VAPDA

Vermont Association of Planning & Development Agencies

Residential Building Energy Code Standard (RBES)

Presented to:

Contractors

February 5, 2025

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Chittenden County Regional Planning Commission

Chittenden County RPC

Vermont Residential Energy Code (RBES)

RBES in Legislation: Act 20 of 1997

A minimum standard for energy efficient construction practices that apply to all new **residential** construction, additions, and most renovations, alterations, and repairs in residential buildings.

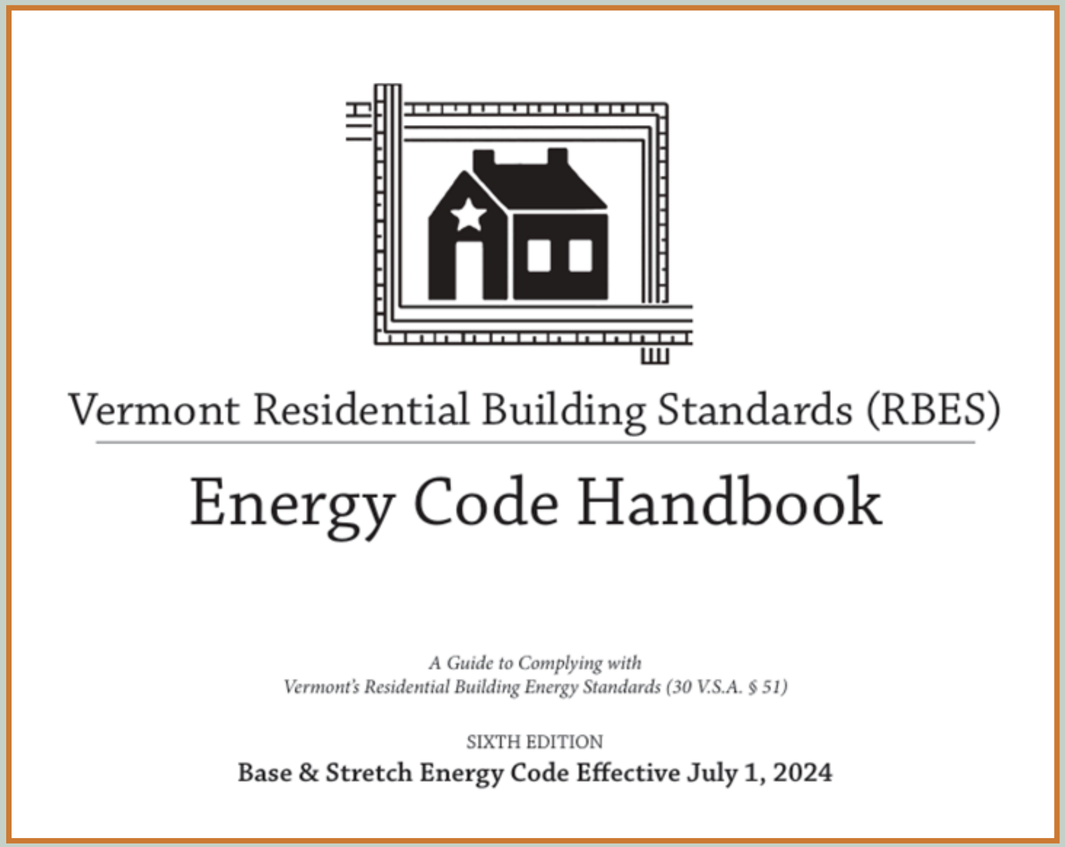
“Residential buildings” means one-family dwellings, two-family dwellings, and multi-family housing three stories or less in height.

“Residential buildings” does not include hunting camps or summer camps.

Exemptions from RBES in Statute

- Mobile homes
- Buildings or additions whose peak energy use is less than 3.4 BTUs per hour
- Buildings or additions that are neither heated or cooled or are historic
- Hunting camps
- Summer camps and yurts
- Owner-built and occupied homes

Vermont Residential Energy Code (RBES)



Three-year code revision cycle with public review

Based on International Energy Conservation Code (IECC)

On July 1, 2024 the 2024 RBES went into effect and applies to construction commenced on or after that date.

[Residential Building Energy Standards | Department of Public Service]

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Residential Building Energy Standards

On July 1, 2024 the 2024 RBES went into effect and applies to construction commenced on or after that date.

The RBES code book is nearing completion and an online "view only" version will be available soon on the International Code Council Website. In the meantime, here is a link to the updated redline version of the 2024 RBES code language. The 2024 RBES Handbook has been completed and posted at this link. Please contac the Energy Code Assistance Center at 1-855-887-0673 for a copy of the RBES Handbook, or if you have any questions about the code.

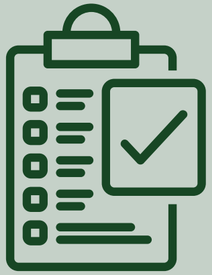
Hard copies of the 2024 RBES codebook will be available for purchase through the International Code Council (ICC) in the coming weeks. Until the print version of the code book is available, you can view or download a redline version of the 2024 RBES code language at this link: 2024 RBES Redline 12/30/24 version. Check this page or call the Energy Code Assistance Center, 1-855-887-0673 for status updates on the RBES Codebook and Handbook.

Overview

The Vermont Residential Building Energy Standards (RBES) - 30 V.S.A. § 51 affects all new homes and all additions, alterations and repairs to residential buildings three stories or less above grade in Vermont.

