

# State Maps and Prescriptive Packages

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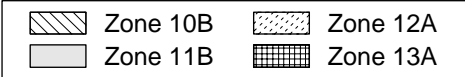
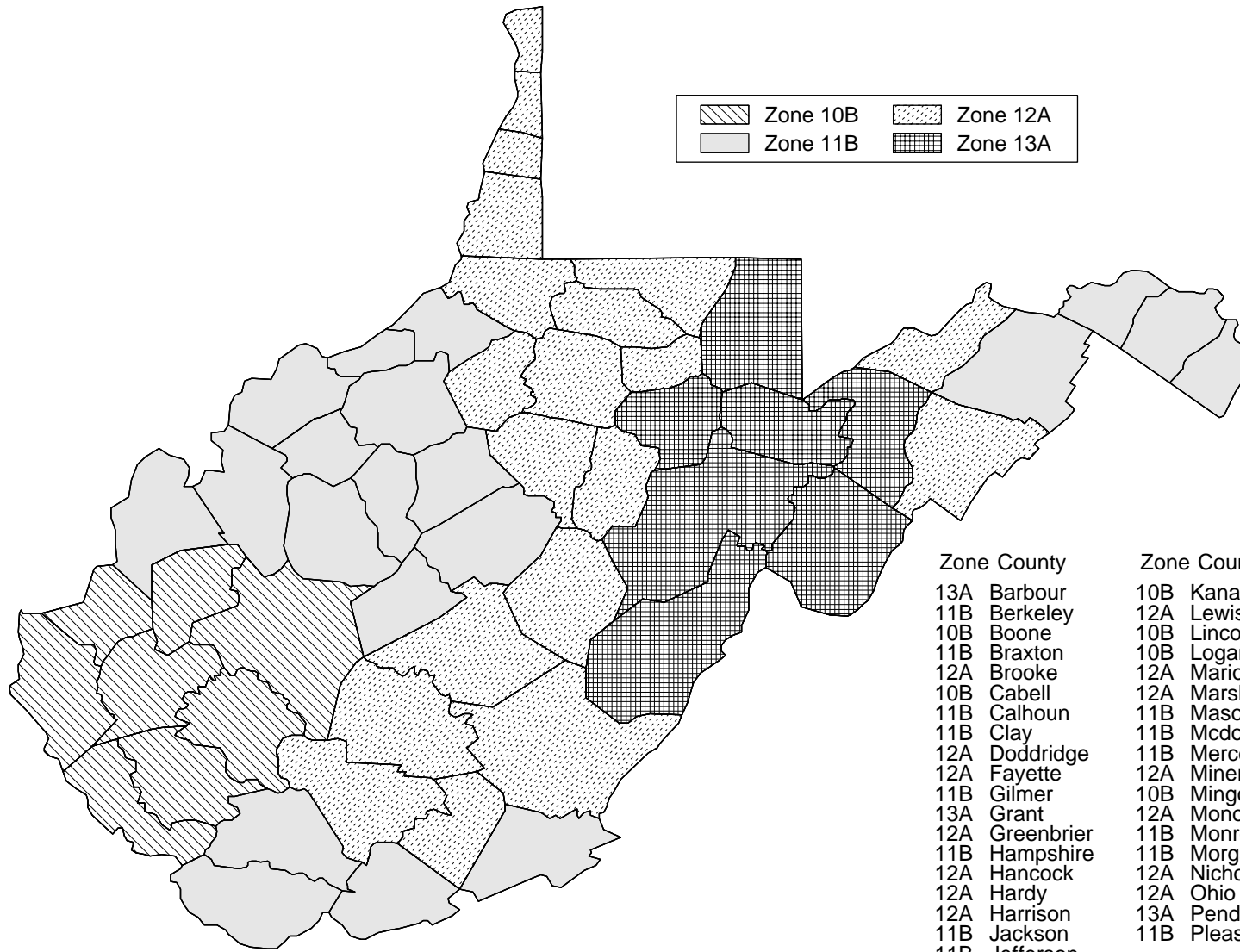
**April 2000**

The State Maps and Prescriptive Packages contain supporting materials that are needed when using the Envelope and Mechanical Compliance Guides. Insulation and other building envelope requirements and some mechanical system requirements vary by climate. The State Maps divide the United States into 33 different climate zones at a county level. Zones are numbered from 1 through 19 (consistent with the IECC and MEC*check* climate zones) and have a, b, and c designations to reflect climate differences that affect cooling; e.g., cooling degree days and solar radiation. The climate maps are unchanged from Version 1.

