

GLAZING OPTIONS

Choosing the Correct Glazing System

Today's architecture features ever increasing expanses of glass to capture views and allow natural light to illuminate interiors. Choosing the correct glazing system (the glass and the spacer between the panes of glass) for your climate, exposure and architectural design is one of the most important decisions you will make during the construction process.

Advanced Glazing System

Sierra Pacific's advanced glazing system features a NO Metal TrueWARM® Edge, silicone foam insulating glass spacer from Quanex paired with high performance, spectrally-selective LoE glass from Cardinal.



Warm Edge

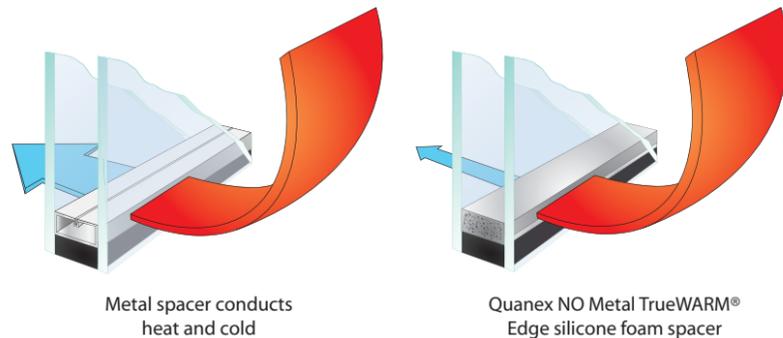
The edge of a window's insulating glass is the area most vulnerable to heating and cooling loss. Therefore, the spacer at the edge of the insulated glass unit plays an important role in the thermal efficiency of the window.

In order to overcome the thermal inefficiency of conventional aluminum window spacers, a new type of spacer product called "warm edge" has evolved in the window industry. Many of today's energy efficient windows offer glass packages with warm edge technology. If the material conducts less heat or cold at the edge of the glass than a conventional aluminum spacer, it is called warm edge. Most of these newer spacers are less conductive and outperform pure aluminum. However, most still contain some kind of metal and metal is highly conductive.

NO Metal TrueWARM® Edge Silicone Foam Spacer

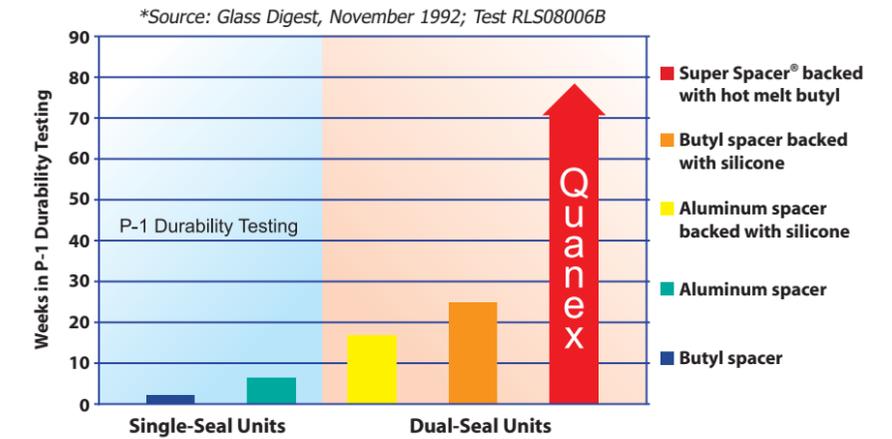
The Quanex NO Metal TrueWARM® Edge silicone foam spacer used in Sierra Pacific products blocks heat flow, unlike most metal based spacers on the market today. It also has integrally incorporated desiccant and a true dual-seal that uses a high-performance acrylic adhesive for its structural seal, backed by a moisture vapor seal. Insulating glass units made with this spacer last up to five times longer in durability tests than single seal units.

All Quanex silicone foam spacers meet the challenge of the P-1 chamber, the test many engineers consider the world's toughest. One week spent in a P-1 chamber is equivalent to approximately one year in the field. The Quanex



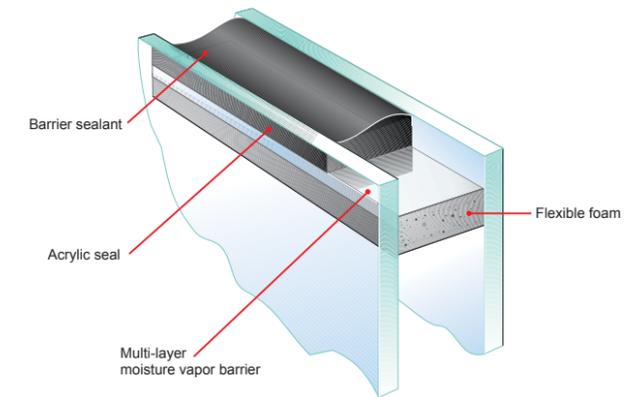
NO Metal TrueWARM® Edge silicone foam spacer used in Sierra Pacific window and door products survived 75+ weeks in the P-1 Chamber!

