

# Choosing Windows Based on Utah's Climate

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**Choosing the right windows can improve the livability of your residence**, in addition to **reducing your monthly energy bills** and improving noise insulation. As anywhere from **45 to 61 percent of a home's heating energy can be lost through windows and 79 to 86 percent of heat can be gained**, your choice is all the more important. The issue is no one-size-fits-all answer exists when it comes to **which product is best for your situation**. When looking for **replacement windows**, there are numerous factors to consider, with a primary one being the regional climate and its accompanying weather conditions.



## How Weather Relates to Windows

**Utah's topography is varied by region**, although the weather generally is temperate with comparatively dry air currents that result in light precipitation. **Most parts of the state experience four seasons**, including **cold winters** and **warm summers**.

Empirically, the **most popular window products in Utah are horizontal sliding windows**, which come as **single** or **double sliders**, and **single-hung windows**, according to Salt Lake City-based Advanced Window Products. Those styles are **easy to operate** and have **less air infiltration** when compared to other windows. They also can be **paired with energy efficient glass** to make them the best option in Utah.

When living in a **southwest state with climate contrasts**, another general guideline is to **select windows with insulated protection; good solar heat resistance; and spectrally selective coatings**, according to a **post** from HGTV Online. You'll want to avoid single-pane windows with little solar heat resistance, as they can drive up your utility costs.

Since Utah experiences variegated climates, however, here's a more extensive look at **which features are optimal for different regions within the state and their respective climates**.

## Mixed Climate

A significant portion of the state experiences a mixed climate. The **northern region of Utah**, near Bear Lake, has, on average, **cold winters that last into late spring**, with temperatures reaching about 89 degrees F in July. This region also is one of the **wettest in Utah**, with average precipitation hovering about 17 inches.

**Eastern Utah**, near Flaming Gorge and Dinosaur National Monument, is similar to the top of the state, with average temperatures ranging between 37 and 12 degrees F in January and 87 and 51 degrees F in July. The average annual precipitation is 9.31 inches.

In this sort of mixed climate, residents rely on windows for **both heating and cooling** their homes. You should stick to a product that has a **lower U-factor**, or one of about 0.40 or less. According to the National Fenestration Rating Council, the **U-factor measures the rate at which a window conducts non-solar heat flow** and represents the **performance of the entire window**, including spacer materials and the frame.

**The lower the U-factor, the less heat is transmitted**. Additionally, ideal products for mixed climates will have a

proper **solar heat gain coefficient** (SHGC) of .40 or less, to **reduce the cost of air conditioning and improve comfort**, particularly during the spring and fall swing seasons. Keep in mind, though, the optimal SHGC value may depend on which direction the windows face.

## Colder Climate

**Central Utah** tends to be a bit cooler, with generally wider temperature ranges throughout the day. For instance, the average temperature for July is a high of 83 degrees F and low of 48 degrees F. The average annual precipitation is 8.15 inches.

In general, those living in regions with **cold** climates are **best off choosing windows that are triple- or double-glazed** with a **high SHGC coefficient and low U-factor**, with the goal being to **maximize winter solar heat gains** and **minimize heat loss**.

For **double-glazed windows**, the best specifications are a **U-factor between 0.30 and 0.39**; the optimal **SHGC range is 0.42 to 0.55**.

When selecting **triple-glazed windows**, which are a good fit for energy-efficient homes in cold climates or noisy locations, choose a product with a **U-factor between 0.19 and 0.26**, and a **SHGC value of 0.33 to 0.47**.

Other preferable window features include **high visual transmittance** and **low air infiltration**, which is common with **casement windows**.

## Warmer Climate

The **southern part of Utah** experiences more heat. For instance, southwestern Utah tends to stay the warmest year-round; even in January, the average is a high of 53 degrees F and a low of 25 degrees F. The region is not comparatively dry, though. The average precipitation in southwestern Utah is 14.64 inches. Southeastern and Southcentral Utah both can reach the low 100s during the summer.

In **warmer** climates, one of your top priorities is cooling your home and preventing heat gain. This can best be accomplished by **choosing double-glazed windows with a lower SHGC (between 0.28 and 0.37); a U-factor of .30 or less**, which provides good **insulation**, especially in air-conditioned residences; and **tinted glass**.

## Vinyl Window Frames

When it comes to **window frames**, **low conductive foam-filled fiberglass or vinyl** are good choices. **Advanced Window Products' Patriot Windows** line features **high-performance** glass and **multi-chambered** vinyl frames that are **well-insulated, versatile** and **ergonomic**. The Patriot line pairs well with **Innergy Rigid Thermal Reinforcements**, which are made out of 20 percent biodegradable material and offer both strong reinforcement and effective insulation.

## Energy Star

If you're seeking windows that are **certified by ENERGY STAR** – the U.S. Environmental Protection Agency's energy efficiency program – note that *most of Utah is located in the Northern Climate Zone of the United States*. **Look for labels stating your product is ENERGY STAR Certified** in the highlighted Northern Climate Zone or in all 50 states. Here is the criteria for products to be **ENERGY STAR certified**:

- A U-factor of 0.27 or less (any SHGC is allowed)
- A U-factor of 0.28 AND an SHGC of 0.32 or more
- A U-factor of 0.29 AND an SHGC of 0.37 or more
- A U-factor of 0.30 AND an SHGC of 0.42 or more

## Advanced Window Products in Utah

As you're researching the best window product to choose for your location, don't hesitate to contact **Advanced Window Products**, the only company in Utah that *manufactures, sells and installs* our own windows. Ask about our *high-quality Earthwise Window Products*, our *competitive financing* options, our *lead safe—certified installation staff*, and the *many other products and services that set us apart*.