To determine the climate zone to use with your building, locate the map for your state and identify the zone number from the legend or county list.

To determine insulation and other building envelope requirements, find the prescriptive package number corresponding to your climate zone. The *Envelope Compliance Guide* employs a package approach that requires all components in your design to meet or exceed the prescribed efficiency levels contained in the prescriptive package. If you find the prescriptive packages too constraining, consider using the COM*check-EZ* software, which allows tradeoffs among building envelope components.

# WEST VIRGINIA



Zone County	Zone County	Zone County
13A Barbour	10B Kanawha	13A Pocahontas
11B Berkeley	12A Lewis	13A Preston
10B Boone	10B Lincoln	10B Putnam
11B Braxton	10B Logan	12A Raleigh
12A Brooke	12A Marion	13A Randolph
10B Cabell	12A Marshall	11B Ritchie
11B Calhoun	11B Mason	11B Roane
11B Clay	11B Mcdowell	12A Summers
12A Doddridge	11B Mercer	12A Taylor
12A Fayette	12A Mineral	13A Tucker
11B Gilmer	10B Mingo	11B Tyler
13A Grant	12A Monongalia	12A Upshur
12A Greenbrier	11B Monroe	10B Wayne
11B Hampshire	11B Morgan	12A Webster
12A Hancock	12A Nicholas	12A Wetzel
12A Hardy	12A Ohio	11B Wirt
12A Harrison	13A Pendleton	11B Wood
11B Jackson	11B Pleasants	11B Wyoming
11B Jefferson		

COMcheck-EZ™ Prescriptive Packages

Climate Zone 10b

Envelope Component	Low Fenestration Area (0-10% Window-Wall Ratio)			Medium Fenestration Area (10%-25% Window-Wall Ratio)			High Fenestration Area (25%-40% Window-Wall Ratio)			Very High Fenestration Area (40%-50% Window-Wall Ratio)		
	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing
<b>Walls (a)</b>												
Framed Any Spacing <i>Minimum R-Value</i>	NA	11	11	NA	11	11	NA	11	11	NA	11	11
CMU, 8 in. or greater with Integral Insulation(b) <i>Minimum R-Value</i>	5	11	11	5	11	11	5	11	11	5	11	11
All Other Masonry Walls(c) <i>Minimum R-Value</i>	5	11	11	5	11	11	5	11	11	5	11	11
<b>Windows</b>												
<i>Maximum Solar Heat Gain Coefficient</i>	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection
<i>Maximum U-Factor</i>	Any	Any	Any	0.5	0.6	0.7	0.4	0.5	0.6	0.3	0.4	0.5
	Any	Any	Any	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
<b>Skylight (Limit 3% of Roof Area)</b>												
<i>Maximum U-Factor</i>	0.8			0.8			0.8			0.8		
<b>Roof</b>												
All-Wood Joist/Truss <i>Minimum R-Value</i>	Continuous Insulation	or	Roof Cavity Insulation	Continuous Insulation	or	Roof Cavity Insulation	Continuous Insulation	or	Roof Cavity Insulation	Continuous Insulation	or	Roof Cavity Insulation
Nonwood Joist/Truss <i>Minimum R-Value</i>	17		19	19		25	19		25	19		25
Concrete Slab or Deck <i>Minimum R-Value</i>	18		25	20		25	20		25	20		25
Metal Purlin with Thermal Break <i>Minimum R-Value</i>	17		NA	19		NA	19		NA	19		NA
Metal Purlin without Thermal Break <i>Minimum R-Value</i>	18		30	20		30	20		30	20		30
	18		X	20		X	20		X	20		30
<b>Floor</b>												
All-Wood Joist/Truss <i>Minimum R-Value</i>	Continuous Insulation	or	Cavity Insulation	Continuous Insulation	or	Cavity Insulation	Continuous Insulation	or	Cavity Insulation	Continuous Insulation	or	Cavity Insulation
Nonwood Joist/Truss <i>Minimum R-Value</i>	12		19	12		19	12		19	12		19
Concrete Slab or Deck <i>Minimum R-Value</i>	13		19	13		19	13		19	13		19
	13		NA	13		NA	13		NA	13		NA
<b>Slab Edge or Basement Walls</b>												
<i>Minimum R-Value</i>	Insulation			Insulation			Insulation			Insulation		
	0			0			0			0		