The Quanex structural foam combines with the strength of the acrylic adhesive to form an extremely reliable primary seal for Sierra Pacific insulating glass units. We back the primary seal with a durable hot melt secondary seal. The aesthetically pleasing, non-reflective Quanex spacer is used in every product Sierra Pacific manufactures.



Features of the NO Metal TrueWARM® Edge Spacer include:

- Low conductivity
- Edge-seal durability
- High wind load resistance
- Excellent thermal performance
- Highly breathable flexible foam matrix that maintains flexibility through wide changes in temperature and barometric pressure
- High desiccant content that absorbs moisture
- Pleasing aesthetic appearance
- High-quality silicone for superior resistance to ozone, UV light and oxidation
- Enhanced environmental comfort and health near windows
- Condensation and mold resistance
- Durability for sustainable performance
- Has passed 75+ weeks of P1 Chamber testing with a butyl secondary seal

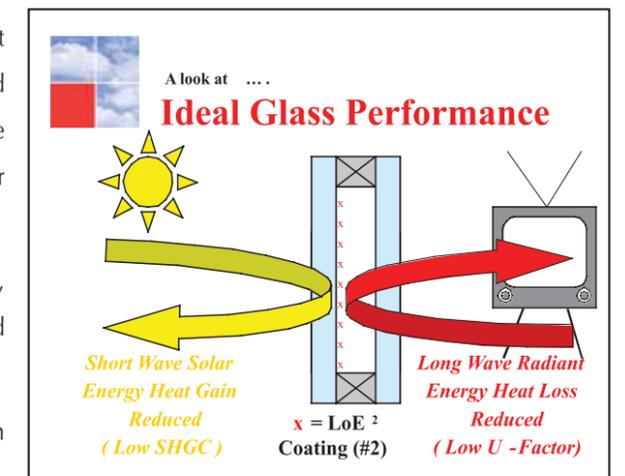


Ideal Glass Performance

The insulating effect of your windows has a direct impact on the comfort factor inside your home or building. Typically 75% of the exposed surface of a window is glass, and the temperature of the interior surface of the glass directly affects the air temperature in the room. The better insulated the glass, the more comfortable the room.

Sierra Pacific offers many glass options, including energy-efficient, spectrally-selective Cardinal LoE glass, and tinted, obscure and specialty glass.

Spectrally-selective LoE coatings have the ability to handle each



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portion of the solar spectrum (visible light, ultra violet and near infrared) differently. These coatings act as invisible insulation on your glass. They allow daylight to pass through the glass as they filter out solar heat for energy-savings during the air-conditioning season. Conversely, spectrally-selective LoE coatings significantly improve winter nighttime insulation, keeping the interior of your building warmer during the heating-controlled months of the year.

LoE Glass

Cardinal LoE²-272 glass delivers year-round comfort in all types of weather. In summer, it rejects the sun's heat and damaging UV rays. In winter, it reflects heat back into the room.

The superior insulating capability of Cardinal LoE²-272 is a key factor in the construction of comfortable windows for cold climates. The dramatic comfort improvement from windows with warm glass surfaces also means the relative humidity of the indoor air can be controlled and maintained properly. Proper humidity levels improve comfort and promote a healthier living environment.

When it's hot outside, ordinary window glass simply welcomes in the heat. Cardinal LoE²-272 has been specially formulated to reject the sun's heat and damaging rays to keep your home cool and comfortable. The patented LoE²-272 coating provides excellent clarity and high performance low solar control.

Cardinal's LoE³-366 is the ultimate performance glass. LoE³-366 delivers the ideal balance of solar control and high visibility. This glass provides high levels of year-round comfort and energy savings compared to ordinary LowE glass. The secret is an unprecedented triple layer of silver in the coating stack. LoE³-366 is formulated to reject solar heat while maintaining attractive visibility. It keeps the heat out while letting light in.

When the temperature soars, ordinary window glass can't handle the heat. And tinted glass spoils the view. Cardinal LoE³-366, however, has been specially formulated to reject the sun's heat without affecting the view. It lets more light in and keeps more heat out. So your home stays cool and comfortable.

