



2018 IECC Residential Energy Efficiency Code Requirements Flow Chart



In accordance with Maryland Building Performance Standards and the currently adopted Harford County Building Code all residential structures must comply with the 2018 International Energy Conservation Code. All of the Mandatory provisions and either the Prescriptive or Performance based approach must be followed.

Building Thermal Envelope Compliance Exception
R402.1 General (Prescriptive). The following buildings, or portions thereof, separated from the remainder of the building by *building thermal envelope* assemblies complying with this section shall be exempt from the *building thermal envelope* provisions of Section R402.

- Those with a peak design rate of energy usage less than 3.4 Btu/h · ft² (10.7 W/m²) or 1.0 watt/ft² (10.7 W/m²) of floor area for space conditioning purposes.
- Those that do not contain *conditioned space*.

Mandatory Requirements

Section R401.3 Certificate	Section R403.5.1 Heated water circulation & temperature maintenance systems
Section R402.4 Air Leakage	Section R403.6 Mechanical ventilation
Section R402.5 Maximum fenestration U-factor and SHGC	Section R403.7 Equipment sizing & efficiency rating
Section R403.1 HVAC Controls	Section R403.8 Systems serving multiple dwelling units
Section R403.1.2 Heat Pump Supplementary Heat	Section R403.9 Snow melt & ice system controls
Section R403.3.2 Duct Sealing	Section R403.10 Pools and in-ground permanent spa energy consumption
Section R403.3.3 Duct Testing	Section R403.11 Portable Spas
Section R403.3.5 Building Cavities as ducts or plenums	Section R404.1 Lighting Equipment
Section R403.4 Mechanical system piping insulation	Section R404.1.1 Fuel gas lighting systems shall not have continuously burning pilot lights

Choose one of the Compliance Methods below

R-Value Computation Method
R402.1.3 General

R402.1.1 Vapor Retarder
R402.1.2 Insulation and Fenestration Criteria
R402.1.3 R-Value Computation
R402.2.1 Ceilings with Attic Spaces
R402.2.2 Ceilings without attic spaces
R402.2.3 Eave Baffle
R402.2.4 Access Hatches and Doors
R402.2.5 Mass Walls
R402.2.6 Steel-Frame Ceilings, Walls and Floors
R402.2.7 Walls with partial structural sheathing
R402.2.8 Floors
R402.2.9 Basement Walls
R402.2.10 Slab-on-Grade Floors
R402.2.11 Crawl Space Walls
R402.2.12 Masonry Veneer
R402.2.13 Sunroom insulation
R402.3 Fenestration
R402.3.1 U-factor
R402.3.5 Sunroom Fenestration
R402.3.1 Insulation
R403.3.4 Duct Leakage
R403.5.3 Hot Water pipe Insulation

U-Factor Alternative
R402.1.4 General

R402.1.1 Vapor Retarder
R402.1.2 Insulation and Fenestration Criteria
R402.1.4 U-Factor Alternative
R402.2.3 Eave Baffle
R402.2.4 Access Hatches and Doors
R402.2.5 Mass Walls
R402.2.6 Steel-Frame Ceilings, Walls and Floors
R402.2.8 Floors
R402.2.9 Basement Walls
R402.2.10 Slab-on-Grade Floors
R402.2.11 Crawl Space Walls
R402.2.12 Masonry Veneer
R402.2.13 Sunroom insulation
R402.3 Fenestration
R402.3.1 U-factor
R402.3.5 Sunroom Fenestration
R403.3.1 Insulation
R403.3.4 Duct Leakage
R403.5.3 Hot Water pipe Insulation

Total UA-Alternative
R402.1.5 General

R402.1.1 Vapor Retarder
R402.1.2 Insulation and Fenestration Criteria
R402.1.5 Total UA Alternative
R402.2.3 Eave Baffle
R402.2.4 Access Hatches and Doors
R402.2.5 Mass Walls
R402.2.6 Steel-Frame Ceilings, Walls and Floors
R402.2.8 Floors
R402.2.9 Basement Walls
R402.2.10 Slab-on-Grade Floors
R402.2.11 Crawl Space Walls
R402.2.12 Masonry Veneer
R402.2.13 Sunroom insulation
R402.3 Fenestration
R402.3.1 U-factor
R402.3.5 Sunroom Fenestration
R403.3.1 Insulation
R403.3.4 Duct Leakage
R403.5.3 Hot Water pipe Insulation