The 2024 RBES took effect on July 1, 2024, and applies to construction commenced on or after the effective date. RBES applies to all new residential construction, including additions, alterations, renovations, and repairs. This effective date applies to both the RBES Base code and the RBES Stretch code. The RBES Stretch code is used to satisfy criterion 9(f) of all Act 250 projects.

- 2024 RBES Rule which includes changes made to the 2020 RBES.
- 2024 RBES Redline 12/30/24 version
- 2024 RBES Handbook (12.23.2024 version)
- 2024 RBES Certificate (2 pages)



What Does RBES Require?

- Climate-Specific R-values
- Building Airtightness
- Mechanical Ventilation
- Combustion safety
- Properly sized heating and cooling equipment
- Foundation and slab insulation
- Moisture management
- Durable and moisture safe building assemblies
- Efficient lighting
- Low u-value windows
- Builder Certification of installed measures

Slide content courtesy of Efficiency Vermont

Help is Available for Energy Codes

Energy Code Assistance Center (ECAC) Provides Free Assistance:

- Offers technical assistance on meeting RBES and CBES
- Clarifies code requirements, provides code materials, and helps show compliance pathways
- Contact Energy Code Assistance Center: 855-887-0673
- Learn more about Efficiency Vermont's Residential New Construction (RNC) Program and Commercial New Construction (CNC) Program and rebate offers

Slide content courtesy of Efficiency Vermont

RBES Certificate of Compliance*

***Required prior to issuing a certificate of occupancy (CO) in any municipality that requires such a certificate.**

May be completed by a builder, licensed professional engineer, licensed architect, or accredited home energy rating organization.

Must provide a copy of the certificate to the VT Department of Public Service and have a municipal clerk record in the land records.

> *Fee for recording in the land records is set by Vermont State Statute. Currently, it's $15 per page. (Mylars are $25 per page.)*

A builder may contract with a licensed professional engineer, a licensed architect, or an accredited home energy rating organization to issue certification and reduce the builder's potential liability to the owner.

2024 Vermont Residential Building Energy Standards (RBES) Certificate (Page 1 of 2)

This certificate is for projects started on or after July 1, 2024.
Before completing this form, refer to the instructions in Chapter 9 of the Residential Energy Code Handbook (6th edition).
For additions, alterations, renovations, or repairs, fill out only the applicable portions of certificate.

Property Address (Street, City, ZIP Code) _____

Construction START Date _____ Construction FINISH Date _____ Act 250 (Y/N) _____ Act 250 Permit # _____

Units _____ # Stories _____ # Conditioned Sq. Ft. _____ # Bedrooms _____

Foundation Type: ☐ Basement ☐ Slab On Grade ☐ Crawl Space ☐ Other

Applicable Code ☐ **Base** ☐ **Stretch**

Project Description

☐ Single Family ☐ Renovation/Alteration ☐ Multi-family ☐ Addition* ☐ Tiny House

*Existing home project description: _____

Compliance Method

MUST select **Option 1**, **Option 2**, or **Option 3**

☐ **Option 1: Package-Plus-Points**
BASE / STRETCH (circle one)
Package: Std. / Log / Tiny Hse. (circle one)
Points required: _____
Points achieved: _____
(Base requires up to 10pts/ Stretch up to 15pts; See Handbook Tables 5-2 and 5-5)
Reference RBES for full requirements of each point option

☐ **Option 2: REScheck** sofware (cannot be used for Stretch Code)
_____ Passes
UA result _____
Max. UA _____

☐ **Option 3: HERS/ERI**
_____ HERS Result (Overall)
_____ HERS without Renewables
_____ HERS software used, version #
☐ IAF incorporated into model
Approved rater name: _____
(Maximum HERS 60 Base, 59 Stretch)

I certify to _____ (Owner) that the above information is correct and that the premises listed have been constructed in accordance with the Vermont Residential Building Standards (RBES) created under 30 V.S.A. § 51.

Date: _____
Signature: _____ Printed Name: _____
Company: _____ Phone: _____

30 V.S.A. § 51 requires this certificate label to be permanently affixed to the inside electrical service panel or heating or cooling equipment or nearby in a visible location. Copies of the certificate (and Home Energy Rating Certificate if Option 3 is used) also must be provided to 1) the Dept. of Public Service, 112 State St., Montpelier, VT 05602, and 2) the town clerk of the town where the property is located.
NOTE: Noncompliance with RBES may result in action for damages under 30 V.S.A. § 51. This label does not specify all 2024 RBES requirements.
QUESTIONS? CALL the Energy Code Assistance Center at 855-887-0673 or the VT PUBLIC SERVICE DEPARTMENT at 802-828-2811.

Town clerk recording stamp:
SPAN # _____

2024 Vermont Residential Building Energy Standards (RBES) Certificate Building Technical Details (Page 2 of 2)

This certificate is for projects started on or after July 1, 2024.
Before completing this form, refer to the instructions in Chapter 9 of the Residential Energy Code Handbook (6th edition).
For additions, alterations, renovations, or repairs, fill out only the applicable portions of certificate.