Three layers of silver make the clear difference. LoE³-366 has a third layer of silver added during the coating process. Result: a clear coating that blocks even more solar gain, reflects heat, and lets the light stream in. LoE³-366 actually outperforms the tinted glass often used in warm climates.

Cardinal LoE²-240 is our solution to solar glare and thermal discomfort. It provides a great combination of aesthetic appeal with energy savings and indoor comfort. The glare-reducing tint in LoE²-240 is part of the spectrally-selective coating. Therefore, unlike regular gray and bronze tinted glass, the aesthetically-consistent, bluish-grey color and performance of LoE²-240 remain the same regardless of changes in glass thickness from smaller to larger windows.

Wherever glare is a problem, Cardinal LoE²-240 glass is the ideal solution. But LoE²-240 does much more than control glare. It also maintains year-round comfort. In summer, it blocks oppressive solar heat gain and maintains cool glass temperatures and in winter it keeps inside glass temperatures warm.

Regular tinted glass works by absorbing sunlight. The color of regular tinted glass changes with the thickness of the pane and the glass becomes hot in the sunlight. However, LoE²-240 is a coating that is applied to clear glass, so the appearance and performance are the same regardless of the glass thickness.

Cardinal LoE-180 is our choice for passive solar applications. When the weather turns cold, Cardinal LoE-180 glass is a good option. It keeps homes warmer and more comfortable by blocking heat loss to the outside and letting the sun's heat stream in. LoE-180 is the ideal product for passive solar applications.

Cardinal LoE-i89 is the energy-saving fourth surface (room side) coated glass that offers more light transmittance and less reflectance than other room side coatings. LoE-i89 is sputtered onto the indoor lite, the #4 surface, and reflects escaping heat back into the room, thus lowering U-factors. Coupled with Cardinal LoE² or LoE³ glass, this double-pane unit delivers performance much better than clear triple-pane – perfect for cold climates. What's more, LoE-i89 is easy to clean and does not cause a haze to mar the view. Choose this combination to turn your double-pane windows into triple-pane performers.

Dual or Triple Pane Options

Sierra Pacific products are standard with dual pane insulated glass. Triple pane glazing is an option on some products.

Obscure, Tinted and Specialty Glass

Sierra Pacific also offers a wide variety of glazing options to meet your requirements including:

Obscure Glass

We offer many obscure patterned glass types including Rain, Narrow Reed, Glue Chip, Satin Etch and others by request.

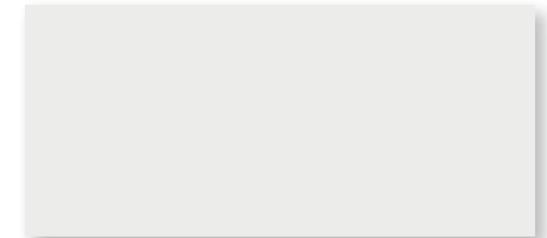
Tinted Glass

For projects with special aesthetic requirements, we offer tinted glass in gray or bronze and other tints by request.

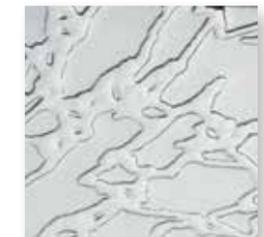
Specialty Glazing

We offer many specialty glazing products including laminated glass for increased security and sound deadening capability. We also offer spandrel panels for commercial projects.

See the Technical Section for NFRC Thermal Performance Data



Clear



Delta Frost



Glue Chip



Obscure



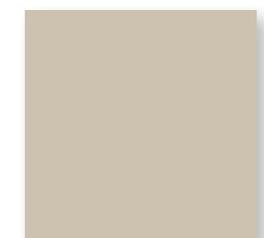
Narrow Reed



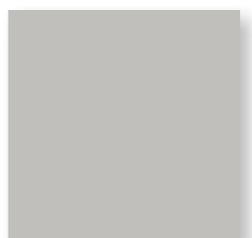
Rain Glass



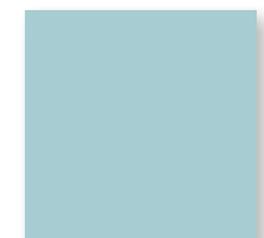
Satin Etch



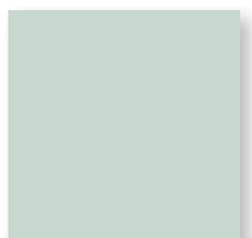
Bronze Tint



Gray Tint



Blue Tint



Green Tint