

MIXED-FUEL

2021 IECC Residential Energy Compliance Path for New Construction

All new residential one- and two-family dwellings must comply with the residential provisions of the 2021 IECC unless the building is considered a "Low Energy Building" as defined in Section R402.1

Applicants must select **one** compliance path option from page 1 and applicable additional energy features from tables on Page 2 as required by Section R401.2.5. Additional compliance documentation must be submitted with this form for the Total UA Alternative, Total Building Performance or Energy Rating Index Compliance Alternative path options

☐ **Prescriptive Compliance Option
R402.1.2**

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
4 Except Marine	0.30	0.55	0.40	0.024	0.045	0.098	0.047	0.059	0.065

Must select Additional Energy Features of Table 1

☐ **Prescriptive R-Value Alternative
R402.1.3**

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
4 Except Marine	0.30	0.55	0.40	60	30 or 20 & 5ci or 13 & 10ci or 0 & 20 ci	8/13	19	10 ci or 13	10 ci, 4ft	10ci or 13

Must select Additional Energy Features of Table 1

☐ **Total UA Alternative R402.1.5**

Must select Additional Energy Feature(s) of Table 1

Additional compliance report required.

☐ **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
4 Except Marine	0.30	0.55	0.40	49	20 or 13 & 5ci	8/13	19	10 ci or 13	10 ci, 4ft	10ci or 13

Must elect Additional Energy Features from Table 1 **Must select Additional Energy Features from Table 2**

☐ **Total Building Performance R405**

Mixed-Fuel must select option from Table 3

☐ **Energy Rating Index Compliance Alternative R406**

Energy Rating Index Value must be less than or equal to the appropriate value indicated in Table R406.5

Additional compliance report required.

MUST NOT DUPLICATE OPTIONS SELECTED ON TABLE 1

Table 1 Select one from Group A and two from Group B		
Group A	<input type="checkbox"/> Option 1	Enhanced Envelope Performance. (R408.2.1)
	<input type="checkbox"/> Option 2	Improved air sealing and Efficient Ventilation System option. (R408.2.5)
Group B	<input type="checkbox"/> Option 1	More Efficient HVAC Equipment Performance. Greater than or equal to 95 AFUE natural gas furnace and 16 SEER air conditioner.
	<input type="checkbox"/> Option 2	More Efficient HVAC Equipment Performance. Greater than or equal to 10 HSPF/16 SEER air source heat pump.
	<input type="checkbox"/> Option 3	More Efficient HVAC Equipment Performance. Greater than or equal to 3.5 COP ground source heat pump.
	<input type="checkbox"/> Option 4	Reduced energy use in service water-heating. Greater than or equal to 0.82 EF fossil fuel service water-heating system.
	<input type="checkbox"/> Option 5	Reduced energy use in service water-heating. Greater than or equal to 2.0 EF electric service water-heating system.
	<input type="checkbox"/> Option 6	Reduced energy use in service water-heating. Greater than or equal to 0.4 solar fraction solar water-heating system.
	<input type="checkbox"/> Option 7	More efficient duct thermal distribution system option. 100% of ducts and air handlers located entirely within the building thermal envelope.
	<input type="checkbox"/> Option 8	More efficient duct thermal distribution system option. 100% of ductless thermal distribution system or hydronic thermal distribution system located completely inside the building thermal envelope.
	<input type="checkbox"/> Option 9	More efficient duct thermal distribution system option. 100% of duct thermal distribution system located in conditioned space as defined by Section R403.3.2.

Table 3 Select Only 1 Option R405	
<input type="checkbox"/> Option 1	One of the additional efficiency package options in Group A of Table 1 & Any two from Group B of Table 1 shall be selected without including such measures in the proposed design under Section R405
<input type="checkbox"/> Option 2	The proposed design of the Mixed-fuel building under Section R405.2 shall have an annual energy cost that is less than or equal to 85 percent of the annual energy cost of the standard reference design.

Table 2 MD Alternative Additional Packages Must select one or more options to meet or exceed 6%. R402.1.3.1		
<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: _____