For use with the Package Plus Points compliance method only:

☐ Envelope: Slab, R-20 around perimeter and below entire slab (2 pts)
☐ Envelope: Walls R-24 2x6 cavity insulation with continuous (1 pt)
☐ Envelope: Walls: R-35 double stud or similar (cavity and continuous) (2 pts)
☐ Envelope: Walls: R-40 double stud or similar (cavity and continuous) (3 pts)
☐ Envelope: R-40 SIP 10 1/4" XPS or similar (cavity and continuous) (4 pts)
☐ Envelope: Ceiling, R-60 flat / 49 sloped (1 pt)
☐ Envelope: Ceiling, R-80 flat / 60 sloped (2 pts)
☐ Envelope: Floors- exposed, R-40 (1pt)
☐ Envelope: Windows 0.27 (1 pt)
☐ Envelope: Windows 0.25 (2 pts)
☐ Envelope: Windows 0.21 (3 pts)
☐ Envelope: Windows 0.18 (4 pts)
☐ Envelope: Doors - exterior, 0.26 (1 pt)
☐ ≤0.11 CFM50/Sq.Ft (~1.5 ACH50) (1 pt)
☐ ≤0.07 CFM50/Sq.Ft (~1.0 ACH50) (2 pts)
☐ ≤0.03 CFM50/Sq.Ft (~0.5 ACH50) (3 pts)
☐ Balanced ventilation with ECM fans and ≥90% SRE and ≤1.2 cfm/watt (3 pts)
☐ Balanced ventilation with ECM fans and ≥75% SRE, and ≥2.8 cfm/watt (3 pts)
☐ Mechanical ventilation heating (1 pt)
☐ ENERGY STAR basic equipment (1 pt)
☐ HVAC (whole building) ENERGY STAR v.6 (5 pts)
☐ HVAC (whole building) is GSHP and ENERGY STAR labeled (10 pts)
☐ HVAC (whole building) is ATWHP COP≥2.5 (5 pts)
☐ Whole building heating/cooling is Advanced wood heating system (https://www.zero-ci.org) (5 pts)
☐ Hydronic distribution system meets building peak heating demand with 120-degree water (1 pt)
☐ All electric heating thermostats provided with demand responsive controls (1 pt)
☐ Electric Heat Pump Water Heater UEF ≥ 2.20 (3 pts)
☐ Electric Heat Pump Water Heater UEF ≥ 3.30 (5 pts)
☐ All showerheads ≤ 1.75 gpm, all lavatory faucets ≤ 1.0 gpm, and all toilets ≤ 1.28 gpfc (1 pt)
☐ Certified water efficient design per WERS, Watersense, or RESNET HERS/H2O (2 pts)
☐ Drain water heat recovery system on primary showers and tubs (1 pt)
☐ Controlled hot water recirculations system with user-demand via push-button for furthest fixtures (1 pt)
☐ All service hot water piping is insulated to at least R-4 from the hot water source to the fixture shutoff (1 pt)
☐ Electric storage water heater(s) provided with demand responsive controls (1 pt)
☐ Remote fixtures requiring hot water supplied from a localized source of hot water with no recirculating system (1 pt)
☐ Reflect R402.7 Solar - ready zone requirements (Have Code only) (2 pts)
☐ Solar hot water system designed to meet at least 50% of the annual hot water load (2 pts)
☐ Solar PV (or other on-site renewable energy system), (1 pt per 1.5 kW, max. 4 pts)
☐ Whole building energy monitoring system installed, minimum 5 circuits & homeowner access to data (1 pt)
☐ Radon mitigation system (1 pt)
☐ Building energy model with projected annual energy use and costs developed, used in design and construction decisions, and provided to homeowner (1 pt)
☐ Minimum 6 kWh grid connected dispatchable demand-response-enabled battery (1 pt)
☐ Advanced lighting controls (2 pts)
☐ Installation embodied carbon emissions calculated (1 pt)
☐ Installation embodied carbon emissions: calculated GWP intensity (kg CO2e/sq. ft.) less than 8.5. (2 pts)
☐ Installation embodied carbon emissions: calculated insulation GWP intensity (kg CO2e/sq. ft.) less than 0. (3 pts)
☐ Multifamily: Efficient elevator equipment (1 pt)
☐ Multifamily: Residential kitchen equipment (2 pts)
☐ Multifamily: Water heating system submeters (1 pt)

Thermal Envelope

Basement R-_____ Basement / Crawl Space Walls _____ Basement Insulation Depth (ft) U-_____ Basement Windows ☐ NFRC ☐ Default
Slab R-_____ Unheated Slab (Under) R-_____ Heated Slab (Under) R-_____ Perimeter Slab Edge
Wall/Ceiling R-_____ Above-Grade Walls R-_____ Flat Ceilings _____ Area (sq ft) R-_____ Sloped Ceilings _____ Area (sq ft)
Other R-_____ Floors over Unheated Spaces R-_____ Attic Access Hatch / Door ☐ NA
Fenestration U-_____ Windows ☐ NFRC ☐ Default U-_____ Doors ☐ NFRC ☐ Default U-_____ Skylights ☐ NFRC ☐ Default

Air Sealing/Blower Door Test

_____ CFM50 Date of test _____
_____ ACH50 Air Leakage Tester Name: _____
_____ CFM50/sq ft of building shell (6 sides)

Ventilation System

Balanced, SRE _____ % CFM/watt: Flow verification: Rated, OR Measured _____ Exhaust airflow (total cfm) _____
Supply airflow (total cfm
Other _____ Flow verification: Rated, OR Measured _____ Exhaust airflow (total cfm) _____

