

# State Maps and Prescriptive Packages

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**April 2000**

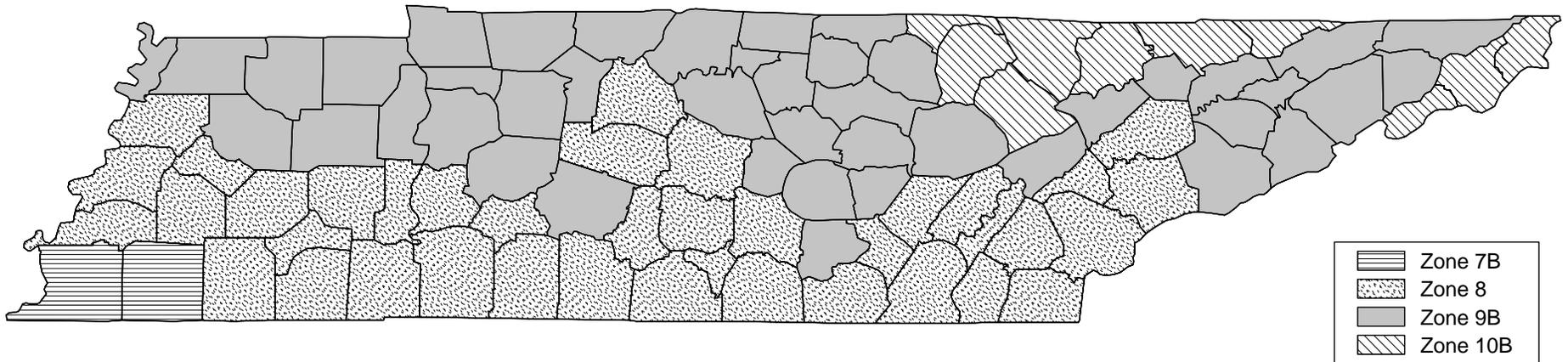
The State Maps and Prescriptive Packages contain supporting materials that are needed when using the Envelope and Mechanical Compliance Guides. Insulation and other building envelope requirements and some mechanical system requirements vary by climate. The State Maps divide the United States into 33 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.

# TENNESSEE

Zone	County	Zone	County	Zone	County	Zone	County	Zone	County	Zone	County	Zone	County	Zone	County
9B	Anderson	10B	Claiborne	10B	Fentress	9B	Hawkins	8	Lauderdale	8	Meigs	9B	Roane	9B	Trousdale
8	Bedford	9B	Clay	8	Franklin	8	Haywood	8	Lawrence	8	Monroe	9B	Robertson	10B	Unicoi
9B	Benton	9B	Cocke	9B	Gibson	8	Henderson	8	Lewis	9B	Montgomery	8	Rutherford	9B	Union
8	Bledsoe	8	Coffee	8	Giles	9B	Henry	8	Lincoln	8	Moore	10B	Scott	9B	Van Buren
8	Blount	8	Crockett	9B	Grainger	9B	Hickman	8	Loudon	10B	Morgan	8	Sequatchie	9B	Warren
8	Bradley	9B	Cumberland	9B	Greene	9B	Houston	9B	Macon	9B	Obion	9B	Sevier	9B	Washington
10B	Campbell	8	Davidson	9B	Grundy	9B	Humphreys	8	Madison	9B	Overton	7B	Shelby	8	Wayne
9B	Cannon	9B	De Kalb	9B	Hamblen	9B	Jackson	8	Marion	8	Perry	9B	Smith	9B	Weakley
9B	Carroll	8	Decatur	8	Hamilton	9B	Jefferson	8	Marshall	10B	Pickett	9B	Stewart	9B	White
10B	Carter	9B	Dickson	10B	Hancock	10B	Johnson	9B	Maury	8	Polk	9B	Sullivan	8	Williamson
9B	Cheatham	8	Dyer	8	Hardeman	8	Knox	8	Mcminn	9B	Putnam	9B	Sumner	9B	Wilson
8	Chester	7B	Fayette	8	Hardin	9B	Lake	8	Mcnairy	8	Rhea	8	Tipton		



