

# WEST MILFORD

## Single-Family Prescriptive Packages 1995 CABO MEC

### Step by Step Instructions

**Step 1:** Determine the glazing area %.

**Step 2:** The glazing area percentage is a maximum, so as long as any buildings built with the selected package have less than or equal to the listed glazing area percentage, the buildings will comply with the selected code. Each component requirement must be met within the selected package, otherwise select another package or use the **REScheck™** software, which can calculate trade-offs for compliance.

**Step 3:** Complete the Prescriptive Package Worksheet available online at <http://www.westmilford.org/FCpdf/ACFB9%2Epdf>.

Package	MAXIMUM		MINIMUM						Heating/Cooling Equipment Efficiency <sup>9</sup>
	Glazing Area % <sup>1</sup>	Glazing U-Factor <sup>2</sup>	Ceiling R-Value <sup>3</sup>	Wall R-Value <sup>4</sup>	Floor R-Value <sup>5</sup>	Basement Wall R-Value <sup>6</sup>	Slab Perimeter R-Value <sup>7</sup>	Crawl Space Wall R-Value <sup>8</sup>	
1	13%	0.50	R-38	R-15	R-30	0	R-4	R-19	High Heat/Cool
2	13%	0.48	R-38	R-14	R-30	0	R-4	R-19	High Heating
3	13%	0.45	R-38	R-15	R-25	0	R-4	R-19	High Heating
4	13%	0.40	R-30	R-13	R-25	0	R-4	R-19	High Heating
5	13%	0.35	R-30	R-11	R-19	0	R-4	R-19	High Heating
6	13%	0.30	R-19	R-11	R-19	0	R-4	R-19	High Heating
7	15%	0.40	R-30	R-15	R-30	0	R-4	R-19	High Heating
8	15%	0.35	R-30	R-13	R-19	0	R-4	R-19	High Heating
9	15%	0.30	R-30	R-11	R-19	0	R-4	R-19	High Heating
10	17%	0.35	R-38	R-15	R-30	0	R-4	R-19	High Heating
11	17%	0.30	R-30	R-13	R-19	0	R-4	R-19	High Heating
12	12%	0.55	R-38	R-18	R-18	R-9	R-6	R-17	Normal
13	12%	0.40	R-38	R-13	R-19	R-9	R-6	R-16	Normal
14	15%	0.45	R-38	R-18	R-19	R-9	R-6	R-17	Normal
15	15%	0.35	R-38	R-13	R-21	R-10	R-9	R-18	Normal
16	18%	0.40	R-49	R-18	R-19	R-9	R-6	R-16	Normal
17	18%	0.35	R-38	R-16	R-19	R-9	R-4	R-14	Normal
18	22%	0.40	R-49	R-19	R-30	R-13	Not Allowed	Not Allowed	Normal
19	22%	0.35	R-49	R-18	R-21	R-10	R-10	R-19	Normal
20	12%	0.65	R-26	R-13	R-19	R-8	R-2	R-17	High Heating
21	12%	0.50	R-26	R-13	R-11	R-6	0	R-8	High Heating
22	15%	0.60	R-38	R-13	R-19	R-9	R-2	R-20	High Heating
23	15%	0.45	R-30	R-13	R-11	R-6	0	R-9	High Heating
24	18%	0.60	R-38	R-17	R-19	R-9	R-2	R-22	High Heating
25	18%	0.45	R-30	R-13	R-15	R-7	R-2	R-14	High Heating
26	22%	0.50	R-38	R-17	R-19	R-9	R-2	R-22	High Heating
27	22%	0.45	R-26	R-13	R-21	R-10	R-2	R-22	High Heating
28	12%	0.70	R-26	R-13	R-19	R-9	R-2	R-22	High Heat/Cool
29	12%	0.55	R-30	R-11	R-13	R-6	0	R-10	High Heat/Cool
30	15%	0.60	R-26	R-13	R-21	R-10	R-4	R-30	High Heat/Cool
31	15%	0.50	R-30	R-13	R-13	R-6	R-2	R-10	High Heat/Cool
32	18%	0.65	R-38	R-19	R-21	R-10	R-3	R-28	High Heat/Cool
33	18%	0.45	R-38	R-13	R-13	R-6	R-2	R-10	High Heat/Cool
34	22%	0.50	R-38	R-16	R-19	R-8	R-2	R-20	High Heat/Cool
35	22%	0.40	R-38	R-13	R-15	R-7	R-2	R-12	High Heat/Cool
28	22%	0.40	R-38	R-13	R-19	R-9	R-2	R-22	High Heat/Cool

# Footnotes

**1. Glazing Area** is the ratio of the area of the glazing assemblies (including sliding-glass doors, skylights, and basement windows but excluding opaque doors) to the gross wall area, expressed as a percentage. The nominal area or rough opening is acceptable for flat windows. Up to 1% of the total allowed glazing area may be excluded from the U-factor requirement. For example, 3 ft<sup>2</sup> of decorative glass may be excluded from a building design with 300 ft<sup>2</sup> of glazing area.

**2. Glazing U-Factors** must be tested and documented by the manufacturer in accordance with the National Fenestration Rating Council (NFRC) test procedure or taken from the glazing U-factor table in Appendix B of the Prescriptive Packages User's Guide located at [www.energycodes.gov](http://www.energycodes.gov). Center-of-glass U-factors cannot be used.