Combustion Safety (verify all)

☐ Exterior (outdoor) air supply is provided for solid fuel-burning appliances & fireplaces, OR ☐ NA (no solid fuel burning appliance or fireplace in home)
☐ Solid fuel burning appliances & fireplaces have gasketed doors with compression closure, OR ☐ NA (no solid fuel burning appliance or fireplace in home)

Mechanical System (must complete all)

☐ Spillage testing conducted on combustion equipment not directly-vented, OR ☐ NA (no equipment, or all equipment directly-vented)
Design Load Calculation Method: ☐ ACCA Manual J, OR ☐ Other Approved Method (List) _____
Calculation details: *(Ref. RBES R302 for design temperature exceptions)*

_____ Winter design temp, outdoor dry-bulb (VT range: -11 to 1°F) _____ Summer design temp, outdoor dry-bulb (typ. max. 84°F), OR ☐ No cooling
_____ Winter design temp, indoor (max 72°F) _____ Summer design temp, indoor (min. 75°F), OR ☐ No cooling
_____ Heating design load, Btu/hr _____ Cooling design load, Btu/hr, OR ☐ No cooling
_____ Primary heating system size, Btu/hr _____ Primary cooling system size, Btu/hr, OR ☐ No cooling
_____ HSPF or COP or AFUE (circle which) _____ SEER or COP (circle which), OR ☐ No cooling

System type (ducted, hydronic, heat pump, space heater) _____
Fuel type _____
☐ Programmable thermostat, OR ☐ Exempt; list reason _____

Ducts

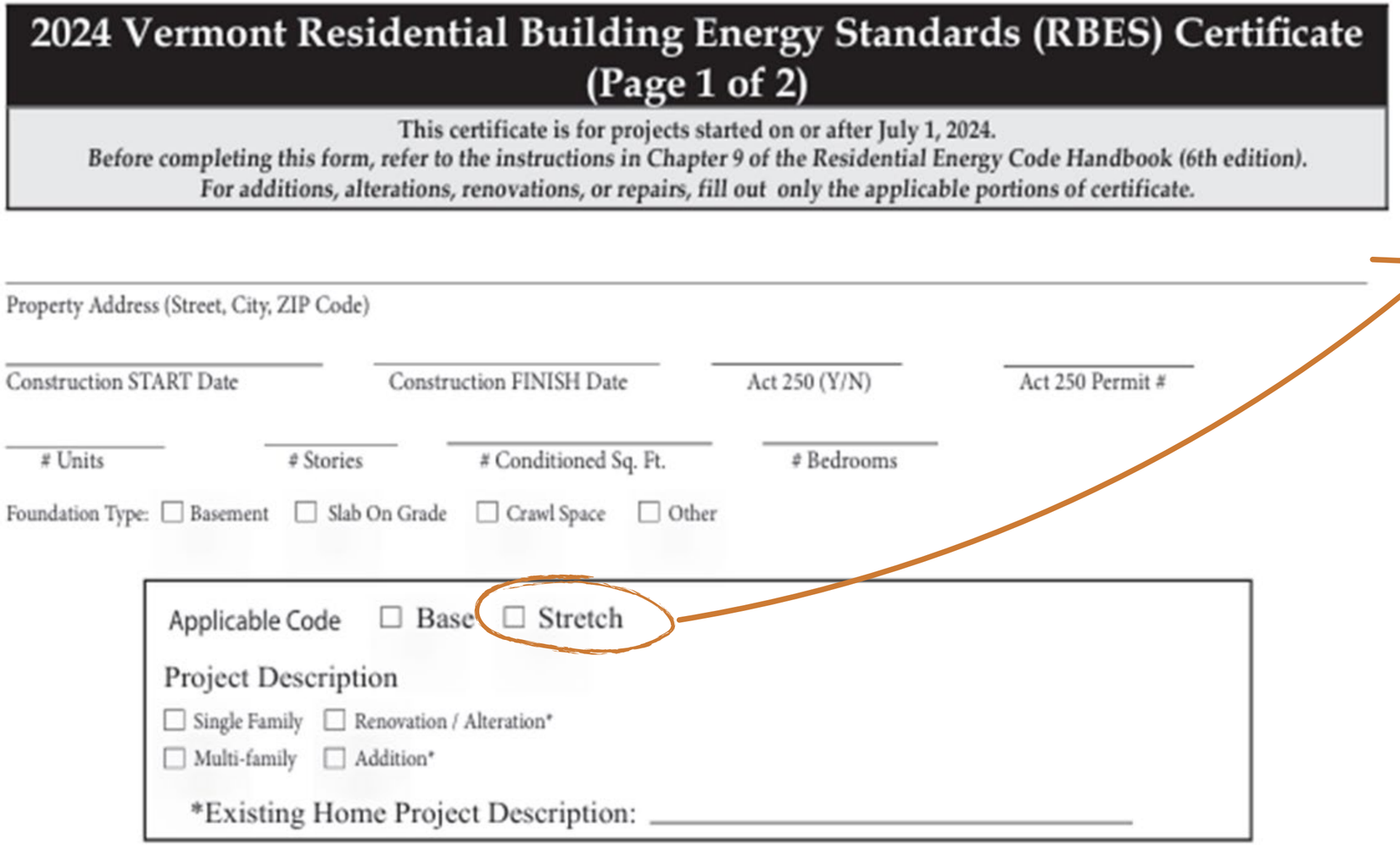
☐ Ducts located within conditioned spaces, OR ☐ NA (no ducts)

