Energy Diagnostics, Inc.
405 E. Archer Way
Valparaiso, IN 46383

Toll Free: 800-390-8091
Phone: 219-464-4457
Fax: 219-464-0035
E-mail:
email@energydiagnostics.net

2015 MRC Chapter 11 (Energy Code) Changes Punch

- **All new homes must be blower door tested by a third party**
- **Blower door requirements are now 4 air changes per hour (ach) vs the 7 ach that it was for the previous code**
- **Duct leakage testing is required for all new homes that have ducts ran to un-conditioned space (attic, vented crawl etc.)**
- **Duct test requirements:**
  - **-Post construction: 4 cfm per 100 sqft of to outside or total duct loss**
  - **-Rough-in: 4 cfm per 100 sqft of total duct loss if furnace is installed or 3 cfm per 100 sqft if furnace is not installed**
- **Framed cavities can no longer be used as ducts, everything must me hard/flex ducted**
- **Slight changes to the prescriptive insulation table were made**
- **ACCA Manual J & S's are now required by the energy code and will be needed during the permitting stage**
- **Whole house mechanical ventilation is now required on all new homes due to the tightened ach requirements and there are three different options**
  - **-Exhaust only: Continuous run bath fans**
  - **-Supply only: Air cycler systems**
  - **-Balanced: HRV/ERV's**
- **75 percent of permanently installed lighting fixtures must use high efficacy bulbs (CFL's, LED's, etc.)**

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The Four Code Compliance Paths

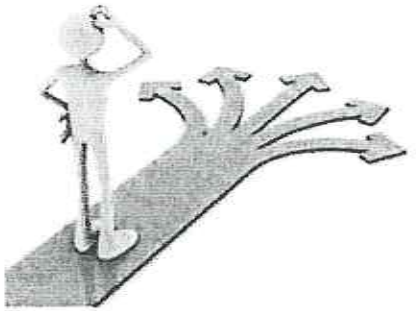
- **Prescriptive Path-** R-values based off of table N1102.1.1 or Assembly U Factors based off of table N1102.1.3. Must follow (mandatory) and (prescriptive) code items. One possible insulation spec tradeoff

- **Total UA Path (prescriptive)-** Based off of the total UA of the home. REScheck approach. Must follow (mandatory) and (prescriptive) code items. Only takes thermal envelope into account. Minimal insulation spec tradeoff potential

- **Performance Path-** Based off of homes simulated performance per section N1105. REMrate approach. Must follow (mandatory) code items only. Takes thermal envelope and home performance testing results into account. Max insulation spec tradeoff potential

- **ERI Path (performance)-** Based off an Energy Rating Index analysis per section N1106. Must follow (mandatory) code items only. Takes thermal envelope, performance testing, HVAC, lighting, and appliances into account. Good insulation spec tradeoff potential but held to the limit of the 2009 IECC table R402.1.1 or R402.1.3 prescriptive insulation table

2015 MRC, Chapter 11
Compliance Pathways at a Glance



	Insulation and Fenestration **Table** Minimums	UA Tradeoffs per Software Calculations (REScheck)	Whole-House Performance Tradeoffs per Software Calculations (REM/Rate)	Energy Rating Index Minimum (HERS)	Air Barrier & Insulation Table (N1102.4.1.1)	Blower Door Test (ACH < 4)	Duct Tightness Test (outside building thermal envelope)	Duct Insulation R-8 (outside building thermal envelope)	Duct Insulation R-6 (outside building thermal envelope)	All Hard Pipe or Flex Ducting (building cavities **not** used as duct runs)	Ducts, Air Handlers and Filter Box Sealing	Hot Water Pipe Insulation R-3	Mechanical System Pipe Insulation R-3 (fluids above 105°F or below 55°F)	Manual J, D, S	Whole- House Mechanical Ventilation	75 % High Efficacy Lighting
Prescriptive	x				x	x	x	x		x	x	x	x	x	x	x
Total UA (REScheck)		x			x	x	x	x		x	x	x	x	x	x	x
Performance			x		x	x	x		x	x	x		x	x	x	x
ERI	x			x	x	x	x		x	x	x		x	x	x	x

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www.energydiagnosticsinc.com

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N1102.4.1.1 (R402.4.1.1) Installation.
The components of the *building thermal envelope* as listed in Table N1102.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table N1102.4.1.1, as applicable to the method of construction. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

TABLE N1102.4.1.1 (R402.4.1.1) AIR BARRIER AND INSULATION INSTALLATION

COMPONENT	CRITERIA[a]
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stair, or knee wall doors to unconditioned attic spaces shall be sealed.
Walls	Corners and headers shall be insulated and the junction of the foundation and sill plate shall be sealed. The junction of the top plate and top of exterior walls shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed.
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.
Rim joists	Rim joists shall be insulated and include the air barrier.
Floors (including above-garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.
Shower/tub on exterior wall	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.
Fireplace	An air barrier shall be installed on fireplace walls.

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.