### 2015 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 2015 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.

1. 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.
2. Those that do not contain conditioned space.

#### Mandatory Requirements

| Section R401.3 | Certificate |
| Section R402.4 | Air Leakage |
| Section R402.5 | Maximum fenestration U-Factor and SHGC |
| Section R403.1 | HVAC Controls |
| Section R403.1.2 | Heat Pump Supplementary Heat |
| Section R403.3.2 | Duct Sealing |
| Section R403.3.3 | Duct Testing |
| Section R403.3.5 | Building Cavities as ducts or plenums |
| Section R403.4 | Mechanical system piping insulation |

| Section R403.5.1 | Heated water circulation & temperature maintenance systems |
| Section R403.6 | Mechanical ventilation |
| Section R403.7 | Equipment sizing & efficiency rating |
| Section R403.8 | Systems serving multiple dwelling units |
| Section R403.9 | Snow melt & ice system controls |
| Section R403.10 | Pools and in-ground permanent spa energy consumption |
| 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 General**
  - R402.1.1 Vapor Retarder
  - R402.1.2 Insulation and Fenestration Criteria
  - R402.1.3 R-Value Computation
  - 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
  - R402.2.14 Sunroom Fenestration
  - R402.2.15 U-Factor

**U-Factor Alternative**

- **R402.1 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
  - R402.2.14 Sunroom Fenestration
  - R402.3.5 Hot Water pipe Insulation

**Total UA-Alternative**

- **R402.1 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
  - R402.2.14 Sunroom Fenestration
  - R402.3.5 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
  - R405.4.2.2 Compliance Report
  - R405.4.2.1 Compliance Report for Permit Application
  - R405.4.2.1.1 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 Compliance Software Tools
  - R405.6.2 Compliance Report
  - R405.6.3 Additional Documentation
  - R405.7 Calculation Software Tools
  - R405.7.1 Minimum Capabilities
  - R405.7.2 Specific Approval
  - R405.7.3 Input Values

**Energy Rating Index**

- **R406 Energy Rating Index**
  - 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
Mandatory Requirements

All provisions must be complied with regardless of the compliance path that is chosen.

Choose one of the Compliance Methods on the left.

R-Value Computation Method

OR

U-Factor Alternative

OR

Total UA-Alternative
Must Submit Compliance Documentation

OR

Performance Option Requirements
Must Submit Compliance Documentation

OR

Energy Rating Index Alternative
Must have correct Table R406.4 rated design

Plan review at time of permit application

In field inspections to verify compliance

Table R402.1.2 Insulation and Fenestration Requirements by Component (2015 IECC)

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>Fenestration U-Factor</th>
<th>Skylight U-Factor</th>
<th>Glazed Fenestration SHGC</th>
<th>Ceiling R-value</th>
<th>Wood Frame Wall R-value</th>
<th>Mass Wall R-value</th>
<th>Floor R-value</th>
<th>Basement Wall R-value</th>
<th>Slab R-value &amp; Depth</th>
<th>Crawl Space Wall R-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Except Marine</td>
<td>0.35</td>
<td>0.55</td>
<td>0.40</td>
<td>49</td>
<td>20 or 13+5</td>
<td>8/13</td>
<td>19</td>
<td>10/13</td>
<td>10, 2ft</td>
<td>10/13</td>
</tr>
</tbody>
</table>

Table R402.1.4 Equivalent U-Factors (2015 IECC)

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>Fenestration U-Factor</th>
<th>Skylight U-Factor</th>
<th>Glazed Fenestration SHGC</th>
<th>Ceiling R-value</th>
<th>Wood Frame Wall U-Factor</th>
<th>Mass Wall U-Factor</th>
<th>Floor U-Factor</th>
<th>Basement Wall U-Factor</th>
<th>Crawl Space Wall U-Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Except Marine</td>
<td>0.35</td>
<td>0.55</td>
<td>0.028</td>
<td>0.060</td>
<td>0.098</td>
<td>0.047</td>
<td>0.059</td>
<td>0.065</td>
<td></td>
</tr>
</tbody>
</table>

Applicant/Project Information

New Single Family Dwelling: □

Addition: □

Addition is thermally isolated from existing construction □

Permit Applicant: ____________________________

(Signature) ____________________________

(Print Name) ____________________________

Date: ________________

Permit Number: ____________________________

Department Approval: ____________________________

Additional documentation received for Prescriptive UA Alternative Path or Performance Compliance Path Option: □

Additional information regarding the requirements of the 2015 IECC as adopted by Harford County can be obtained by calling the Building Services Division at (410) 638-3366. Local amendments and the 2015 I-codes can be referenced at http://www.harfordcountymd.gov/DILP/index.cfm?ID=321.