Other

Mandatory (Base and Stretch): ☐ Automatic or gravity dampers for ventilation system intake and exhaust
☐ Mechanical system piping, min. R-4 ☐ Single-family: One Level 2 capable EV-charging parking space
☐ 100% of lamps high efficacy ☐ Multi-family: One Level 2 capable EV-charging parking space
Mandatory (Stretch Code Only): ☐ Single-family: Solar ready ☐ 25% of provided spaces not utilized by dwelling units, or 40 spaces are Level 2 capable EV-charging

Where applicable: ☐ Circulating service hot water controlled ☐ Pools: All requirements per R403.10 are met ☐ Automatic controls for snow-melt systems

RBES Certificate of Compliance



2024 Vermont Residential Building Energy Standards (RBES) Certificate
(Page 1 of 2)

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Property Address (Street, City, ZIP Code)

Construction START Date | Construction FINISH Date | Act 250 (Y/N) | Act 250 Permit #

Units | # Stories | # Conditioned Sq. Ft. | # Bedrooms

Foundation Type: ☐ Basement ☐ Slab On Grade ☐ Crawl Space ☐ Other

Applicable Code ☐ Base ☐ Stretch

Project Description

☐ Single Family ☐ Renovation / Alteration*
☐ Multi-family ☐ Addition*

*Existing Home Project Description: _____

All projects that require Act 250 permits are required to meet Stretch Code.

Stretch Code is also required in certain jurisdictions in VT that have adopted it.

*Currently only South Burlington

Choose a compliance path

1. **Prescriptive Method.** Choose a "package" of building envelope performance requirements and achieve a set number of points based on the building size.

2. **ResCheck Software Method.** Use your computer with REScheck software web-based modeling tool through your internet browser to easily analyze almost any design and determine whether any modifications are needed to meet the Code. REScheck software tool can be accessed by visiting https://www.energycodes.gov/rescheck. Additional user guidance is also available on the Vermont Department of Public Service website.

3. **Home Energy Rating Method.** This approach provides flexibility and gives full credit for air tightness, efficient hot water and space heating, solar orientation, and other efficient features of the home. For more information about home energy ratings, contact Efficiency Vermont toll-free at 888-921-5990

RBES Certificate of Compliance

Compliance Method	☐ **Option 1: Package-Plus-Points**	☐ **Option 2: REScheck software** (cannot be used for Stretch Code)	☐ **Option 3: HERS/ERI**
MUST select **Option 1**, **Option 2**, or **Option 3**	BASE / STRETCH *(circle one)* Package # _____ Points required: _____ Points achieved: _____ (Base requires up to 10pts/ Stretch up to 15pts; See Handbook Tables 5-2 and 5-5) *Reference RBES for full requirements of each point option*	_____ Passes UA result _____ Max. UA _____	_____ HERS Result (Overall) _____ HERS without Renewables _____ HERS software used, version # ☐ IAF incorporated into model Approved rater name: _____ *(Maximum HERS 60 Base, 59 Stretch)*

Projects required to meet **Stretch Code** are limited to two Compliance Options:

Option 1: Package Plus Points
Option 3: ERI/HERS-based compliance

https://www.efficiencyvermont.com/trade-partners/energy-code-support

Package Plus Points Approach

Prescriptive compliance

- Prescriptive compliance dictates the options for the **building envelope** that will meet the intended performance requirements of the code.
- Builders/Clients/(**NOT homeowners**) can follow the Package and design project specifications around the requirements of the package.
- Does not require modeling performance with a software tool or hiring a third party to do the performance modeling for you.

Slide content courtesy of Efficiency Vermont

TABLE R402.1.2.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT FOR ~~BASE~~ STANDARD PACKAGES FOR BASE CODE AND STRETCH CODE [a]

Table 6.1: Requirements[a] by Component for Base Code and Stretch Code.

Component[f]	Package 1	Package 2
	Standard	Log Home Package
Ceiling—Flat Attic[b]	**U-0.020:** R-49[b]	
Ceiling—Slope (No Attic)	**U-0.025:** Example: 2x14 24 o.c., 12 in. R-44 fibrous insulation[c]	
Above-Grade Wall[d]	**U-0.044:** Examples: R-20 + 5 ci[e] R-13 + 10 ci R-20 (6.5 inch ci [SIP] or other)	Construct log home walls to ICC 400-2022 Standard on the Design and Construction of Log Structures Table 305.3.1.2 or Vermont RBES Table R402.1.6
Frame Floor	**U-0.029:** R-38	
Basement/Crawl Space Walls[f]	R-20 ci or R-13 + 10 ci	
Slab, on Grade[g]	R-20, 4 feet (edge) or R-15, 4 feet (edge) + R-7.5 (under entire slab)	
Slab, on Grade, Heated[h]	R-20, 4 feet (edge) + R-15 (under entire slab)	
Windows	**U-0.30**	
Skylights	**U-0.41**	
Doors	**U-0.37**	
Air Leakage	≤0.15 CFM50/sq. ft. of building shell (~2 ACH50)[h]	
Ducts	Inside thermal boundary	
High Efficacy Light Sources	100%	

Package Plus Points

In addition to meeting prescriptive package requirements a number of points must be earned based on total conditioned square footage of the building.

