

## 2021 IECC Residential Energy Compliance for Additions and Alterations

All new residential additions/alterations where conditioned space has been increased, must comply with the residential provisions of **Chapter 5** of the 2021 IECC Applicants must select one compliance path option from page 1. Additional compliance documentation must be submitted with this form for the Total UA Alternative, Total Building Performance or Energy Rating Index Compliance path options.

**R-Values**  
R402.1, R402.2, R402.3.1  
through  
R402.3.5 and R402.4

Table R402.1.3 Minimum R-values and Fenestration Requirements by Component (2021 IECC)											
	Climate Zone	Fenestration	Skylight	Glazed Fenestration SHGC	Ceiling	Wood Frame Wall R-value	Mass Wall R-value	Floor R-value	Basement Wall	Slab R-value & Depth	Crawl Space Wall R-value
Required	4 Except Marine	0.3	0.55	0.4	60	30 or 20 & 5ci or 13 & 10ci or 0 & 20 ci	13	19	10 ci or 13	10 ci, 4 ft	10ci or 13
Provided											

**U-Factors**  
R402.1, R402.2, R402.3.1  
through  
R402.3.5 and R402.4

Table R402.1.2 Maximum Assembly U-Factors and Fenestration Requirements (2021 IECC)											
	Climate Zone	Fenestration U-Factor	Skylight U-Factor	Glazed Fenestration SHGC	Ceiling U-Factor	Wood Frame Wall U-Factor	Mass Wall U-Factor	Floor U-Factor	Basement Wall U-Factor	Crawl Space Wall U-Factor	
Required	4 Except Marine	0.30	0.55	0.40	0.024	0.045	0.098	0.047	0.059	0.065	
Provided											

**Total UA Alternative**  
R402.1, R402.2, R402.3.1  
through  
R402.3.5 and R402.4

**Additional compliance report required**  
**REScheck-Web**  
<https://energycode.pnl.gov/REScheckWeb/#/login>

**MD Prescriptive R-Value Alternative**  
R402.1.3.1

Table R402.1.3 Insulation minimum R-values and Fenestration Requirements by Component (2021 IECC)											
	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
Required	4 Except Marine	0.3	0.55	0.4	49	20 or 15 & 3ci	13	19	10 ci or 13	10 ci, 4ft	10ci or 13
Provided											

**Must select Additional Energy Feature to equal or exceed 6% from Table 1 – Next Page**

**Total Building Performance R405**

**Additional Compliance Report required**

**Conditioned Sunroom R402.2.12**

Required	Ceiling R-19	Walls R-13
Provided		

# MD Alternative Packages

<b>Table 1</b> <b>MD Alternative Additional Packages—Must select one or more options to meet or exceed 6%. R402.1.3.1</b>		
<input type="checkbox"/> 1	≥ 2.5% reduction in total UA	1%
<input type="checkbox"/> 2	≥ 5% reduction in total UA	2%
<input type="checkbox"/> 3	> 7.5% reduction in total UA	2%
<input type="checkbox"/> 4	0.22 U-factor windows	3%
<input type="checkbox"/> 5	High performance cooling system (Greater than or equal to 18 SEER and 14 EER air conditioner)	3%
<input type="checkbox"/> 6	High performance cooling system (Greater than or equal to 16 SEER and 12 EER air conditioner)	3%
<input type="checkbox"/> 7	High performance gas furnace (Greater than or equal to 96 AFUE natural gas furnace)	5%
<input type="checkbox"/> 8	High performance gas furnace (Greater than or equal to 92 AFUE natural gas furnace)	4%
<input type="checkbox"/> 9	High performance heat pump system (Greater than or equal to 10 HSPF/18 SEER air source heat pump.)	6%
<input type="checkbox"/> 10	High performance heat pump system (Greater than or equal to 9 HSPF/16 SEER air source heat pump.)	5%
<input type="checkbox"/> 11	Ground source heat pump (Greater than or equal to 3.5 COP ground source heat pump.)	6%
<input type="checkbox"/> 12	Fossil fuel service water heating system (Greater than or equal to 82 EF fossil fuel service water-heating system.)	3%
<input type="checkbox"/> 13	High performance heat pump water heating system option (Greater than or equal to 2.9 UEF electric service water -heating system.)	8%
<input type="checkbox"/> 14	High performance heat pump water heating system. (Greater than or equal to 3.2 UEF electric service water- heating system.)	8%
<input type="checkbox"/> 15	Solar hot water heating system (Greater than or equal to 0.4 solar fraction solar water-heating system.)	6%
<input type="checkbox"/> 16	More efficient HVAC distribution system. (100 percent of ductless thermal distribution system or hydronic thermal distribution system located completely inside the building thermal envelope.)	10%
<input type="checkbox"/> 17	100% of ducts in conditioned space. (100 percent of duct thermal distribution system located in conditioned space as defined by Section R403.3.2.)	12%
<input type="checkbox"/> 18	Reduced total duct leakage. (When ducts are located outside conditioned space, the total leakage of the ducts, measured in accordance with R403.3.5, shall be in accordance with one of the following: a. Where air handler is installed at the time of testing, 2.0 cubic feet per minute per 100 square feet of conditioned floor area. b. Where air handler is not installed at the time of testing, 1.75 cubic feet per minute per 100 square feet of conditioned floor area.	1%
<input type="checkbox"/> 19	2 ACH50 air leakage rate with ERV or HRV installed. (Less than or equal to 2.0 ACH50, with either an Energy Recovery Ventilator (ERV) or Heat Recovery Ventilator (HRV) installed.)	10%
<input type="checkbox"/> 20	2 ACH50 air leakage rate with balanced ventilation. (Less than or equal to 2.0 ACH50, with balanced ventilation as defined in Section 202 of the 2021 International Mechanical Code.)	4%
<input type="checkbox"/> 21	1.5 ACH50 air leakage rate with ERV or HRV installed. (Less than or equal to 1.5 ACH50, with either an ERV or HRV installed.)	12%
<input type="checkbox"/> 22	1 ACH50 air leakage rate with ERV or HRV installed. (Less than equal to 1.0 ACH50, with either an ERV or HRV installed.)	14%
<input type="checkbox"/> 23	Energy Efficient Appliances (Minimum 3 appliances not to exceed 1 form each type with follow efficiencies. Refrigerator - Energy Star Program Requirements, Product Specification for Consumer Refrigeration Products, Version 5.1 (08/05/2021), Dishwasher - Energy Star Program Requirements for Residential Dishwashers, Version 6.0 (01/29/2016), Clothes Dryer - Energy Star Program Requirements, Product Specification for Clothes Dryers, Version 1.1 (05/05/2017) and Clothes Washer - Energy Star Program Requirements, Product Specification for Clothes Washers, Version 8.1 (02/05/2018)	7%
<input type="checkbox"/> 24	Renewable Energy Measure.	11%

I hereby certify that the building design represented in the attached construction documents has been designed to meet or exceed the requirements of 2021 Edition International Energy Conservation Code (IECC)

Project Address: \_\_\_\_\_

Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_