

# 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 Standard 90.1 breaks the United States into zones, to find your project's zone see the [Climate Zone Map](#).

### 2. Understand the assumptions

Complying with or exceeding ASHRAE involves multiple parameters. To provide a starting point we've made the following assumptions and based calculations on:

- \* rough openings, not actual sizes
- \* 40% glass to wall ratio
- \* commercial windows, not residential
- \* 2/3 vision, 1/3 spandrel glass area, spandrel excluded

*LEED v3, Energy & Atmosphere Prerequisite 2, requires a 10% improvement over ASHRAE Standard 90.1-2007. The resulting assembly performance requirements for each climate zone are as follows:*

- |   |   |
|---|---|
| <b>Climate Zone 1:</b> U-Value 1.08 / SHGC 0.22 | <b>Climate Zone 5:</b> U-Value 0.40 / SHGC 0.36 |
| <b>Climate Zone 2:</b> U-Value 0.63 / SHGC 0.22 | <b>Climate Zone 6:</b> U-Value 0.40 / SHGC 0.36 |
| <b>Climate Zone 3:</b> U-Value 0.54 / SHGC 0.22 | <b>Climate Zone 7:</b> U-Value 0.36 / SHGC 0.40 |
| <b>Climate Zone 4:</b> U-Value 0.45 / SHGC 0.36 | <b>Climate Zone 8:</b> U-Value 0.36 / SHGC 0.40 |

*U-Value and Solar Heat Gain Coefficient (SHGC) are maximums based on the assumptions.*

*Note: Assembly performance = glass + framing system. As a glass fabricator, we utilize center of glass values. The framing system and sizes may alter the performance of the overall assembly.*

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

Look for products marked with an 'X' in your climate zone. These are examples of products with a center of glass U-Value / SHGC to meet or exceed the performance listed above. There are many glass types available, those listed are just some of the most common. They're 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 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
VUE1-50				X	X	X	X	X
VUE2-50	X	X	X	X	X	X	X	X
VUE3-50	X	X	X	X	X	X	X	X
VUE4-50	X	X	X	X	X	X	X	X
VUE6-50				X	X	X	X	X
VUE7-50	X	X	X	X	X	X	X	X
VUE11-50	X	X	X	X	X	X	X	X
VUE15-50				X	X	X	X	X
VUE19-50	X	X	X	X	X	X	X	X
VE1-2M							X	X
VE1-40				X	X	X	X	X
VE1-42				X	X	X	X	X
VE1-48							X	X
VE1-52							X	X
VE1-55				X	X	X	X	X
VE1-85								

1" Low-E Insulating Glass

Make-up	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
VE2-2M				X	X	X	X	X
VE2-40	X	X	X	X	X	X	X	X
VE2-42				X	X	X	X	X
VE2-48				X	X	X	X	X
VE2-52				X	X	X	X	X
VE2-55				X	X	X	X	X
VE3-2M				X	X	X	X	X
VE3-40	X	X	X	X	X	X	X	X
VE3-42	X	X	X	X	X	X	X	X
VE3-48				X	X	X	X	X
VE3-52				X	X	X	X	X
VE3-55				X	X	X	X	X
VE4-2M				X	X	X	X	X
VE4-40	X	X	X	X	X	X	X	X
VE4-42				X	X	X	X	X
VE4-48				X	X	X	X	X
VE4-52				X	X	X	X	X
VE4-55				X	X	X	X	X
VE6-2M				X	X	X	X	X
VE6-40				X	X	X	X	X
VE6-42				X	X	X	X	X
VE6-48				X	X	X	X	X
VE6-52				X	X	X	X	X
VE6-55				X	X	X	X	X
VE7-2M				X	X	X	X	X
VE7-40	X	X	X	X	X	X	X	X
VE7-42	X	X	X	X	X	X	X	X
VE7-48				X	X	X	X	X
VE7-52				X	X	X	X	X
VE7-55	X	X	X	X	X	X	X	X
VE8-2M				X	X	X	X	X
VE8-40	X	X	X	X	X	X	X	X
VE8-42	X	X	X	X	X	X	X	X
VE8-48				X	X	X	X	X
VE8-52				X	X	X	X	X
VE8-55	X	X	X	X	X	X	X	X
VE11-40	X	X	X	X	X	X	X	X
VE11-42	X	X	X	X	X	X	X	X
VE11-48	X	X	X	X	X	X	X	X
VE11-55	X	X	X	X	X	X	X	X
VE19-2M				X	X	X	X	X
VE19-40				X	X	X	X	X
VE19-42				X	X	X	X	X
VE19-48				X	X	X	X	X
VE19-52				X	X	X	X	X
VE19-55				X	X	X	X	X
VRE1-30	X	X	X	X	X	X	X	X
VRE1-38				X	X	X	X	X
VRE1-46				X	X	X	X	X
VRE1-54				X	X	X	X	X
VRE1-59				X	X	X	X	X
VRE2-30	X	X	X	X	X	X	X	X
VRE2-38	X	X	X	X	X	X	X	X
VRE2-46				X	X	X	X	X
VRE2-54				X	X	X	X	X
VRE2-59				X	X	X	X	X