Notes:

- (a) For walls next to unconditioned spaces, use the Low Fenestration Area wall requirements.
- (b) Integral insulation in concrete masonry units may be perlite, vermiculite, or other insulating material. Minimum R-values are in addition to insulation in CMU voids.
- (c) Use of the Other Masonry Walls category is restricted to walls weighing 35 lb/ft2 or more; lightweight masonry veneers and unfilled CMUs <8 in. in thickness do not qualify.

- "NA" indicates the category is not applicable.
- A minimum R-value of zero indicates no insulation is required.
- "Any" indicates any available product will comply.
- "X" indicates no complying option exists in the prescriptive packages.

COMcheck-EZ™ Prescriptive Packages

Climate Zone 11b

Envelope Component	Low Fenestration Area (0-10% Window-Wall Ratio)			Medium Fenestration Area (10%-25% Window-Wall Ratio)			High Fenestration Area (25%-40% Window-Wall Ratio)			Very High Fenestration Area (40%-50% Window-Wall Ratio)		
	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing
<b>Walls (a,b)</b>												
Framed <i>Minimum Cavity R-Value (c)</i>	NA	11	11	NA	11	11	NA	11	11	NA	13	11
Any Spacing <i>Minimum Continuous R-Value (d)</i>	NA	0	0	NA	0	0	NA	0	0	NA	3	0
CMU, 8 in. or greater <i>Minimum Cavity R-Value</i>	NA	11	11	NA	11	11	NA	11	11	NA	11	11
with Integral Insulation(e) <i>Minimum Continuous R-Value</i>	5	0	0	5	0	0	5	0	0	5	0	0
All Other <i>Minimum Cavity R-Value</i>	NA	11	11	NA	11	11	NA	11	11	NA	11	11
Masonry Walls(f) <i>Minimum Continuous R-Value</i>	5	0	0	5	0	0	5	0	0	5	0	0
<b>Windows</b>												
<i>Maximum Solar Heat Gain Coefficient</i>	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection
<i>Maximum U-Factor</i>	Any	Any	Any	0.5	0.6	0.7	0.4	0.5	0.6	0.3	0.4	0.5
	Any	Any	Any	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
<b>Skylight (Limit 3% of Roof Area)</b>												
<i>Maximum U-Factor</i>	0.8			0.8			0.8			0.8		
<b>Roof</b>	Continuous Insulation or Roof Cavity Insulation			Continuous Insulation or Roof Cavity Insulation			Continuous Insulation or Roof Cavity Insulation			Continuous Insulation or Roof Cavity Insulation		
All-Wood Joist/Truss <i>Minimum R-Value</i>	18		25	19		25	23		30	23		30
Nonwood Joist/Truss <i>Minimum R-Value</i>	19		25	20		25	24		30	24		30
Concrete Slab or Deck <i>Minimum R-Value</i>	18		NA	19		NA	23		NA	23		NA
Metal Purlin with Thermal Break <i>Minimum R-Value</i>	19		30	20		30	24		X	24		30
Metal Purlin without Thermal Break <i>Minimum R-Value</i>	19		X	20		X	24		X	24		38
<b>Floor</b>	Continuous Insulation or Cavity Insulation			Continuous Insulation or Cavity Insulation			Continuous Insulation or Cavity Insulation			Continuous Insulation or Cavity Insulation		
All-Wood Joist/Truss <i>Minimum R-Value</i>	14		19	14		19	14		19	14		19
Nonwood Joist/Truss <i>Minimum R-Value</i>	15		19	15		19	15		19	15		19
Concrete Slab or Deck <i>Minimum R-Value</i>	15		NA	15		NA	15		NA	15		NA
<b>Slab Edge or Basement Walls</b>												
<i>Minimum R-Value</i>	Insulation			Insulation			Insulation			Insulation		
	0			0			8			8		

