

BEFORE THE DEPARTMENT OF LABOR AND INDUSTRY  
STATE OF MONTANA

In the matter of the amendment of ) NOTICE OF AMENDMENT  
ARM 24.301.161, model energy code )

TO: All Concerned Persons

1. On October 29, 2009, the Department of Labor and Industry (department) published MAR Notice No. 24-301-239 regarding the public hearing on the proposed amendment of the above-stated rule, at page 1844 of the 2009 Montana Administrative Register, issue no. 20.

2. On November 30, 2009, a public hearing was held on the proposed amendment of the above-stated rule in Helena. Several comments were received by the December 14, 2009, deadline.

3. The department has thoroughly considered the comments received. A summary of the comments received and the board's responses are as follows:

COMMENT 1: Numerous verbal and written comments were received in response to the proposed adoption of the International Code Council's 2009 edition of the International Energy Conservation Code (IECC). Nearly all the comments were in favor of the proposal to adopt the 2009 IECC code, but advocated more stringent building requirements aimed at energy efficiency requirements than those set forth by the 2009 IECC.

RESPONSE 1: The Montana Legislature, under 50-60-203, MCA, requires the department to adopt rules that relate to the conservation of energy that are consistent with and properly balance the public policy considerations set forth 50-60-801, MCA, namely, to protect and improve economic and environmental well-being and energy security, while recognizing the basic need for safe and affordable shelter. The department, through stakeholder meetings, has struck that balance and will continue to cultivate stakeholder input for future determinations in energy code development.

COMMENT 2: Of the comments in favor of the adoption of the 2009 code mentioned above, there were six areas of focus. Numerous commenters joined in support of the specific recommendations submitted by Jim Baerg of Montana Energy+Design (herein, "ME+D") and addressed by subject area below:

a. Basement Walls: The current rule allowed a delay in the insulation of basement walls, until such time as the basement was actually finished for occupancy. The proposed rule eliminates this so-called "basement exception" and will now require insulation of basement walls to be completed at the time of construction and at an R-value of 15 continuous or 19 cavity, as set forth in the 2009 IECC.

A majority of comments supported insulating the basement sooner, rather than later. Others asked that a "more stringent" R-value be imposed, without specifying what that would be. A commenter stated that that "the highest possible basement insulation requirements" would result in an "optimum balance of energy conservation, construction costs, and reasonable economic payback period." Another commenter stated that a minimum of R-20 should be required on basement and crawlspace walls, rim bands, and under basement slabs.

Response: The 2009 IECC allows two methods of basement insulation: R-15 applied continuous or R-19 applied in cavities. These R-values represent consideration for currently available manufactured products and allow for the two methodologies most often used in field construction. As manufacturing products change and more varieties in field installation methods become apparent, the department will evaluate those processes to allow a greater expansion of products, methods, and R-values.

b. Walls: The 2009 IECC requires R-20 code values for wall insulation. The department proposes to increase that value to R-21. The ME+D urged setting the value at R-25.

Response: The 2009 IECC dictates an R-value of wood framed walls to be R-20 (cavity). The department evaluated stakeholder input, including the study calling for increases to R-25. The department concluded that moving to R-21 was most prudent now, due to the manufacturer's product line being most conducive to this R-21 value. As code development processes move forward, including stakeholder input, the department will monitor the available products and methods becoming available and gauge those products and R-value assemblies against the department's responsibility for public welfare, as well as the financial impact such code requirements have on construction costs and other economic factors.

c. Ceilings: Section 1(e) of the proposed rule change reduces the amount of ceiling that is allowed to have a lower R-value (R-30) than that required in attic space (R-49). Numerous commenters supported the proposal to reduce the ceiling space, and also supported the ME+D proposal to increase the ceiling space to R-49.

Response: The department recognizes the value of this comment and the increase in code requirement, proposed by the department, is a great example of cultivating and embracing informed comment on the subject. Presently, the 2009 IECC allows 500 square feet or 20 percent of the total insulated ceiling area to be reduced to R-30, if the roof/ceiling assembly does not allow sufficient space.