Building Sq. footage is based on the finished conditioned building floor area inside the thermal envelope including unfinished basements and storage/utility spaces

TABLE R402.1.2.2
REQUIRED POINTS BY BUILDING SIZE FOR BASE CODE AND STRETCH CODE

BUILDING/DWELLING SIZE	BASE CODE REQUIRED POINTS	STRETCH CODE REQUIRED POINTS
Alterations	0	0
Additions < 250 square feet	0	0
Additions 250 to 500 square feet	1	2
Addition 501 to 1,000 square feet	2	3
Addition > 1,000 square feet	3	4
Multifamily <650 square feet	0	1
Multifamily 650 to 900 square feet	1	2
Multifamily 900 to 1,250 square feet	2	3
Multifamily >1,250 to 2,500 square feet	4	5
< 2,500 square feet	5	7
2,500 to 4,000 square feet	7	12
> 4,000 square feet	10	15

*2024 VT RBES requires more points per sq.ft. of conditioned area than 2020 RBES

Stretch Code points requirements are now combined with Base code points table

Slide content courtesy of Efficiency Vermont

Compliance using REScheck software

Section R406 - Alternative using REScheck software

As an alternative to complying with the Package Plus Points method/option, a residential project can be shown to comply with the 2024 VT RBES by using Simulated Energy Performance Analysis.

REScheck software has been developed by the US Department of Energy (DOE) to show compliance with IECC-based model codes, including the 2020 VT RBES.

- Guidance on how to use the REScheck software can be found on the Building Energy Codes Program website: **https://www.energycodes.gov/software -tools**
- Access to the REScheck software tool can be found on the VT Department of Public Service website: **https://publicservice.vermont.gov/energy_efficiency/rbes**

R405.3 – Performance-Based Compliance

Compliance is based on documentation from REScheck modeling software that indicates the home meets or exceeds the target UA for that building

Slide content courtesy of Efficiency Vermont

Sample REScheck Certificate

Generated by REScheck-Web Software

Compliance Certificate

Project 2020 RBES Check

Energy Code:	**2020 Vermont Residential Building Energy Standards**
Location:	**Rutland, Vermont**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Orientation:	**Bldg. faces 270 deg. from North**
Conditioned Floor Area:	**1,872 ft2**
Glazing Area	**20%**
Climate Zone:	**6 (7066 HDD)**
Permit Date:	
Permit Number:	

Construction Site: Owner/Agent: Designer/Contractor:

Compliance: Fails using performance alternative

Compliance: **8.2% Worse Than Code**

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Ceiling: Raised or Energy Truss	936	13.0	47.0	0.016	0.022	15	21
Wall: Wood Frame, 16" o.c. Orientation: Front	558	20.0	5.0	0.044	0.044	21	21
Door 2: Solid Door (under 50% glazing) Orientation: Front	15			0.280	0.270	4	4
Window 2: Vinyl Frame SHGC: 0.28 Orientation: Front	64			0.280	0.270	18	17
Wall 1: Wood Frame, 16" o.c. Orientation: Right side	558	20.0	0.0	0.059	0.044	18	13
Window: Vinyl Frame SHGC: 0.28 Orientation: Right side	258			0.280	0.270	72	70
Wall 2: Wood Frame, 16" o.c. Orientation: Left side	558	20.0	0.0	0.059	0.044	29	22
Window: Vinyl Frame SHGC: 0.28 Orientation: Left side	64			0.280	0.270	18	17
Wall 3: Wood Frame, 16" o.c. Orientation: Back	558	20.0	0.0	0.059	0.044	28	21
Door: Solid Door (under 50% glazing) Orientation: Back	15			0.280	0.270	4	4

Slide courtesy of Efficiency Vermont

HERS Rating to verify RBES compliance

Section R406 - HERS (ERI) Compliance Alternative

The Energy Rating Index (ERI) is a linear scale such that the *ERI Reference Design* has an index value of 100, and residential building that uses no net purchased energy has an index value of 0.

Each integer value on the scale represents a 1% change in the total energy use of the rated design relative to the total energy use of the *ERI Reference Design*.

The ERI shall consider ALL energy used in the residential building.

- So it accounts for the performance and efficiency of mechanical systems (and renewables) in the overall HERS score calculation, NOT JUST the building envelope performance

- Compliance for the 2024 VT RBES via HERS requires that the rated design be shown to have an ERI/HERS score **less than or equal to 60 for Base Code and less than or equal to 59 for Stretch Code**
  - This is a move from 61 for Base Code and 54 for Stretch Code from the 2020 RBES

- Up to 5 points can be earned with renewables

Slide content courtesy of Efficiency Vermont

Rating Process

Benefits of working with a certified HERS Rater:

- You are given a clear path to RBES compliance before you put a shovel in the ground.
- A Rater is hired at design stage and will perform a preliminary project plan and specifications review, as well as the option of a “Preliminary Rating” by modeling the building design’s overall energy use. This pre-lim rating provides a lot of data to inform equipment options for heating, colling and ventilation
- This plan review will allow the builder to know if their proposed design will meet RBES or if any changes need to be made for compliance
- A “Thermal Envelope Inspection” is conducted by the Rater once the building envelope is complete and all insulation is installed and before drywall and finishes
- A Final Inspection is conducted upon project completion where a blower door will be done, ventilation flow rates will be tested, and final project data collected
- A final HERS energy rating will be completed by the Rater and a certificate of performance, and the completed VT RBES certificate will be issued to the builder