Notes:

- (a) For walls next to unconditioned spaces, use the Low Fenestration Area wall requirements.
- (b) Where values are shown for both cavity and continuous insulation, both requirements must be met.
- (c) Cavity insulation is insulation between framing members or furring strips and does not refer to integral insulation in CMUs.
- (d) Continuous insulation is insulation that is continuous across structural members, and its effectiveness is undiminished by compression or bridging.
- (e) Integral insulation in concrete masonry units may be perlite, vermiculite, or other insulating material. Minimum R-values are in addition to insulation in CMU voids.

- (f) Use of the Other Masonry Walls category is restricted to walls weighing 35 lb/ft<sup>2</sup> or more; lightweight masonry veneers and unfilled CMUs <8 in. in thickness do not qualify.

- "NA" indicates the category is not applicable.
- A minimum R-value of zero indicates no insulation is required.
- "Any" indicates any available product will comply.
- "X" indicates no complying option exists in the prescriptive packages.

COMcheck-EZ™ Prescriptive Packages

Climate Zone 12a

Envelope Component	Low Fenestration Area (0-10% Window-Wall Ratio)			Medium Fenestration Area (10%-25% Window-Wall Ratio)			High Fenestration Area (25%-40% Window-Wall Ratio)			Very High Fenestration Area (40%-50% Window-Wall Ratio)		
	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing
<b>Walls (a)</b>												
Framed Any Spacing <i>Minimum R-Value</i>	NA	11	11	NA	11	11	NA	11	11	NA	13	11
CMU, 8 in. or greater with Integral Insulation(b) <i>Minimum R-Value</i>	5	11	11	5	11	11	5	11	11	5	11	11
All Other Masonry Walls(c) <i>Minimum R-Value</i>	5	11	11	5	11	11	5	11	11	5	11	11
<b>Windows</b>												
<i>Maximum Solar Heat Gain Coefficient</i>	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection
<i>Maximum U-Factor</i>	Any	Any	Any	0.6	0.7	Any	0.5	0.6	0.7	0.4	0.5	0.7
	Any	Any	Any	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4
<b>Skylight (Limit 3% of Roof Area)</b>												
<i>Maximum U-Factor</i>	0.8			0.8			0.8			0.8		
<b>Roof</b>	Continuous Insulation		Roof Cavity Insulation	Continuous Insulation		Roof Cavity Insulation	Continuous Insulation		Roof Cavity Insulation	Continuous Insulation		Roof Cavity Insulation
All-Wood Joist/Truss <i>Minimum R-Value</i>	16		19	19		25	23		30	23		30
Nonwood Joist/Truss <i>Minimum R-Value</i>	17		25	20		25	24		30	24		30
Concrete Slab or Deck <i>Minimum R-Value</i>	16		NA	19		NA	23		NA	23		NA
Metal Purlin with Thermal Break <i>Minimum R-Value</i>	17		25	20		30	24		X	24		30
Metal Purlin without Thermal Break <i>Minimum R-Value</i>	17		X	20		X	24		X	24		38
<b>Floor</b>	Continuous Insulation		Cavity Insulation	Continuous Insulation		Cavity Insulation	Continuous Insulation		Cavity Insulation	Continuous Insulation		Cavity Insulation
All-Wood Joist/Truss <i>Minimum R-Value</i>	16		19	16		19	16		19	16		19
Nonwood Joist/Truss <i>Minimum R-Value</i>	16		19	16		19	16		19	16		19
Concrete Slab or Deck <i>Minimum R-Value</i>	16		NA	16		NA	16		NA	16		NA
<b>Slab Edge or Basement Walls</b>	Insulation											
<i>Minimum R-Value</i>	0			0			8			8		

Notes:

- (a) For walls next to unconditioned spaces, use the Low Fenestration Area wall requirements.
- (b) Integral insulation in concrete masonry units may be perlite, vermiculite, or other insulating material. Minimum R-values are in addition to insulation in CMU voids.
- (c) Use of the Other Masonry Walls category is restricted to walls weighing 35 lb/ft2 or more; lightweight masonry veneers and unfilled CMUs <8 in. in thickness do not qualify.

