxes at the building's thermal envelope.

- Electrical and communication outlet boxes located at the building's thermal boundary must be tested to NEMA OS 4 or OS 4 There is limited information on the availability of NEMA OS4 electrical boxes.

2021 IECC – R402.4.1.2 lists 3 ACH 50 for our climate zone as did the 2018 IECC with Montana amending the requirement to 4 ACH 50 or less. 2021 IECC includes a new option of a leakage rate of less than 0.30 cfm / sq.ft. of the dwelling unit enclosed area, which should make it easier for small houses to pass the blower door test.

Ventilation

2021 IECC - R 403.6.2 requires more efficient motors for ventilation equipment.

2021 IECC - R403.6.3 requires mechanical ventilation systems to pass an air flow test.

- Kitchen hoods are exempt if they have at least 6-inch duct, vented to exterior and with not more than one elbow. Note: it is difficult to measure kitchen range hood air flows because special equipment is needed.

Code official may require third party testing.

2018 IECC does not require any testing of a mechanical ventilation system.

Lighting

2021 IECC - Section R-404.1 lists all permanent light fixtures must be high-efficacy lighting sources.

- Kitchen appliance lights are exempt.

2018 IECC required 90%

Section R-404.2 – An occupancy sensor or dimmer switch is required on all permanent light fixtures.

- Bathrooms, hallways, exterior and security lights are exempt.

Exterior light power of greater than 30 watts must have a manual and an automatic on/off switch. Control must turn light off in daylight and must reset within 24 hours.

- Lights serving multiple units are exempt.

Additional features

2021 IECC Section R408 - Requires one additional feature be added to the house. Options listed below.

1. Enhanced envelope performance. An analysis showing the overall building total building envelope (UA) is 95 % or less of the (UA) of an identical proposed minimum code building.

2. Installation of 95% furnace / 16 SEER air conditioner.

- Note: boilers are not listed as an option.

3. Installation of 82 EF (gas) water heater or 2 EF electric water heater.

4. 100 % of ducts and air handler located entirely within the building's thermal envelope.

5. 100% of ductless thermal distribution or hydronic thermal distribution system located completely inside the building's thermal envelope.

6. Achieve at least 3 ACH 50 and install HRV or ERV with at least 75% sensible recovery efficiency.