Slide content courtesy of Efficiency Vermont

Home Energy Rating Certificate

Projected Report
Based on Plans

Rating Date: 2022-12-28
Registry ID: 620612364
Ekotrope ID: 2lmbN8GL

HIS & HERS Energy Efficiency

HERS® Index Score:

-10

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit www.hersindex.com

Annual Savings

$9,332

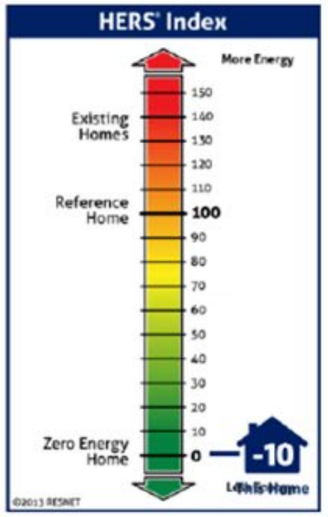
*Relative to an average U.S. home

Home:
2666 Russellville Road
Shrewsbury, VT 05738

Builder:
Steve Spatz

Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	12.4	$677
Cooling	0.0	$0
Hot Water	2.0	$111
Lights/Appliances	21.3	$1,169
Service Charges		$188
Generation (e.g. Solar)	51.5	-$1,958
Total:	**35.7**	**$188**



Home Feature Summary:

Home Type:	Single family detached
Model:	N/A
Community:	N/A
Conditioned Floor Area:	3,054 ft²
Number of Bedrooms:	4
Primary Heating System:	Air Source Heat Pump • Electric • 3.95 COP
Primary Cooling System:	N_A
Primary Water Heating:	Residential Water Heater • Electric • 3.64 UEF
House Tightness:	425.5 CFM50 (0.70 ACH50)
Ventilation:	138 CFM • 53 Watts
Duct Leakage to Outside:	Hydronic Delivery (Radiant)
Above Grade Walls:	R-44
Ceiling:	Attic, R-67
Window Type:	U-Value: 0.15, SHGC: 0.27
Foundation Walls:	R-24
Framed Floor:	N/A

This home meets or exceeds the criteria of the following:

Rating Completed by:

Energy Rater: Adin Maynard
RESNET ID: 9463452

Rating Company: HIS & HERS Energy Efficiency
57R Adams Rd. Williamsburg, MA 01039
4136588784

Rating Provider: Building Efficiency Resources
PO Box 1769 Brevard, NC 28712
800-399-9620

Adin Maynard, Certified Energy Rater
Date: 2/9/23 at 2:28 PM

ekotrope

Energy savings calculated without modifications to the energy model. (As Modeled)

Ekotrope RATER - Version:4.0.2.3092
The Energy Rating Disclosure for this home is available from the Approved Rating Provider.
This report does not constitute any warranty or guarantee.

Owner-Builder Disclosure Statement

Same as the standard RBES form completed by builder/architect, but signature section is specific to homeowner/builder disclosure of non - compliance

Must meet certain conditions to qualify

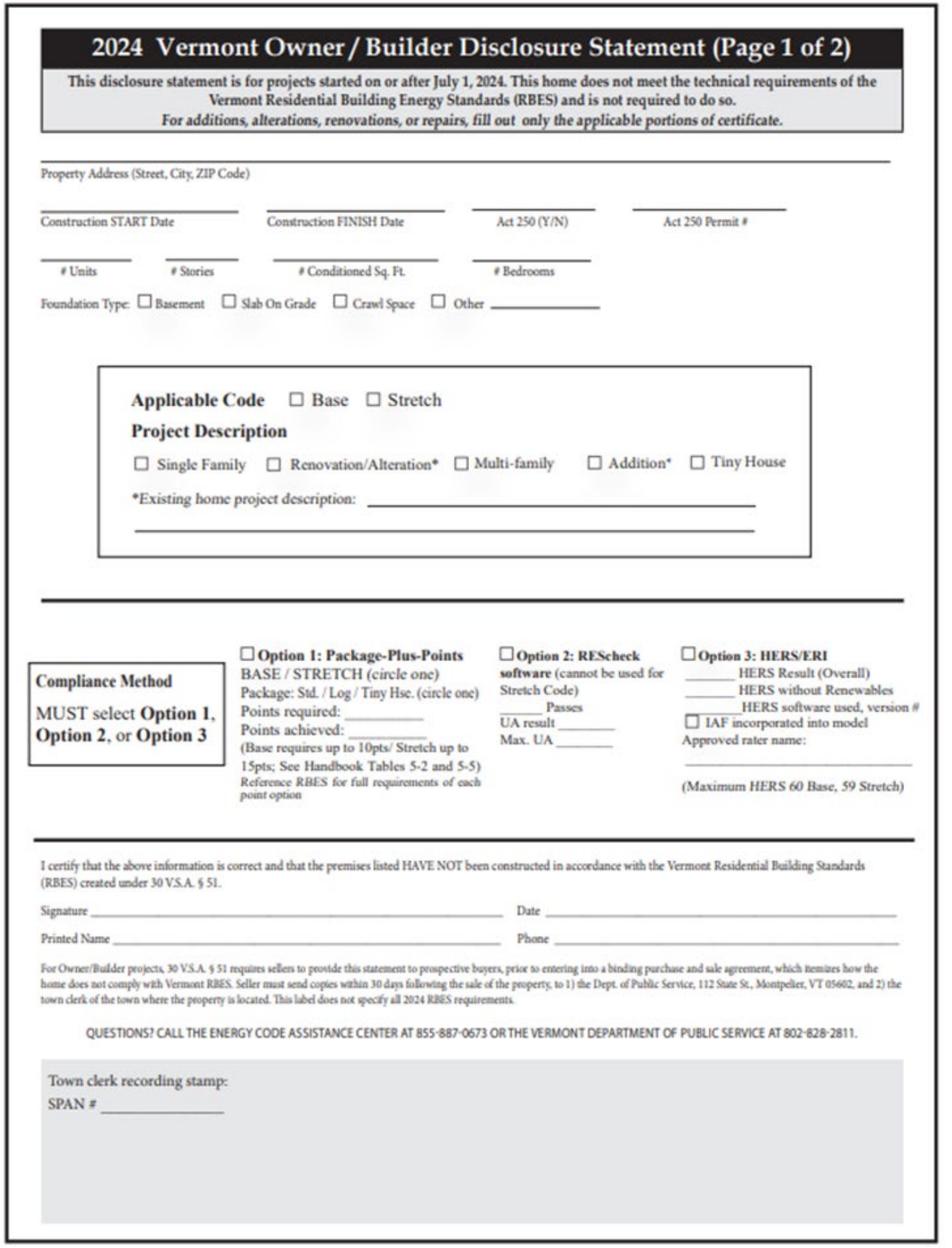
- Owner must actually be in charge of construction
- Owner must live in building
- Owner must disclose non-compliance (with details) to potential buyer, and file Owner/Builder Disclosure Statement with DPS and town land records within 30 days of sale

