SLIP
Slim Line Insulating Pane

Single-Pane to Double-Pane Transformation

www.windowslip.com

CHOSEN
WOOD WINDOW
MAINTENANCE, INC.

Update and insulate your windows to modern standards with this reliable, long-term solution.

Slim Line Insulating Pane | SLIP™

More than 20 years of experience restoring wood windows has made this product come to life. Modernize your single-pane windows and make your building more comfortable with the SLIP™ (Slim Line Insulating Pane). This update is an innovative and cost-effective way to retain original, valuable wood windows, while making them more efficient, saving money, and enhancing comfort.

How it Works

We have made it possible to add a tempered* pane directly to each sash overlaying your current glass configuration. Essentially, SLIPs turn your single-pane window into a simulated double-paned window. The frame is an attractive, low-profile, pressed metal extrusion. This simple solution can rejuvenate single-hung, double-hung, casements, picture windows, and more. This modernization is a long-term solution that does not require seasonal reinstallation.

Value of Original Windows

Original vintage windows fit the vintage building they are in. Care was taken to match the style of window to the building and trim. The building can seem at odds with itself it replacement windows are added to upgrade energy performance, but do not match original styling features.

Chances are your windows have already performed well for 50 to 100 or more years. They may be a little creaky and not quite as attractive as they once were, but it's a far better investment to repair a proven performer than to sink money into a new window that only has a 20-year warranty, at best. With proper maintenance, the original windows should last another 100 years.

**Tempered or toughened glass is a type of safety glass processed by controlled thermal or chemical treatments to increase its strength compared with normal glass.*

SLIPs are available in both 1/8" and 1/4" glass with options that include clear, Low-E, and obscure glass finishes.

Replacement Window Challenges

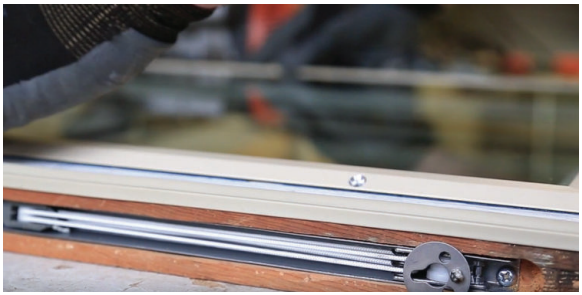
Replacement windows have a rigid structure that must be adapted to fit into the existing window openings. Old houses move and shift over time, and frequently the gaps that open up around replacement windows and the window openings result in more drafts than experienced with the original windows.

Vintage wood windows are composed of old-growth timber. The wood is much denser and more weather-resistant than today's tree-farmed softwoods. Even with years of neglect, these windows still endure due to the high-quality wood, requiring no cladding or additional materials for weather resistance.

Benefits

SLIPs have been tested and are comparable with insulated glass units. However, unlike true insulated glass, SLIPs eliminate the possibility of seal failure and associated performance issues, meaning lower maintenance costs in the future.

SLIPs have a sleek look and feel, with a low profile that blends into the sash: they are virtually unseen once installed. SLIPs allow your window sash to remain fully operable — without opening two sets of windows or removing components, as is typical with traditional storm windows or inserts.



When installing SLIPs on double-hung windows, the weight of the balances may need adjustment. This can be done by adding weights into the weight pockets (ropes/pulleys) or installing hidden balances for a modern operation method.

Benefits list:

- Increased energy efficiency
- Sound reduction
- Maintains original window glass
- Windows stay historically accurate and functional
- Interior or exterior install
- Options of clear, obscure, low-e glass
- Extremely low future maintenance costs
- No loss in outside viewing space