- "NA" indicates the category is not applicable.
- A minimum R-value of zero indicates no insulation is required.
- "Any" indicates any available product will comply.
- "X" indicates no complying option exists in the prescriptive packages.

COMcheck-EZ™ Prescriptive Packages

Climate Zone 13a

Envelope Component	Low Fenestration Area (0-10% Window-Wall Ratio)			Medium Fenestration Area (10%-25% Window-Wall Ratio)			High Fenestration Area (25%-40% Window-Wall Ratio)			Very High Fenestration Area (40%-50% Window-Wall Ratio)		
	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing	No Framing	Metal Framing	Wood Framing
<b>Walls (a)</b>												
Framed Any Spacing <i>Minimum R-Value</i>	NA	13	11	NA	13	11	NA	13	11	NA	13	11
CMU, 8 in. or greater with Integral Insulation(b) <i>Minimum R-Value</i>	5	11	11	5	11	11	5	11	11	5	11	11
All Other Masonry Walls(c) <i>Minimum R-Value</i>	5	11	11	5	11	11	5	11	11	5	11	11
<b>Windows</b>												
<i>Maximum Solar Heat Gain Coefficient</i>	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection	No Projection	<sup>§.25</sup> Projection	<sup>§.5</sup> Projection
<i>Maximum U-Factor</i>	Any	Any	Any	0.6	0.7	Any	0.5	0.6	0.7	0.4	0.5	0.7
	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4
<b>Skylight (Limit 3% of Roof Area)</b>												
<i>Maximum U-Factor</i>	0.8			0.8			0.8			0.8		
<b>Roof</b>												
All-Wood Joist/Truss <i>Minimum R-Value</i>	Continuous Insulation	or	Roof Cavity Insulation	Continuous Insulation	or	Roof Cavity Insulation	Continuous Insulation	or	Roof Cavity Insulation	Continuous Insulation	or	Roof Cavity Insulation
Nonwood Joist/Truss <i>Minimum R-Value</i>	14		19	19		25	23		30	23		30
Concrete Slab or Deck <i>Minimum R-Value</i>	15		19	20		25	24		30	24		30
Metal Purlin with Thermal Break <i>Minimum R-Value</i>	14		NA	19		NA	23		NA	23		NA
Metal Purlin without Thermal Break <i>Minimum R-Value</i>	15		25	20		30	24		X	24		30
	15		X	20		X	24		X	24		38
<b>Floor</b>												
All-Wood Joist/Truss <i>Minimum R-Value</i>	Continuous Insulation	or	Cavity Insulation	Continuous Insulation	or	Cavity Insulation	Continuous Insulation	or	Cavity Insulation	Continuous Insulation	or	Cavity Insulation
Nonwood Joist/Truss <i>Minimum R-Value</i>	16		19	16		19	16		19	16		19
Concrete Slab or Deck <i>Minimum R-Value</i>	17		25	17		25	17		25	17		25
	17		NA	17		NA	17		NA	17		NA
<b>Slab Edge or Basement Walls</b>												
<i>Minimum R-Value</i>	Insulation			Insulation			Insulation			Insulation		
	0			0			8			8		

Notes:

- (a) For walls next to unconditioned spaces, use the Low Fenestration Area wall requirements.
- (b) Integral insulation in concrete masonry units may be perlite, vermiculite, or other insulating material. Minimum R-values are in addition to insulation in CMU voids.
- (c) Use of the Other Masonry Walls category is restricted to walls weighing 35 lb/ft2 or more; lightweight masonry veneers and unfilled CMUs <8 in. in thickness do not qualify.

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