

# MICHIGAN UNIFORM ENERGY CODE

Adopted by Legislature March, 2003. The Commercial Portion of the Energy Code is adopted and enforced with exceptions as per ASHRAE 90.1-1999, & as amended, appendices a,b,c,d except for section 4.1.2

The Residential Portion is Also adopted March, 2003 for ALL construction of NEW 1-2 Family Dwellings. The Residential Energy Code **DOES-NOT** apply to the following Exceptions

- R408.31060 a residential building or portion of a residential building that has an intended maximum rate of energy usage less than 3.4 Btu/Hr pr. sq. ft. for all purposes.
- b. A residential building or portion of a residential building that is not heated or mechanically cooled.
- c. An Existing Building
- d. An Alteration of any existing residential building or structure or portion of a residential building.
- e. An Addition to any Existing residential building Structure.
- f. An existing residential building moved into or within the jurisdiction. A manufactured building that is shipped for initial assembly and installation on a building site shall not be considered a moved structure.
- g. A building, other than a residential building, as defined in R 408.31064, shall be designed and constructed to comply with the requirements of the Michigan Uniform Energy Code Rules Part 10A. (All Inclusive).

**Compliance with the Energy Code can be done using one of TWO methods, at the Discretion of the Builder / Owner.**

**[1.] A Prescriptive Approach for Insulating Components, (Materials / Methods / - Available Thickness' of Applications), as required within (abbreviated Rules descriptions)**

- R408. 31073 A detailed listing of insulation materials & methods with attentions to ventilation techniques
- 31074 Minimum standards of thermal resistance assemblies according to chart 1102.4
- 31075 Concrete Floor, Slab, & Foundation assemblies insulation criteria
- 31076 Crawlspace Walls, and space ventilation
- 31077 Air leakage restrictions, including gasketing, & sealing criteria, according to table N1103.3
- 31079 Standard building design by systems analysis criteria, minimum heating appliance efficiency standards according to Zone (2), Degree day data, and N1104.1.3 The analysis report submitted shall include...
- a. The design criteria used to develop the standard design and proposed alternative design
  - b. A detailed technical comparison of the two building & system design.
  - c. The data used in, and resulting from, the comparative analysis to verify that both the analysis & the design meet the criteria of this section and N1105.1 and N1106.2

**[2.] A Systems Approach for the entire building performance as required in:**

- 31084 Replacement windows shall afford at least the level of performance as existing windows
- 31085 Re-newable energy resource analysis and allowances for these types of systems, with some variance's from total energy consumed as part of gross total annual energy usage.
- 31086 Heating energy analysis comparison report, containing the following:
- a. A basic description of the proposed alternative building design and any exceptions to the standard criteria
  - b. Abbreviated report form N1106. ` Comparing the alternative design with a standard design complying with this section through the systems analysis method.
1. Alternative design constants chart N1106.1.1 and Results of Calculations.
  2. (Compliance), to comply with the proposed alternative design criteria must be less than or equal to standard design according to the report form N1106.1

**[3.] Trade-Off Options to use when Door / Wind Areas Exceed 7% of Gross Exterior Wall Area. ONE- Trade Off must be employed when Fenestration Areas are too Large.**

- a. High-Efficiency Warm-Air Furnaces not less than 90% AFUE, A/C Must Exceed SEER 12
- b. Gas / Oil Boiler Efficiency not less than 83% AFUE, Ground Source Heat Pump Not less than 3.0 COP
- c. Fenestration Areas (Doors/Windows) Not less than R-3.5 value
- d. Exposed Roof / Ceiling Insulation Not less than R-38, Exposed Wall Insulation Not less than R-19 (Zone-2)
- e. Basement / Crawlspace Exposed Wall Insulation to not less than R-5
- f. Air Leakage control option, documented evidence of Air Exchange of not more than .50 Volume pr. hr.

**Table N-1102.4 Building Component Values**

Exterior Enclosure	Zones	1	2	3
Wall Assemblies		R-13	R-15	R-19
Fenestration / Openings (total unit values) <sup>1</sup>				
Up to and Including 15% of gross Wall Area		R-1.85	R-1.85	R-1.85 <sup>5</sup>
15.1% to 25% of the gross Wall Area		R-2.5 (U value=.4)		
More than 25% of the gross wall area		R-3.3 (U-Value=.30)		
Roof / Ceiling Assemblies <sup>2</sup>		R-30	R-38	R-38
Floors over Un-conditioned Spaces		R-21	R-30	R-30
Slab on grade construction		R-5	R-5	R-5
Un-heated slabs <sup>3</sup>		R-10	R-10	R-10
Heated Slabs		R-5	R-5	R-10
Crawlspace Walls <sup>4</sup>		R-5	R-5	R-10
Basement Walls				
Full Wall Height		R-5	R-5	R-10
Half Wall Height		R-10	R-10	NP

1. Fenestration (Windows / Glass Doors) Units are required to meet this standard for the entire unit.
2. Skylight R values are required to meet the Fenestration requirements set forth in this table
3. See Section N1102.2.1 for additional criteria
4. See Section N1102.2.2 for additional criteria
5. R-1.85 (U Value= .54),  
NP= Not Permitted