Slide content courtesy of Efficiency Vermont

2024 Owner / Builder Disclosure Statement -

2 pages as standard certificate, first page has different signature section

Slide content courtesy of Efficiency Vermont



2024 Vermont Owner / Builder Disclosure Statement (Page 1 of 2)

This disclosure statement is for projects started on or after July 1, 2024. This home does not meet the technical requirements of the Vermont Residential Building Energy Standards (RBES) and is not required to do so.
For additions, alterations, renovations, or repairs, fill out only the applicable portions of certificate.

Property Address (Street, City, ZIP Code)

Construction START Date | Construction FINISH Date | Act 250 (Y/N) | Act 250 Permit #

Units | # Stories | # Conditioned Sq. Ft. | # Bedrooms

Foundation Type: ☐ Basement ☐ Slab On Grade ☐ Crawl Space ☐ Other

Applicable Code ☐ Base ☐ Stretch

Project Description

☐ Single Family ☐ Renovation/Alteration* ☐ Multi-family ☐ Addition* ☐ Tiny House

*Existing home project description:

Compliance Method

MUST select **Option 1**, **Option 2**, or **Option 3**

☐ **Option 1: Package-Plus-Points**
BASE / STRETCH (circle one)
Package: Std. / Log / Tiny Hse. (circle one)
Points required: _____
Points achieved: _____
(Base requires up to 10pts/ Stretch up to 15pts; See Handbook Tables 5-2 and 5-5)
Reference RBES for full requirements of each point option

☐ **Option 2: REScheck software** (cannot be used for Stretch Code)
_____ Passes
UA result _____
Max. UA _____

☐ **Option 3: HERS/ERI**
_____ HERS Result (Overall)
_____ HERS without Renewables
_____ HERS software used, version #
☐ IAF incorporated into model
Approved rater name:
_____
(Maximum HERS 60 Base, 59 Stretch)

I certify that the above information is correct and that the premises listed HAVE NOT been constructed in accordance with the Vermont Residential Building Standards (RBES) created under 30 V.S.A. § 51.

Signature _____ Date _____

Printed Name _____ Phone _____

For Owner/Builder projects, 30 V.S.A. § 51 requires sellers to provide this statement to prospective buyers, prior to entering into a binding purchase and sale agreement, which itemizes how the home does not comply with Vermont RBES. Seller must send copies within 30 days following the sale of the property, to 1) the Dept. of Public Service, 112 State St., Montpelier, VT 05602, and 2) the town clerk of the town where the property is located. This label does not specify all 2024 RBES requirements.

QUESTIONS? CALL THE ENERGY CODE ASSISTANCE CENTER AT 855-887-0673 OR THE VERMONT DEPARTMENT OF PUBLIC SERVICE AT 802-828-2811.

Town clerk recording stamp:
SPAN # _____


Q
A

Contacts for Assistance

Vermont (Outside Burlington):

Energy Code Assistance Center
Energy Code Support, Efficiency Vermont

info@efficiencyvermont.com

855-887-0673 (toll free)

Burlington Projects:

Ted Boylan, City of Burlington
Permitting and Inspections
Zoning Division Administrator

tpboylan@burlingtonvt.gov

802-865-7525

Evaluation & Feedback Form

Presentation Evaluation and Feedback Form:

https://forms.office.com/r/RrBCST47cN

VAPDA

Vermont Association of Planning & Development Agencies

Thank you!

Contact:

Ann Janda: ajanda@ccrpcvt.org | (802) 861-0124

For more information, visit: **ccrpcvt.org**