CHANGES TO MANUAL J GUIDANCE

05.19.2026

CoolCalc Updates

June 11, 2026

CoolCalc loads will no longer be accepted after the sunset date.

While there are some block load situations to which CoolCalc is suited, we have found the software has sub-optimal performance calculating loads in critical situations where defaults and assumptions cannot be used.

We are allowing time to purchase and learn an alternate.

We will work with you until you can switch to another ACCA Manual J approved load calculation software. However, in some situations a CoolCalc generated Manual J load calculation may be rejected when it does not meet our heat load accuracy standards.

Design Conditions

Indoor and Outdoor

Outdoor Design Temperatures

- The nearest city's outdoor design temperature from your ACCA software must be used.
- Loads using 0°F winter and 100°F summer design temperatures will no longer be accepted.

Indoor Design Temperatures

- Acceptable indoor design temperature range is now 72°F - 75°F for heating and cooling.
- Loads using 71°F and lower indoor design temperatures will no longer be accepted.
- 70°F winter indoor design temperature is a default in Manual J. The range of acceptable indoor design conditions found in ACCA Manual RS places 70°F at the very bottom of the range of human comfort and risk of condensation forming on interior surfaces of exterior walls.

Homes With Multiple Systems

One System vs. Two or More Systems

Homes with two or more systems must have both systems modeled on a single heat load, and the report should include a breakdown by system.

Each modeled room or space must be assigned to the appropriate system.

Infiltration load should be split between the systems based on floor area or volume.

Default system names like "System1" should be changed to describe the type of system and location of the room/spaces served by that system.

- ***Example***: *"Basement Mini-Split Ductless Heat Pump" "First and Second Story Ducted Heat Pump"*

Block vs. Room-by-Room

Ductwork Changes and Zoning

All projects with proposed zoning or ductwork changes must have a room-by-room load calculation performed.

When room-by-room load is required, a report showing the airflow (CFM) delivered to each room is also required.

Note: *Average Exposure Diversity (AED) excursions indicate the need for zoning an area of the home to maintain temperature effectively.*

Foundation Modeling

Create a Separate Room for Foundations

The use of "floor-over" crawlspace and "floor-over" basement selections will no longer be accepted.

- The default "floor-over" selections do not capture the full load of foundations, causing artificially low load results.

All above grade and below grade foundation spaces must be modeled on the load using the following method:

1. Create separate rooms for crawl spaces and basements, this is not required for on-grade slabs as they are already part of a room.
    - This new room should be labeled "crawl space" or "basement".
2. Record above-grade and below-grade foundation wall area as well as any windows and doors.
3. Record floors as foundation floor selections; dirt floor, below-grade slab, below-grade basement floor and below-grade crawl floor.

Default Values

Avoiding the Default Snowball

There are several critical areas of the heat load calculation where we should avoid the use of default or subjective values.

- **R-values** – All R-values entered into the heat load should be confirmed, even (post-work) R-values.
- **Infiltration** – Single Point Blower Door infiltration calculation method shall be used.
  - Simplified Infiltration calculation methods are no longer accepted for homes undergoing infiltration testing.
  - If you are unsure of the blower door number, consult your BE partner. Seek advice on estimating air-sealing efforts and final blower door estimation.
- **Area** – All exterior surface areas must be measured (above-grade wall, below-grade wall, foundation floor, attic).
- **Recovery Ventilation** – ERV/HRV ventilation must appear on the heat load, over-ventilation may need to be remedied (interlocked inlet).

Back-Up Heat Sizing on Reservation

Heat Pump-Specific (Cold-Climate)

Backup heat, or emergency heat, refers to the heat source that operates when the outdoor temperature is low enough that the Air-Source Heat Pump compressor operation is locked out.

For Ducted Models

- The size of the backup (emergency) heat needs to meet or beat the total heat load for the space that system serves, within ACCA Manual S sizing guidelines.

For Ductless Models

- The operation of backup heating systems (baseboard, ceiling cable) must be controlled by the ductless unit.

Controls

Considerations for Cold-Climate and Electrification Efforts

Our goal is to minimize operation of *backup and **supplemental resistance heat.

Supplemental heat Btu is limited to the gap between the unit output and total heat load.

Lockout - All backup and supplemental heat should be locked out when outdoor temperature is above the thermal balance point.

Heater Element Staging - All ASHP installed with multi-circuit electric resistance heat must bring individual circuits on in stages.

*Backup heat operates without the compressor.

**Supplemental heat operates with the compressor.

Controls

Considerations for Cold-Climate and Electrification Efforts

Timer-operated staging is acceptable IF the backup heat is locked out and supplemental heat Btu is limited to the gap between the unit output and total heat load.

Staging resistance heat via high temperature limit is not allowed.

Communicating equipment controllers are preferred.

Set-point differential staging is acceptable IF the backup heat is locked out and supplemental heat Btu is limited to the gap between the unit output and total heat load.

Customer Education & Acceptance

Ameren ILLINOIS | Energy Efficiency PROGRAM

Prepare customers for experiences unique to ASHPs.

Balance Point – Set by design, sometimes altered for comfort

Extended runtime – Efficiency of long runs vs. short runs

Stat Operation – Staging of compressors and supplemental heat

Temperature setpoint and room temperature expectations (differential)

Operation of Emergency (Backup) Heat

Temperature Setback Limitations – avoid setbacks greater than 3°F (min and max indoor temperatures when not occupied)

System Operation – Balance point, defrost, emergency, reducing the use of auxiliary heat, and improving cold weather performance

Program Influence and Attribution

Energy Efficiency
PROGRAM