



MANUAL J DESIGN CRITERIA

Manual J Design Criteria

Heating and cooling load calculations (Manual J or approved equivalent) are required to support HVAC system sizing and design in accordance with the **New Mexico Residential Energy Code and New Mexico Residential Code**. Use the criteria below as the project baseline for indoor conditions, and document location-specific outdoor design conditions in the reference table provided.

To be compliant, any submitted design criteria should include all of the following:

- Climatic data design conditions for each city as established by ACCA Manual J. – See chart at end of document for the specific criteria
- All projects will use the indoor winter dry bulb of 72°F and indoor summer dry bulb of 75°F. (Section R302.1 of the 2021 IECC New Mexico Residential Energy Code)
- Building orientation
 - This should show exactly what exposure each face of the building is getting to accurately estimate solar heat gain.

To be compliant, any submitted design criteria should include all of the following (cont.):

- Infiltration calculation method used (pick one of the three)
 - Simplified method
 - Detailed method
 - Blower door test method
- Infiltration envelope tightness categories (pick one)
 - Tight, semi-tight, and average may be used for new construction
 - Semi-loose and loose may be used for older existing homes
- Fireplace Infiltration
 - This is only for wood burning fireplaces where we are relying on the flue control for air sealing
- Loads for ducts located outside of the thermal envelope
- If the design includes an ERV, HRV, then the loads should include outside air introduced into the return system and/or combustion air
- Conditioned area square footage.
 - Any areas that are unconditioned within the building should be excluded.
- The above grade building volume is the metric to include for volume
- Occupants/People
 - This number is calculated as the number of bedrooms plus 1
- Appliance/equipment entered for cooling loads
 - Cooling loads from Table 6A of ACCA Manual J
 - i.e. clothes dryer, range with vented hood, refrigerator, clothes washer, electronic equipment, and lighting allowance – 2,400 sensible loads
- Construction descriptions
 - These should be exactly identical to the assemblies shown on the plans with no deviations between the two.

Standard Indoor Design Conditions

Season	Indoor Design Condition
Winter	Indoor Dry Bulb: 72°F
Summer	Indoor Dry Bulb: 75°F

Note — Apply these indoor setpoints consistently across all projects

Standard Relative Humidity Conditions

Season	Relative Humidity Condition
Winter	30%
Summer	50%

Note — Apply these indoor setpoints consistently across all projects

Outdoor Design Conditions Reference By Location

City	Elevation	Latitude	Winter Outdoor Dry Bulb	Summer Outdoor Dry Bulb	Summer Wet Bulb	Summer Design Grains (50%)
Artesia	3548	32	19	100	67	-14
Carlsbad	3293	32	23	98	66	-16
Clovis	4295	34	15	93	60	-19
Hobbs	3659	32	18	99	66	-18
Roswell	3676	33	20	96	65	-19
Tucumcari	4039	35	15	95	65	-17

Sources of data provided in Table:

ACCA Manual J Table 1A