

Viracon Climate Zone Chart

When designing an energy efficient or LEED building it is best to perform a whole building simulation rather than using prescriptive methods. This will provide a better representation of the building's anticipated energy use than selecting one component at a time. As a result, the finished building should be more energy efficient and function as designed.

Prior to running a whole building simulation, we understand you may need a few glass options as a starting point. The following chart is intended to provide a basic starting place. Please contact us with questions.
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How to use this chart

1. Determine your climate zone

ASHRAE/IESNA Standard 90.1-2004 breaks the United States into multiple Climate Zones, to find the zone for your project see the [Climate Zone Map](#).

2. Understand the assumptions

Calculating compliance involves a number of parameters. The chart below provides glass product options based on ASHRAE/IESNA Standard 90.1-2004 performance requirements with the following assumptions:

Calculations are based on:

- rough openings, not actual sizes
- commercial windows, not residential
- 50% glass to wall ratio
- glass area 2/3 vision, 1/3 spandrel with spandrel excluded from calculation

The resulting glass performance requirements for each climate zone are as follows:

Climate Zone 1: U-Value 1.04 / SHGC 0.17

Climate Zone 4: U-Value 0.40 / SHGC 0.21

Climate Zone 2: U-Value 1.04 / SHGC 0.15

Climate Zone 5 & 6: U-Value 0.40 / SHGC 0.22

Climate Zone 3A & 3B: U-Value 0.40 / SHGC 0.17

Climate Zone 7: U-Value 0.40 / SHGC 0.31

Climate Zone 3C: U-Value 1.04 / SHGC 0.17

Climate Zone 8: Requires Calculation

Solar Heat Gain Coefficient (SHGC) and U-Values are maximized based on the above assumptions and take into account the required 2 points for exceeding ASHRAE by 14% for LEED-NC v2.2. Note: Changes to the assumptions will affect whether or not the product meets ASHRAE requirements.

3. Review products for your climate zone based on the assumptions

Look for the products marked with an 'X' in your climate zone below. These are examples of products that meet or exceed the requirements. There are many glass types available, those listed are just some of the most common glass types. They are broken into the following categories:

- 1" Low-E Insulating Glass
- 1" Low-E Insulating Silk-screened Glass (40% Coverage, V175 White)
- 1" Reflective Insulating Glass
- 1" Reflective Insulating Silk-screened Glass (40% Coverage, V175 White)

Click on the make-up below to obtain the performance data chart for each glass type. Click here for the full [product code legend](#).

1" Low-E Insulating Glass								
Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VUE1-50							X	
VUE2-50						X	X	
VUE3-50					X	X	X	
VUE4-50					X	X	X	
VUE5-50					X	X	X	
VUE6-50							X	
VUE7-50					X	X	X	
VUE9-50	X		X	X	X	X	X	
VUE10-50					X	X	X	
VUE11-50					X	X	X	
VUE15-50							X	
VUE19-50					X	X	X	

Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VE1-2M								
VE1-40							X	
VE1-42							X	
VE1-52								
VE1-55								
VE1-85								
VE2-2M							X	
VE2-40						X	X	
VE2-42							X	
VE2-52							X	
VE2-55							X	
VE3-2M							X	
VE3-40					X	X	X	
VE3-42					X	X	X	
VE3-52							X	
VE3-55							X	
VE4-2M							X	
VE4-40					X	X	X	
VE4-42							X	
VE4-55							X	
VE5-2M							X	
VE5-40					X	X	X	
VE5-42							X	
VE5-52							X	
VE5-55							X	
VE6-2M							X	
VE6-40							X	
VE6-42							X	
VE6-52							X	
VE6-55							X	
VE7-2M							X	
VE7-40					X	X	X	
VE7-42						X	X	
VE7-52							X	
VE7-55							X	
VE9-2M							X	
VE9-40	X		X	X	X	X	X	
VE9-42					X	X	X	
VE9-52						X	X	
VE9-55					X	X	X	
VE10-2M							X	
VE10-40					X	X	X	
VE10-42					X	X	X	
VE10-52							X	
VE10-55						X	X	
VE10-85							X	
VE11-40					X	X	X	
VE11-42					X	X	X	
VE11-55						X	X	
VE19-2M							X	
VE19-40							X	
VE19-42							X	
VE19-52							X	
VE19-55							X	
VRE1-30					X	X	X	
VRE1-38							X	
VRE1-46							X	
VRE1-54							X	

Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VRE2-30	X		X	X	X	X	X	
VRE2-38					X	X	X	
VRE2-46							X	
VRE2-54							X	
VRE2-59							X	
VRE2-67							X	
VRE3-30	X	X	X	X	X	X	X	
VRE3-38	X		X	X	X	X	X	
VRE3-46					X	X	X	
VRE3-54					X	X	X	
VRE3-59						X	X	
VRE3-67							X	
VRE4-30	X		X	X	X	X	X	
VRE4-38					X	X	X	
VRE4-46					X	X	X	
VRE4-54							X	
VRE4-59							X	
VRE4-67							X	
VRE5-30	X		X	X	X	X	X	
VRE5-38					X	X	X	
VRE5-46					X	X	X	
VRE5-54							X	
VRE5-59							X	
VRE5-67							X	
VRE6-30	X		X	X	X	X	X	
VRE6-38					X	X	X	
VRE6-46							X	
VRE6-54							X	
VRE6-59							X	
VRE6-67							X	
VRE7-30	X	X	X	X	X	X	X	
VRE7-38					X	X	X	
VRE7-46					X	X	X	
VRE7-54					X	X	X	
VRE7-59							X	
VRE7-67							X	
VRE9-30	X	X	X	X	X	X	X	
VRE9-38	X		X	X	X	X	X	
VRE9-46					X	X	X	
VRE9-54					X	X	X	
VRE9-59					X	X	X	
VRE9-67					X	X	X	
VRE10-30	X	X	X	X	X	X	X	
VRE10-38	X		X	X	X	X	X	
VRE10-46					X	X	X	
VRE10-54					X	X	X	
VRE10-59						X	X	
VRE10-67							X	
VRE11-30	X	X	X	X	X	X	X	
VRE11-38	X		X	X	X	X	X	
VRE11-46					X	X	X	
VRE11-54					X	X	X	
VRE13-30					X	X	X	
VRE15-30					X	X	X	
VRE19-30	X		X	X	X	X	X	
VRE19-38					X	X	X	
VNE1-37							X	
VNE1-63							X	

Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VNE2-63							X	
VNE3-37	X		X	X	X	X	X	
VNE3-63					X	X	X	
VNE4-37					X	X	X	
VNE4-63					X	X	X	
VNE5-37					X	X	X	
VNE5-63					X	X	X	
VNE6-37					X	X	X	
VNE6-63							X	
VNE7-37					X	X	X	
VNE7-63							X	
VNE9-37	X		X	X	X	X	X	
VNE9-63					X	X	X	
VNE10-37					X	X	X	
VNE10-63						X	X	
VNE11-37					X	X	X	
VNE11-63					X	X	X	
VNE13-63							X	
VNE15-63							X	
VNE19-37					X	X	X	
VNE19-63							X	

1" Low-E Insulating Silk-screened Glass (40% Coverage, V175 White)

Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VUE1-50					X	X	X	
VUE2-50					X	X	X	
VUE3-50	X	X	X	X	X	X	X	
VUE4-50	X	X	X	X	X	X	X	
VUE5-50	X		X	X	X	X	X	
VUE6-50					X	X	X	
VUE7-50	X		X	X	X	X	X	
VUE9-50	X	X	X	X	X	X	X	
VUE10-50	X		X	X	X	X	X	
VUE11-50	X	X	X	X	X	X	X	
VUE13-50					X	X	X	
VUE15-50					X	X	X	
VUE19-50	X		X	X	X	X	X	
VE1-40					X	X	X	
VE2-40	X		X	X	X	X	X	
VE2-42					X	X	X	
VE2-55					X	X	X	
VE3-2M					X	X	X	
VE3-40	X		X	X	X	X	X	
VE3-42	X		X	X	X	X	X	
VE3-52					X	X	X	
VE3-55					X	X	X	
VE4-2M					X	X	X	
VE4-40	X		X	X	X	X	X	
VE4-42					X	X	X	
VE4-55					X	X	X	
VE5-2M					X	X	X	
VE5-40	X		X	X	X	X	X	
VE5-55					X	X	X	
VE6-40					X	X	X	
VE6-42					X	X	X	
VE6-55					X	X	X	
VE7-2M					X	X	X	
VE7-40	X	X	X	X	X	X	X	

Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VE7-42	X		X	X	X	X	X	
VE7-52					X	X	X	
VE7-55					X	X	X	
VE10-2M					X	X	X	
VE10-40	X	X	X	X	X	X	X	
VE10-42	X		X	X	X	X	X	
VE10-52					X	X	X	
VE10-55					X	X	X	
VRE1-38					X	X	X	
VRE2-38	X		X	X	X	X	X	
VRE2-46					X	X	X	
VRE2-54					X	X	X	
VRE2-59					X	X	X	
VRE3-38	X	X	X	X	X	X	X	
VRE3-46	X		X	X	X	X	X	
VRE3-54	X		X	X	X	X	X	
VRE3-59					X	X	X	
VRE3-67					X	X	X	
VRE4-38	X	X	X	X	X	X	X	
VRE4-46	X		X	X	X	X	X	
VRE4-54					X	X	X	
VRE4-59					X	X	X	
VRE4-67					X	X	X	
VRE5-38	X	X	X	X	X	X	X	
VRE5-46	X				X	X	X	
VRE5-54					X	X	X	
VRE5-59					X	X	X	
VRE5-67					X	X	X	
VRE6-38	X		X	X	X	X	X	
VRE6-46					X	X	X	
VRE6-54					X	X	X	
VRE6-59					X	X	X	
VRE7-38	X	X	X	X	X	X	X	
VRE7-46	X		X	X	X	X	X	
VRE7-54	X		X	X	X	X	X	
VRE7-59					X	X	X	
VRE7-67					X	X	X	
VRE10-38	X	X	X	X	X	X	X	
VRE10-46	X		X	X	X	X	X	
VRE10-54	X		X	X	X	X	X	
VRE10-59					X	X	X	
VRE10-67					X	X	X	
VRE19-38	X		X	X	X	X	X	
VRE19-46					X	X	X	
VRE19-54					X	X	X	
VRE19-59					X	X	X	
VNE1-37					X	X	X	
VNE1-63					X	X	X	
VNE2-37	X		X	X	X	X	X	
VNE2-63					X	X	X	
VNE3-37	X	X	X	X	X	X	X	
VNE3-63	X	X	X	X	X	X	X	
VNE4-37	X	X	X	X	X	X	X	
VNE4-63	X		X	X	X	X	X	
VNE5-37	X		X	X	X	X	X	
VNE5-63	X		X	X	X	X	X	
VNE6-37	X		X	X	X	X	X	
VNE6-63					X	X	X	

Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VNE7-37	X	X	X	X	X	X	X	
VNE7-63					X	X	X	
VNE9-37	X	X	X	X	X	X	X	
VNE9-63	X	X	X	X	X	X	X	
VNE10-37	X	X	X	X	X	X	X	
VNE10-63					X	X	X	
VNE11-37	X	X	X	X	X	X	X	
VNE11-63	X		X	X	X	X	X	
VNE13-37					X	X	X	
VNE13-63					X	X	X	
VNE15-37					X	X	X	
VNE15-63					X	X	X	

1" Reflective Insulating Glass

Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VP7-13	X			X				
VP8-13	X			X				
VP9-13	X			X				
VP10-13	X			X				
VP11-13	X			X				
VP14-13	X			X				
VS1-08	X			X				
VS2-08	X	X		X				
VS2-14	X			X				
VS3-08	X	X		X				
VS3-14	X			X				
VS4-08	X	X		X				
VS4-14	X			X				
VS5-08	X	X		X				
VS5-14	X			X				
VS6-08	X	X		X				
VS6-14	X			X				
VS7-08	X	X		X				
VS7-14	X	X		X				
VS10-08	X	X		X				
VS10-14	X			X				
VT9-20	X			X				
VY1-08	X	X		X				
VY2-08	X	X		X				
VY3-08	X	X		X				
VY4-08	X	X		X				
VY5-08	X	X		X				
VY6-08	X	X		X				
VY7-08	X	X		X				
VY7-14	X			X				
VY10-08	X	X		X				
VY10-14	X			X				

1" Reflective Insulating Silk-screened Glass (40% Coverage, V175 White)

Make-up	Zone 1	Zone 2	Zone 3A/3B	Zone 3C	Zone 4	Zone 5 & 6	Zone 7	Zone 8
VT2-20	X			X				
VT3-20	X			X				
VT4-20	X			X				
VT5-20	X			X				
VT6-20	X			X				
VT7-20	X			X				
VT10-20	X			X				