

# IECC Compliance Guide for New Homes in Michigan

Code: 2003 International Energy Conservation Code (IECC)

First Edition

## How to Use This Guide

This pamphlet contains five generic packages designed to simplify compliance with the IECC as it relates to residential occupancies in Michigan. Each county is assigned to one of the five packages, (A through E), which vary according to the different climate zones in Michigan.

## Step-by-Step Instructions

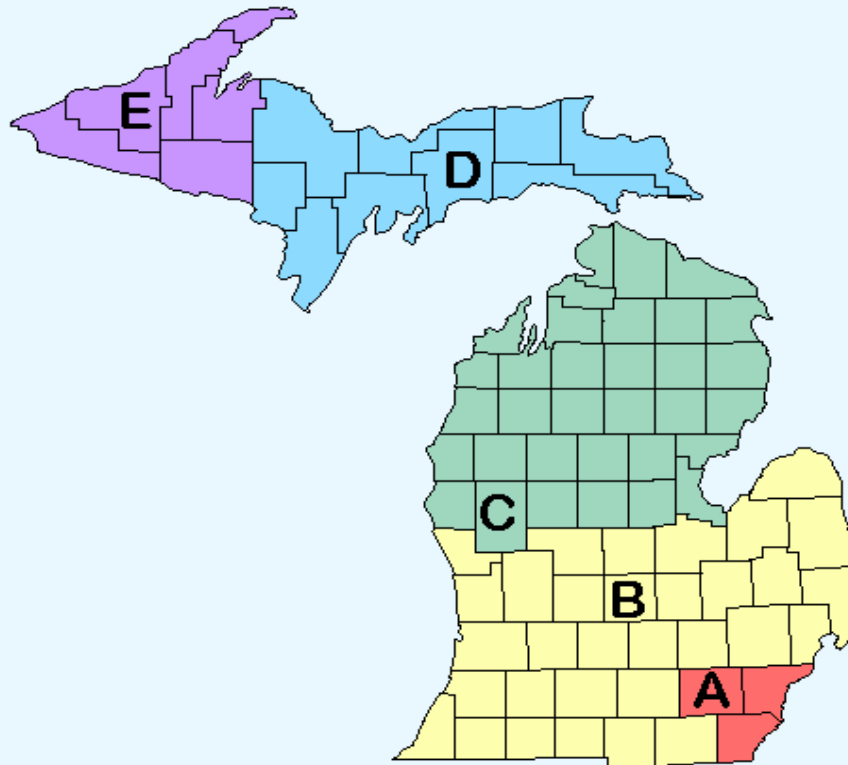
1. Use the color-coded map to locate the county in which construction is taking place and find the package, A through E, associated with that county.
2. Use the "Table of IECC Building Envelope Requirements for Michigan" (on the back of this sheet) to find the set of construction options or "path" associated with the package selected above.
3. Construct the building according to the corresponding path and comply with certain basic code requirements, which include:
  - a. providing preventative maintenance manuals
  - b. installing temperature controls
  - c. limiting window and door leakage
  - d. caulking or sealing joints and penetrations
  - e. installing vapor retarders
  - f. sealing and insulating ducts

### Example:

If you are constructing a home in Oakland County, you will comply with the IECC in Michigan if you follow the path listed in Package B.

### Limitations

This guide is an energy code (IECC based) compliance aid for Michigan. It does not provide a guarantee for meeting the IECC. The guide has not been customized to reflect any state-specific amendments to the IECC that Michigan may adopt or has adopted, and does not, therefore, provide a guarantee for meeting the state energy code. For additional details on Michigan's energy code, please contact your local building code official.



### Obtaining the IECC

The IECC is the national model energy standard certified by the US Department of Energy pursuant to the Energy Policy Act (EPAct). EPAct requires that all states review and consider adopting the IECC as the state building energy code.

The IECC is published by the International Code Council (ICC). For additional details on the IECC, contact the ICC by phone at (703) 931-4533 or visit their website at [www.iccsafe.org](http://www.iccsafe.org).