**3. The Ceiling R-values** do not assume a raised or oversized truss construction. If the insulation achieves the full insulation thickness over the plate lines of exterior walls, R-30 insulation may be substituted for R-38 insulation. R-38 insulation may be substituted for R-49 insulation. Ceiling R-values represent the sum of cavity insulation plus insulating sheathing (if used). For ventilated ceilings, insulating sheathing must be placed between the conditioned space and the ventilated portion of the roof.

**4. Wall R-Values** represent the sum of the wall cavity insulation plus insulating sheathing (if used). Do not include R-values for air films, exterior siding, "housewraps", structural sheathing, or interior drywall. For example, an R-19 requirement could be met EITHER by R-19 cavity insulation OR R-13 cavity insulation plus R-6 insulating sheathing. Wall requirements apply to wood frame wall constructions. Metal-frame wall or mass (concrete, masonry, log) wall equivalent R-values can be found in the Prescriptive Packages User's Guide located at [www.energycodes.gov](http://www.energycodes.gov).

**5. The Floor R-Value** requirements apply to floors over unconditioned spaces (such as unconditioned crawlspaces, basements, or garages). Floors over outside air (such as cantilevers, bay windows, etc.) must meet the ceiling requirements.

**6. Basement Wall R-Values** apply to walls of conditioned basements below uninsulated floors and must be insulated from the top of the basement wall to a depth of 10 ft below grade or to the level of the basement floor, whichever is less. The entire opaque portion of any individual basement wall with an average depth less than 50% below grade must meet the same R-value requirement as above-grade walls. Windows and sliding glass doors of conditioned basements must be included with the other glazing.

**7. The Slab Perimeter R-Value** requirements are for unheated slabs. Add an additional R-2 for heated slabs. For packages with a slab insulation requirement, the insulation must extend a total linear distance of at least 24 in. in Zones 2-12. The insulation must extend: 1) down from the top of the slab, or 2) down from the top of the slab to the bottom of the slab and then horizontally underneath the slab, or 3) down from the top of the slab to the bottom of the slab and then horizontally away from the slab, with pavement or at least 10 in. of soil covering the horizontal insulation. Exterior exposed insulation shall be protected.

**8. The Crawl Space Wall R-Value** requirements are for walls of unventilated crawl spaces. The crawl space wall insulation must extend from the top of the wall (including the rim joist and sill plate) to at least 12 in. below the outside finished grade. If the distance from the outside finished grade to the top of the footing is less than 12 in., the insulation must extend a total vertical plus horizontal distance of 24 in. from the outside finished grade.

**9.** Normal refers to the efficiency requirements according to the National Appliance Energy Conservation Act (NAECA). It represents the minimum equipment efficiency which can be legally sold in the U.S. **High Heating** means a furnace AFUE of 90% or more, or a heat pump HSPF of 7.8 or more. **High Cooling** means a SEER of 12 or more. **High Heat/Cool** means both heating and cooling equipment must meet these minimum efficiencies. If you plan to install more than one piece of heating equipment or more than one piece of cooling equipment, the equipment with the lowest efficiency must meet or exceed the efficiency required by the selected package.

**Notes:**

The maximum **Door U-factor** is 0.35 for solid doors. One door may be excluded from this requirement. If a door contains glass and an aggregate U-factor is not available, include the glass area with your glazing and use the non-glazed door U-factor table in Appendix B of the Prescriptive Packages User's Guide located at [www.energycodes.gov](http://www.energycodes.gov).

# Default U-Factors

## Glazing and Door Defaults

The following tables provide default U-factors for glazing and doors based on the glazing or door features. The U-factors in these tables can be used in the absence of NFRC labeled values.

Glazing and doors cannot receive credit for features that cannot be clearly detected, such as argon gas fills and low-emissivity (low-E) coatings. Windows with these features may achieve much lower U-factors than those listed in Table 1. For example, a double-pane wood or vinyl window with low-E glass may have a U-factor around 0.38. The same window with argon gas may be rated at 0.34. Therefore, it may be advantageous to use tested, documented, and labeled U-factors for these types of windows.

Where a composite of materials from two different product types is used, the window or door must be assigned the higher U-factor.

Table 1. U-Factors for Windows, Glazed Doors, and Skylights

Frame/Glazing Features	Single Pane	Double Pane
<b>Metal Without Thermal Break</b>		
Operable	1.30	0.87
Fixed	1.17	0.69
Door	1.26	0.80
Skylight	2.02	1.30
<b>Metal With Thermal Break</b>		
Operable	1.07	0.67
Fixed	1.11	0.63
Door	1.10	0.66
Skylight	1.93	1.13
<b>Metal-Clad Wood</b>		
Operable	0.98	0.60
Fixed	1.05	0.58
Door	0.99	0.57
Skylight	1.50	0.88
<b>Wood/Vinyl</b>		
Operable	0.94	0.56
Fixed	1.04	0.57
Door	0.98	0.56
Skylight	1.47	0.85
Glass Block Assemblies	0.60	

Table 2. U-Factors for Non-Glazed Doors

<b>Steel Doors</b>		
Without Foam Core	0.60	
With Foam Core	0.35	
<b>Wood Doors</b>		
	<b>Without Storm</b>	<b>With Storm</b>
Panel With 7/16-in. Panels	0.54	0.36
Hollow Core Flush	0.46	0.32
Panel With 1 1/8-in. Panels	0.39	0.28
Solid Core Flush	0.40	0.26