Performance
R405 Simulated Performance Alternative

R405.1 Scope
R405.2 Mandatory Requirements
R405.3 Performance-Based Compliance
R405.4 Documentation
R405.4.1 Compliance Software
R405.4.2 Compliance Report
R405.4.2.1 Compliance Report for Permit Application
R405.4.2.2 Compliance Report for Certificate of Occupancy
R405.4.3 Additional Documentation
R405.5 Calculation Procedure
R405.5.1 General
R405.5.2 Residence Specifications
R405.6 Calculation Software Tools
R405.6.1 Minimum Capabilities
R405.6.2 Specific Approval
R405.6.3 Input Values

Energy Rating Index
R406 Energy Rating Index Compliance Alternative

R406.1 Scope
R406.2 Mandatory Requirements
R406.3 Energy Rating Index
R406.3.1 ERI Reference Design
R406.4 ERI-Based Compliance
R406.5 Verification by Approved Agency
R406.6 Documentation
R406.6.1 Compliance Software Tools
R406.6.2 Compliance Report
R406.6.3 Additional Documentation
R406.7 Calculation Software Tools
R406.7.1 Minimum Capabilities
R406.7.2 Specific Approval
R406.7.3 Input Values



2018 IECC Residential Energy Efficiency Code

All new residential one and two family dwellings and additions to existing one and two family dwellings must comply with the residential provisions of the 2018 IECC unless the building is considered a "Low Energy Building" as defined in Section R402.1. Additions, alterations, renovations or repairs to single family dwellings can comply with the code without requiring the unaltered portion(s) to comply. An addition shall be deemed to comply with the code if the addition alone complies or if the existing building and addition comply with the code as a single building.

In addition to the mandatory provisions of the code, the Department must be advised by the applicant of the chosen compliance path by checking the applicable box. Additional detailed information on the mandatory provision and the provisions within each compliance path can be found in the Harford County Energy Code Compliance Check List. Additional compliance documentation must be submitted with this form for the Prescriptive UA Alternative, the Simulated Performance Alternative or the Energy Rating Index Compliance alternative path is selected.

Mandatory Requirements
All provisions must be complied with regardless of the compliance

Select One of the following

Prescriptive R-Value

Climate Zone	Fenestration U-Factor	Skylight U-Factor	Glazed Fenestration SHGC	Ceiling R-value	Wood Frame Wall R-value	Mass Wall R-value	Floor R-value	Basement Wall R-value	Slab R-value & Depth	Crawl Space Wall R-value
4 Except Marine	0.32	0.55	0.40	49	20 or 13+5	8/13	19	10/13	10, 2ft	10/13

Prescriptive U-Factor

Climate Zone	Fenestration U-Factor	Skylight U-Factor	Ceiling U-Factor	Wood Frame Wall U-Factor	Mass Wall U-Factor	Floor U-Factor	Basement Wall U-Factor	Crawl Space Wall U-Factor
4 Except Marine	0.32	0.55	0.026	0.060	0.098	0.047	0.059	0.065

Total UA Alternative
Must Submit Compliance Documentation

Simulated Performance Alternative
Must Submit Compliance Documentation

ERI Compliance Alternative
Must Submit Compliance Documentation
Max Score = 62

Applicant/Project Information

New Single Family Dwelling:

Addition:

Addition is thermally isolated from existing construction

Permit Applicant: _____
(Signature)

(Print Name)

Date: _____

Must be completed by Applicant

Permit Number: _____

Department Approval: _____

Additional documentation received:

Additional information regarding the requirements of the 2018 IECC as adopted by Harford County can be obtained by calling the Building Services Division at (410) 638-3366. Local amendments and the 2018 I-codes can be referenced at <http://www.harfordcountymd.gov/DILP/index.cfm?ID=321>