1" Low-E Insulating Glass								
Make-up	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
VRE2-67				X	X	X	X	X
VRE3-30	X	X	X	X	X	X	X	X
VRE3-38	X	X	X	X	X	X	X	X
VRE3-46	X	X	X	X	X	X	X	X
VRE3-54	X	X	X	X	X	X	X	X
VRE3-59	X	X	X	X	X	X	X	X
VRE3-67				X	X	X	X	X
VRE4-30	X	X	X	X	X	X	X	X
VRE4-38	X	X	X	X	X	X	X	X
VRE4-46	X	X	X	X	X	X	X	X
VRE4-54				X	X	X	X	X
VRE4-59				X	X	X	X	X
VRE4-67				X	X	X	X	X
VRE6-30	X	X	X	X	X	X	X	X
VRE6-38	X	X	X	X	X	X	X	X
VRE6-46				X	X	X	X	X
VRE6-54				X	X	X	X	X
VRE6-59				X	X	X	X	X
VRE6-67				X	X	X	X	X
VRE7-30	X	X	X	X	X	X	X	X
VRE7-38	X	X	X	X	X	X	X	X
VRE7-46	X	X	X	X	X	X	X	X
VRE7-54	X	X	X	X	X	X	X	X
VRE7-59				X	X	X	X	X
VRE7-67				X	X	X	X	X
VRE11-30	X	X	X	X	X	X	X	X
VRE11-38	X	X	X	X	X	X	X	X
VRE11-46	X	X	X	X	X	X	X	X
VRE11-54	X	X	X	X	X	X	X	X
VRE13-30	X	X	X	X	X	X	X	X
VRE15-30	X	X	X	X	X	X	X	X
VRE19-38	X	X	X	X	X	X	X	X
VNE1-63				X	X	X	X	X
VNE2-63				X	X	X	X	X
VNE3-63	X	X	X	X	X	X	X	X
VNE4-63	X	X	X	X	X	X	X	X
VNE6-63				X	X	X	X	X
VNE7-63				X	X	X	X	X
VNE11-63	X	X	X	X	X	X	X	X
VNE13-63				X	X	X	X	X
VNE15-63				X	X	X	X	X
VNE19-63				X	X	X	X	X

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

Make-up	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
VUE1-50	X	X	X	X	X	X	X	X
VUE2-50	X	X	X	X	X	X	X	X
VUE3-50	X	X	X	X	X	X	X	X
VUE4-50	X	X	X	X	X	X	X	X
VUE6-50	X	X	X	X	X	X	X	X
VUE7-50	X	X	X	X	X	X	X	X
VUE11-50	X	X	X	X	X	X	X	X
VUE13-50	X	X	X	X	X	X	X	X
VUE15-50	X	X	X	X	X	X	X	X
VUE19-50	X	X	X	X	X	X	X	X
VE1-40	X	X	X	X	X	X	X	X
VE2-40	X	X	X	X	X	X	X	X

