

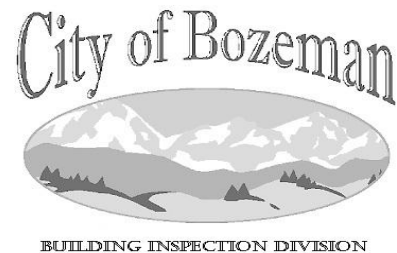
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2003 Energy Conservation Code Requirements

Important facts you should know for
compliance with the Energy Conservation
Code



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Commercial Energy Code Compliance

The Commercial code allows three design options: COMCheck*, a Federal Department of Energy computer program; ASHRAE/IESNA 90.1; and Chapter Eight of the International Energy Conservation Code (IECC) (Design by Acceptable Practice for Commercial Buildings). Areas to be designed are the heating and cooling systems, the building envelope and glazing, and the building lighting fixtures. Of particular note is the need to dual switch lighting fixtures or provide occupancy sensors in each room or area with more than one light fixture. Also exempted from dual switched lights are corridors, storerooms, restrooms or public lobbies.

Residential Energy Code Compliance

The Residential Energy code has changed dramatically from the previous code adopted in 1993. There are four design options available for residential construction: RESCheck*, a Federal Department of Energy computer program; Chapter Four of the IECC (Design by Systems Analysis); Chapter Five of the IECC (Design by Component Performance Approach); and Chapter Six of the IECC (Simplified Prescriptive Requirements, maximum 15% exterior window area single family, 25% R-2/R-4/ townhouses). Montana is in a climate zone 15 if you are utilizing any of the tables out of the Energy Conservation Code.

*See the DOE website for a free download program—www.energycodes.gov. This method is generally the most economical way to design an energy efficient system.

Simplified Prescriptive Path Requirements

| | |
|----------------------------|--|
| Glazing U-Factor- | 0.35 (maximum) |
| Ceiling R-Factor - | R-49 (exception R-38 over entire ceiling area); energy heal trusses required |
| Exterior Wall R-Factor - | R-21 |
| Floor (over crawl space) - | R-21 |
| Basement Walls - | R-11 (can be deferred until basement is finished |
| Slab Perimeter - | R-13 (4 feet combined horizontal and vertical) |
| Crawl Space Walls - | R-20 |
| Duct Insulation - | R-11 supply air*, R-6 return air |
| | *(R-8 per State Amendment) |

Crawl Space Insulation & Ventilation

Option #1: When the crawl space foundation walls are insulated, no foundation vents are allowed—Crawl space is either ventilated with an exhaust fan (1 cfm/50 sq. ft. min.) or conditioned with a heating register (no return air). If crawlspace is conditioned, then ductwork is to be sealed but does not have to be insulated- floor and ceiling penetrations are to be sealed appropriately. Gas fired furnaces are to be of the direct vent type or other approved alternative. A vapor retardant material is required on the ground (1 perm rating, minimum 6 mil). Temporary foundation ventilation cutouts could be utilized to aid in drying out a wet crawlspace, but must be permanently sealed before final inspection.

Option #2: When the crawl space ceiling is insulated—foundation vents are allowed (or crawlspace can be ventilated or conditioned as above). Ductwork must be sealed and insulated. Floor and ceiling penetrations are to be sealed appropriately. Most gas fired furnaces are allowed to be installed in the crawl space when outside combustion air is brought in.

A vapor retardant material is required on the ground (1 perm rating, minimum 6 mil); re-circulating waterlines are to be insulated. It is suggested that all waterlines be insulated when using this option.

Note: Maintaining a dry crawlspace and dry lumber throughout the construction process will help alleviate mold growth. Sealing the vapor retarder to the walls and sealing the overlapping joints will also aid in keeping mold growth under control by sealing moisture out of the crawlspace area.