The department, based on stakeholder input, struck a compromise between current code language and the requested zero square feet or zero percent area of reduced R-value. The department's result will still allow 250 square feet of reduced R-value or ten percent of insulated ceiling area; this change results in a 100 percent increase in area, now required to have full R-49 ceiling insulation.

d. Windows: The 2009 IECC requires a U-factor of 35 for windows. BCB proposed to require U-33. The ME+D proposal requested "tuned" windows, which would specify window type and performance based on orientation of the window, with relation to North, South, East or West. A commenter urged mandatory use of U-30 or less.

Response: After hearing stakeholder comment on this issue, the department determined that setting window performance criteria for each side of the house would be too confusing and troublesome for builders and homeowners. The department was pleased that the Building Codes Council offered a compromise in the form of a reduced U-factor specification to 0.33. The department concluded that this is a good balance and feels that window manufacturers will have product available in that U-factor.

e. Allowable Air Exchange: The 2009 IECC sets allowable air changes to 7ACH50 and allows a prescriptive list option. The proposed rule sets the allowable air changes to 4ACH50 and proposed no changes to the prescriptive list. The ME+D comment initially supported 4ACH50 at the hearing and requested an improved prescriptive list.

In subsequent written comments, ME+D amended its comment to set allowable air changes to 5ACH50, rather than 4ACH50, stating that the allowable air change threshold would be a significant improvement if testing was available and that the prescriptive option will be used in almost all cases, but relies on vigilant building inspectors and builders.

A commenter recommended mandatory 3ACH50 air exchange. Another commenter urged the department to set maximum acceptable blower door test results at 5ACH50, rather than the proposed 4ACH50, to increase the number of builders who will select this option from the code, rather than the visual inspection option in 402.4.2.2. A little more than half of the comments advocated for an energy efficiency or performance test (such as a blower door test) to be added as a code requirement for newly built homes.

Response: The department derived the original proposal of 4ACH based on strong stakeholder input. Until a good supply of blower door test units become available to owners and builders, and their use is considered regular, the tighter specification of 4ACH is valid. Once these blower door units become more available and used, the department will be very interested in evaluating the suggested ACH parameter based on stakeholder input.

f. Ventilation: The 2009 IECC does not require mechanical ventilation. The department proposed the same. However, the ME+D proposal requested mechanical ventilation per ASHREA 60.2.

Response: The department evaluated the use of the additional standard (ASHREA) for ventilation. Neither the 2009 IECC nor the code development committees embraced the ASHREA 60.2 as a referenced standard. The department has amended, after stakeholder request, the 2009 edition of the International Mechanical

Code to require all single family houses to have a minimum benchmark for ventilation through mechanical means and controlled by timer or humidistat.

COMMENT 3: A commenter asked that the department adopt residential energy codes to exceed IECC standards by at least 20 percent.

RESPONSE 3: The department's role is to balance the increases in code requirements with that of welfare and economic considerations. The U.S. Department of Energy estimates that the 2009 IECC increases energy efficiency and conservation 15 to 18 percent, over that of the 2006 edition. The department, through this adoption proposal process, has also increased other energy code requirements above those mandated in the 2009 IECC; thereby adding to the increases in energy efficiency and conservation above 15 to 18 percent.

COMMENT 4: A small group of commenters urged to adopt the rules as proposed, but suggested that the Building Codes Council explore or encourage possible solutions to the problem of lack of enforcement.

RESPONSE 4: The energy code is applicable to almost all buildings per statute. Enforcement of the energy code is limited to inspection by local jurisdictions certified by the department and a "self-certification" process detailed in statute. Changes to the current enforcement scenario will require direct intervention by the legislature.

COMMENT 5: A small group of commenters stated that there should be no building code requirement at all, stating "a person should be allowed to build a house out of plywood and heat it with solar electricity," and "building codes are supposed to be for safety and integrity, not efficiency or sustainability."

RESPONSE 5: The department will maintain building code requirements that incorporate energy efficiency standards under the rationale provided to Response 1.

4. The department has amended ARM 24.301.161 exactly as proposed.

/s/ DARCEE L. MOE  
Darcee L. Moe  
Alternate Rule Reviewer

/s/ KEITH KELLY  
Keith Kelly, Commissioner  
DEPARTMENT OF LABOR AND INDUSTRY

Certified to the Secretary of State March 15, 2010