COMcheck-EZ™ Prescriptive Packages

Climate Zone 7b

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	13	13	NA	13	13
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	0	0	NA	11	11	NA	11	11	NA	11	11
with Integral Insulation(e) <i>Minimum Continuous R-Value</i>	0	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	13	11	NA	13	11
Masonry Walls(f) <i>Minimum Continuous R-Value</i>	5	0	0	5	0	0	6	0	0	6	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	0.7	0.7	0.7	0.7(g)	0.7(g)	0.7(g)	0.7	0.7	0.7
<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	19		25	19		25
Concrete Slab or Deck <i>Minimum R-Value</i>	15		19	20		25	20		25	20		25
Metal Purlin with Thermal Break <i>Minimum R-Value</i>	14		NA	19		NA	19		NA	19		NA
Metal Purlin without Thermal Break <i>Minimum R-Value</i>	15		25	20		30	20		30	20		30
	15		X	20		X	20		X	20		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>	7		11	7		11	7		11	7		11
Concrete Slab or Deck <i>Minimum R-Value</i>	8		11	8		11	8		11	8		11
	8		NA	8		NA	8		NA	8		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) 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.
- (g) For buildings over 3 stories in height, the maximum U-factor shall be 0.60.
  - "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 8

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 or Metal Framing or Wood Framing	No Framing or Metal Framing or Wood Framing	No Framing or Metal Framing or Wood Framing	No Framing or Metal Framing or Wood Framing
<b>Walls (a)</b>				
Framed Any Spacing <i>Minimum R-Value</i>	NA	13	13	13
CMU, 8 in. or greater with Integral Insulation(b) <i>Minimum R-Value</i>	5	11	11	11
All Other Masonry Walls(c) <i>Minimum R-Value</i>	5	13	13	13
<b>Windows</b>	No Projection <sup>§.25</sup> or Projection <sup>§.5</sup>			
<i>Maximum Solar Heat Gain Coefficient</i>	Any	0.5	0.4	0.3
<i>Maximum U-Factor</i>	Any	0.7	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			
All-Wood Joist/Truss <i>Minimum R-Value</i>	14	19	19	19
Nonwood Joist/Truss <i>Minimum R-Value</i>	15	20	20	20
Concrete Slab or Deck <i>Minimum R-Value</i>	14	19	19	19
Metal Purlin with Thermal Break <i>Minimum R-Value</i>	15	20	20	20
Metal Purlin without Thermal Break <i>Minimum R-Value</i>	15	20	20	20
<b>Floor</b>	Continuous Insulation or Cavity Insulation			
All-Wood Joist/Truss <i>Minimum R-Value</i>	9	10	9	9
Nonwood Joist/Truss <i>Minimum R-Value</i>	10	10	10	10
Concrete Slab or Deck <i>Minimum R-Value</i>	9	9	9	9
<b>Slab Edge or Basement Walls</b>	Insulation	Insulation	Insulation	Insulation
<i>Minimum R-Value</i>	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 9b

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	13	11	NA	13	13
Any Spacing <i>Minimum Continuous R-Value (d)</i>	NA	0	0	NA	0	0	NA	0	0	NA	5	3
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	13	11	NA	13	11
Masonry Walls(f) <i>Minimum Continuous R-Value</i>	5	0	0	5	0	0	6	0	0	6	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	0.5	0.5	0.5	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>	15		19	19		25	19		25	19		25
Concrete Slab or Deck <i>Minimum R-Value</i>	16		19	20		25	20		25	20		25
Metal Purlin with Thermal Break <i>Minimum R-Value</i>	15		NA	19		NA	19		NA	19		NA
Metal Purlin without Thermal Break <i>Minimum R-Value</i>	16		25	20		30	20		30	20		30
	16		X	20		X	20		X	20		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>	11		13	11		13	11		13	11		13
Concrete Slab or Deck <i>Minimum R-Value</i>	12		13	12		13	12		13	12		13
	12		NA	12		NA	12		NA	12		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) 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/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 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>	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>	17		19	19		25	19		25	19		25
Nonwood Joist/Truss <i>Minimum R-Value</i>	18		25	20		25	20		25	20		25
Concrete Slab or Deck <i>Minimum R-Value</i>	17		NA	19		NA	19		NA	19		NA
Metal Purlin with Thermal Break <i>Minimum R-Value</i>	18		30	20		30	20		30	20		30
Metal Purlin without Thermal Break <i>Minimum R-Value</i>	18		X	20		X	20		X	20		30
<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>	12		19	12		19	12		19	12		19
Nonwood Joist/Truss <i>Minimum R-Value</i>	13		19	13		19	13		19	13		19
Concrete Slab or Deck <i>Minimum R-Value</i>	13		NA	13		NA	13		NA	13		NA
<b>Slab Edge or Basement Walls</b>	Insulation											
<i>Minimum R-Value</i>	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.

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- 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.