

Heating and Cooling Equipment Sizing- Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling methodologies. The Manual S and Manual J calculations shall be submitted prior to the rough in inspections.

Air Leakage Testing (Blower Door) – The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding the limits of the compliance path chosen. Testing shall be conducted by a certified independent third party A signed written report of the test results shall be provided to the building official.

Energy Code Compliance Paths

Energy code provisions require you to choose one of four alternative compliance paths to demonstrate code compliance. Indicate the path you choose below by checking one of the following boxes and completing the instructions.

Prescriptive (as prescribed by the code)

If you choose to use the prescriptive method of compliance, you may demonstrate compliance by completing the attached Prescriptive Compliance Report Form. The prescriptive insulation materials and methods shown on the building plans shall match what is indicated on the compliance report.

Total UA Alternative (prescriptive trade-off method)

Compliance with the Total UA Alternative method may be demonstrated by completing a compliance report using REScheck software provided free of charge at energycodes.gov. At present, REScheck does not offer a code edition incorporating State of Michigan amendments. However, you may use the 2015 International Energy Conservation Code (**2015 IECC**) since it meets or exceeds Michigan requirements. Use "Muskegon County or Muskegon, Michigan" for location criteria.

Please note that the building plans shall show the same materials and methods you use to complete the REScheck form. For example, if you use basement wall insulation in REScheck, such insulation should be clearly indicated on the building plans too.

Simulated Performance Alternative (performance analysis)

Certain commercially available compliance software (e.g. REM/RATE, etc.) may be used to demonstrate that the proposed construction will have an annual energy cost that is less than or equal to the energy cost of the standard reference design. Please see Section N1105 of the code for specific criteria.

Such software shall generate a compliance report that documents that the proposed design complies and shall include information outlined in Section N1105.

Above Code Programs

Compliance with certain energy efficiency programs such as Energy Star Version 3 and ICC 700-2012 "silver" are acceptable. See Section N1101.7 and N1106 for specific provisions. Provide a compliance report that documents that the proposed design meets program requirements.

Prescriptive Compliance Method

If using the prescriptive compliance method, the prescribe values listed in the table below are the minimum insulation requirements. Indicate the proposed values of insulation for each component of the proposed structure. Please note that such components shall meet or exceed the performance of the prescribed values.

Component Description	Prescribed Value	Proposed Value	Comment
Window U-Factor	0.32		
^b Skylight U-Factor	0.55		
Ceiling R-Value	38		
Wood Frame R-Value	20 or 13+5		
^h Mass Wall R-Value	13/17		
Floor R-Value (if the basement or crawl space is not insulated)	30		
^c Basement Wall R-Value	10/13		
^e Slab R-Value/Depth	10/2 feet		
^d Crawl Space Wall R-Value	15/19		
Ducts outside building thermal envelope (i.e. attic spaces) R-Value	8		
Ducts within building but outside conditioned space (i.e. crawls spaces) R-Value	6		
Ducts within building envelope assembly, insulation placed between duct and unconditioned space R-value	8		
High-efficacy lamps in permanently installed light fixtures - Percentage	75%		
Attic access doors - Doors shall be weather-stripped and insulated to level of ceiling insulation. A wood frame or equivalent retainer is required around the access when loose fill insulation is used.			

- Typical House

- a. R-values are minimums. U-factors are maximums.
- b. The fenestration U-factor excludes skylights.
- c. "10/13" means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.
- d. "15/19" means R-15 continuous insulation on the interior or exterior of the home or R-19 cavity insulation at the interior of the crawlspace wall. "15/19" may be met with R-13 cavity insulation on the interior of the crawlspace wall plus R-5 continuous insulation on the interior or exterior of the home.
- e. R-5 shall be added to the required slab edge R-values for heated slabs.
- f. Or insulation sufficient to fill the framing cavity, R-19 minimum.
- g. First 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 may be reduced by no more than R-3 in the locations where structural sheathing is used — to maintain a consistent total sheathing thickness.
- h. The second R-value applies when more than half the insulation is on the interior of the mass wall.