

*Community Development Department
Building Inspections Division
Alan Peterson, Building Official*

NEW HOME BUILDER UPDATE

The 2015 Minnesota Residential **Energy Code** includes significant new requirements.
Here is a summary of selected sections.*

R402 Building Thermal Envelope. New minimum R-values for foundation, wall and ceiling insulation; and maximum fenestration U-values have been introduced:

Table R402.1.1

Insulation and Fenestration Requirements by Component^a

Fenestration U-Factor	Skylight U-Factor	Ceiling R-Value ^b	Wood Frame Wall R-Value ^c	Mass Wall R-Value ^{d,e}	Floor R-Value	Basement Wall R-Value ^f	Slab ^h R-Value & Depth	Crawl Space ^g R-Value
0.32	0.55	49	20, 13+5	15/20	30 ^f	15	10, 3.5 ft.	15

^aR-Values are minimums. U-Values are maximums.

^bRoof/ceiling assemblies shall have a minimum 6-inch energy heel.

^cFirst value is cavity insulation, second is continuous insulation or insulated siding, so “13=5” means R-13 cavity insulation plus R-5 continuous insulation or insulated siding. If structural sheathing covers 40% or less of the exterior, continuous insulation R-value shall be permitted to be reduced by no more than R-3 in the locations where structural sheathing is used to maintain a consistent total sheathing thickness.

^dThe second R-value applies when more than half the insulation is on the interior of the mass walls.

^eWhen using a log-type construction for thermal mass walls the following applies:

(1) a minimum of a 7-inch log shall be used; and

(2) the U-value of fenestration products shall be 0.29 overall on average or better.

^fOr insulation sufficient to fill the framing cavity, R-19 minimum.

^gSee Section R402.2.8. A minimum R-19 cavity insulation is required in wood foundation walls.

^hInsulation R-values for heated slabs shall be installed to the depth indicated or to the top of the footing, whichever is less.

R402.2.8 Basement walls. Foundation walls enclosing conditioned basements shall be insulated in accordance with the manufacturer’s installation instructions from the top of the basement wall to 10 feet below grade or to the top of the footing, whichever is less. Concrete and masonry foundation walls shall be insulated to R-15. A minimum of R-10 is required to be on the exterior of the wall.

R402.4 Air Leakage. A written report showing the results of a blower door test shall be presented to the building official. The report is to be signed by the party who conducted the test and must demonstrate that the building or dwelling has an air leakage rate of not more than 3 air changes per hour at a pressure of 50 Pascals (0.2 inches water column.) Air changes per hour at 50 Pascals is the same as (CFM at 50 Pascals X 60) ÷ Volume.

R403.1 Controls. A programmable thermostat is required where the primary heating system is a forced-air furnace.

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NEW HOME BUILDER UPDATE (CONTINUED)

R403.2.2 Sealing. All joints and seams in ducts shall be sealed in a manner that complies with the Minnesota Mechanical Code. When ducts are located outside of the building's thermal envelope, an air leakage test shall be performed on the entire duct system. The test must demonstrate duct leakage is no more than 4 cfm per 100 square feet of conditioned floor area at a pressure differential of 0.1 water column (25 Pascals) across the entire system, including the manufacturer's air handler enclosure.

R403.2.3 Building cavities. Building framing cavities shall not be used as ducts or plenums.

R403.3 Mechanical system piping insulation. Piping carrying fluids greater than 105 degrees F or below 55 degrees F shall be insulated to a min. of R-3. When located outside, such insulation must be protected from damage.

R403.4 Service hot water systems. New insulation requirements have been added for domestic hot water pipes. See code for specific requirements.

R403.5 Mechanical ventilation. Each new building shall be provided with a balanced mechanical ventilation system that is +/- 10 percent of the system design capacity.

R404.1 Lighting equipment. A minimum of 75% of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.

*The 2015 Minnesota Residential Code can now be viewed online at:

<http://codes.iccsafe.org/app/book/toc/2015/Minnesota/Residential/index.html>

Please refer to the code for exact language on requirements and exceptions.