## Michigan Counties by Package

<b>A</b>	<b>6,000 - 6,499 HDD</b>		
	Monroe	Washtenaw	Wayne

<b>B</b>	<b>6,500 - 6,999 HDD</b>		
	Allegan	Huron	Muskegon
	Barry	Ingham	Oakland
	Berrien	Ionia	Ottawa
	Branch	Jackson	Saginaw
	Calhoun	Kalamazoo	Sanilac
	Cass	Kent	Shiawassee
	Clinton	Lapeer	St Clair
	Eaton	Lenawee	St Joseph
	Genesee	Livingston	Tuscola
	Gratiot	Macomb	Van Buren
	Hillsdale	Montcalm	

<b>C</b>	<b>7,000 - 8,499 HDD</b>		
	Alcona	Gladwin	Missaukee
	Alpena	Grand Traverse	Montmorency
	Antrim	Iosco	Newaygo
	Arenac	Isabella	Oceana
	Bay	Kalkaska	Ogemaw
	Benzie	Lake	Osceola
	Charlevoix	Leelanau	Oscoda
	Cheboygan	Manistee	Otsego
	Clare	Mason	Presque Isle
	Crawford	Mecosta	Roscommon
	Emmet	Midland	Wexford

<b>D</b>	<b>8,500 - 8,999 HDD</b>		
	Alger	Dickinson	Marquette
	Chippewa	Luce	Menominee
	Delta	Mackinac	Schoolcraft

<b>E</b>	<b>9,000 - 12,999 HDD</b>		
	Baraga	Houghton	Keweenaw
	Gogebic	Iron	Ontonagon

HDD = Heating Degree Days

# Table of IECC Building Envelope Requirements for Michigan

## Simplified Prescriptive Paths for Compliance with the IECC in Michigan

### WINDOWS AND INSULATION

### FOUNDATION TYPE

Package		Window U-factor	Ceiling	Wall	Floor	Basement Wall	Slab Perimeter	Crawl Space Wall
<b>A</b>	6,000-6,499 HDD	0.35	R-38	R-18	R-21	R-10	R-9, 4 ft.	R-20
<b>B</b>	6,500-6,999 HDD	0.35	R-49	R-21	R-21	R-11	R-11, 4 ft.	R-20
<b>C</b>	7,000-8,499 HDD	0.35	R-49	R-21	R-21	R-11	R-13, 4 ft.	R-20
<b>D</b>	8,500-8,999 HDD	0.35	R-49	R-21	R-21	R-18	R-14, 4 ft.	R-20
<b>E</b>	9,000-12,999 HDD	0.35	R-49	R-21	R-21	R-19	R-18, 4 ft.	R-20

HDD = Heating Degree Days

\* This table of prescriptive requirements is applicable to homes in which the ratio of the rough opening of windows to the gross wall area, expressed as a percentage, is 15%. For homes with glazing areas that are greater than 15%, please refer to Tables 502.2.4(4) - (6) in the IECC.

### NOTES:

1. This table is based upon the 2003 International Energy Conservation Code (IECC), published by the International Code Council, and does not reflect any state-specific amendments to the IECC.
2. Source of requirements for the Table: 2003 IECC, Ch. 5, Prescriptive Packages for Climate Zones 13-17. Alternate compliance approaches must be used for glazing areas over 25%.
3. Window area % and U-factors are maximum acceptable levels.
4. Insulation R-values are minimum acceptable levels.
5. This table applies to single-family, wood-frame residential buildings. For steel-framed wall construction or high-mass wall construction refer to Chapter 5 of the IECC.
6. "Window" refers to any translucent or transparent material (i.e., glazing) in exterior openings of buildings, including skylights, sliding glass doors, the glass areas of opaque doors, and glass block, along with the accompanying sashes, frames, etc.
7. Window U-factor must be determined from a National Fenestration Rating Council (NFRC) label on the product or from a limited table of product "default" values in the IECC.
8. Window area % is the ratio of the rough opening of windows to the gross wall area, expressed as a percentage.
9. Opaque doors must have a maximum U-factor of 0.35. One exempt door allowed.
10. The code requires that windows be labeled in a manner to determine that they meet the IECC's air infiltration requirements; specifically, equal to or better than 0.30 cfm per square foot of window area (swinging doors below 0.50 cfm) as determined in accordance with AAMA/WDMA 101/I.S.2 (ASTM E 283).
11. R-2 shall be added to the requirements for heated slabs.
12. Floors over outside air must meet ceiling requirements.
13. R-values for walls represent the sum of cavity insulation plus insulated sheathing, if any. Crawl space wall R-value shall only apply to unventilated crawl spaces.
14. Prescriptive packages are based upon normal HVAC equipment efficiencies (see Chapter 5 of the IECC). The code also requires the HVAC system to be properly sized using a computational procedure like ACCA Manual J.