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

Make-up	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
VE2-42	X	X	X	X	X	X	X	X
VE2-55	X	X	X	X	X	X	X	X
VE3-2M	X	X	X	X	X	X	X	X
VE3-40	X	X	X	X	X	X	X	X
VE3-42	X	X	X	X	X	X	X	X
VE3-52	X	X	X	X	X	X	X	X
VE3-55	X	X	X	X	X	X	X	X
VE4-2M	X	X	X	X	X	X	X	X
VE4-40	X	X	X	X	X	X	X	X
VE4-42	X	X	X	X	X	X	X	X
VE4-55	X	X	X	X	X	X	X	X
VE6-40	X	X	X	X	X	X	X	X
VE6-42	X	X	X	X	X	X	X	X
VE6-55	X	X	X	X	X	X	X	X
VE7-2M	X	X	X	X	X	X	X	X
VE7-40	X	X	X	X	X	X	X	X
VE7-42	X	X	X	X	X	X	X	X
VE7-52	X	X	X	X	X	X	X	X
VE7-55	X	X	X	X	X	X	X	X
VRE1-38	X	X	X	X	X	X	X	X
VRE2-38	X	X	X	X	X	X	X	X
VRE2-46	X	X	X	X	X	X	X	X
VRE2-54	X	X	X	X	X	X	X	X
VRE2-59	X	X	X	X	X	X	X	X
VRE3-38	X	X	X	X	X	X	X	X
VRE3-46	X	X	X	X	X	X	X	X
VRE3-54	X	X	X	X	X	X	X	X
VRE3-59	X	X	X	X	X	X	X	X
VRE3-67	X	X	X	X	X	X	X	X
VRE4-38	X	X	X	X	X	X	X	X
VRE4-46	X	X	X	X	X	X	X	X
VRE4-54	X	X	X	X	X	X	X	X
VRE4-59	X	X	X	X	X	X	X	X
VRE4-67	X	X	X	X	X	X	X	X
VRE6-38	X	X	X	X	X	X	X	X
VRE6-46	X	X	X	X	X	X	X	X
VRE6-54	X	X	X	X	X	X	X	X
VRE6-59	X	X	X	X	X	X	X	X
VRE7-38	X	X	X	X	X	X	X	X
VRE7-46	X	X	X	X	X	X	X	X
VRE7-54	X	X	X	X	X	X	X	X
VRE7-59	X	X	X	X	X	X	X	X
VRE7-67	X	X	X	X	X	X	X	X
VRE19-38	X	X	X	X	X	X	X	X
VRE19-46	X	X	X	X	X	X	X	X
VRE19-54	X	X	X	X	X	X	X	X
VRE19-59	X	X	X	X	X	X	X	X
VNE1-63	X	X	X	X	X	X	X	X
VNE2-63	X	X	X	X	X	X	X	X
VNE3-63	X	X	X	X	X	X	X	X
VNE4-63	X	X	X	X	X	X	X	X
VNE6-63	X	X	X	X	X	X	X	X
VNE7-63	X	X	X	X	X	X	X	X
VNE11-63	X	X	X	X	X	X	X	X
VNE13-63	X	X	X	X	X	X	X	X
VNE15-63	X	X	X	X	X	X	X	X

1" Reflective Insulating Glass								
Make-up	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
VP7-13	X	X	X	X	X	X	X	X
VP8-13	X	X	X	X	X	X	X	X
VP11-13	X	X	X	X	X	X	X	X
VP14-13	X	X	X	X	X	X	X	X
VS1-08	X	X	X	X	X	X	X	X
VS2-08	X	X	X	X	X	X	X	X
VS2-14	X	X	X	X	X	X	X	X
VS3-08	X	X	X	X	X	X	X	X
VS3-14	X	X	X	X	X	X	X	X
VS4-08	X	X	X	X	X	X	X	X
VS4-14	X	X	X	X	X	X	X	X
VS6-08	X	X	X	X	X	X	X	X
VS6-14	X	X	X	X	X	X	X	X
VS7-08	X	X	X	X	X	X	X	X
VS7-14	X	X	X	X	X	X	X	X
VY1-08	X	X	X	X	X	X	X	X
VY2-08	X	X	X	X	X	X	X	X
VY3-08	X	X	X	X	X	X	X	X
VY4-08	X	X	X	X	X	X	X	X
VY6-08	X	X	X	X	X	X	X	X
VY7-08	X	X	X	X	X	X	X	X
VY7-14	X	X	X	X	X	X	X	X
1" Reflective Insulating Silk-screened Glass (40% Coverage, V175 White)								
Make-up	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
VT2-20	X	X	X	X	X	X	X	X
VT3-20	X	X	X	X	X	X	X	X
VT4-20	X	X	X	X	X	X	X	X
VT6-20	X	X	X	X	X	X	X	X
VT7-20	X	X	X	X	X	X	X	X