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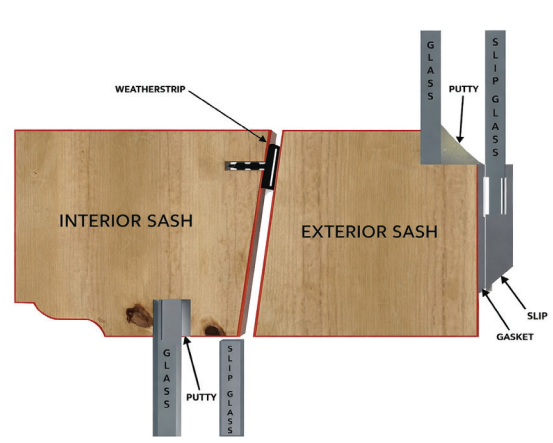
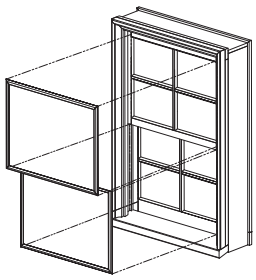
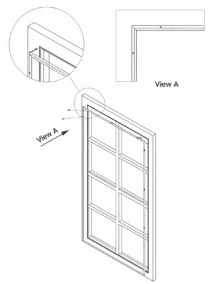
Double-hung SLIP Meeting Rail Detail





Double-hung Window Attachment



Casement Window Attachment

Noise Reduction

SLIPs have been highly effective on downtown buildings when used to reduce noise intrusion from vehicle traffic and noisy neighbors.

Value Engineered

When looking at options to update the energy efficiency of vintage windows, insulating glass conversions are a popular choice. When converting the original glazing must be removed. Next, a large enough channel to accommodate the insulating glass unit must be produced and the window must be reglazed. This can be very costly on multi-lite configurations. SLIP™ provides insulation with a single overlying layer without altering the original window. It is much more cost effective to insulate all of the original glazed windows with a single, overlying glass layer, rather than alter the original window.

Functionality

Your original window will continue to function in the same manner that it always has, whether it is a casement, double-hung or single-hung window.

Protection

SLIP protects the vintage glass and glazing work against the elements with a tempered layer of glass.

Before

After

The Slim Line Insulating Pane is a sleek, low-profile addition to single-pane windows.

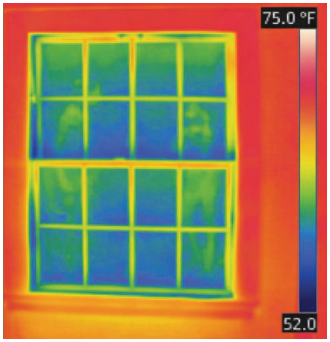
Historic Product

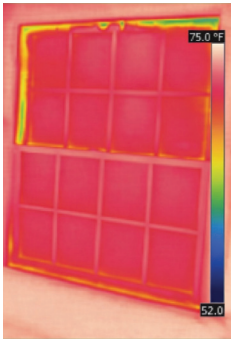
When developing SLIP, our goal was to preserve original window characteristics. With the SLIP, original sash AND glass are preserved, maintaining the uniqueness and charm of the window. The SLIP is very sleek and low to the sash, making it virtually unnoticeable. This product can be installed on the interior or exterior of the sash.

Although SLIPs are a long-term product with little to no maintenance, they can be easily removed.

Tested and Proven Product

SLIPs have been used on large projects such as Fort Vancouver, University of Oregon –Gerlinger Hall, Oregon State University – Bexell Hall, and many more. SLIPs are extremely versatile and an excellent choice for commercial, residential and historic buildings.





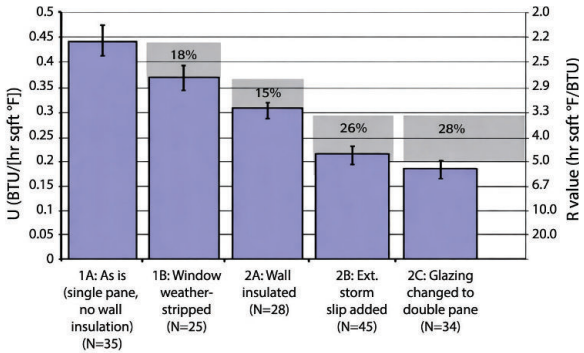
Performance

Energy testing was performed by the Energy Studies in Buildings Laboratory, Department of Architecture at the University of Oregon. Results from this study demonstrated that SLIPs can yield a reduction in energy costs of 72.9% when installed on windows in an average household.

Test results:

- Single-pane windows: 454 therms** and 474 kWh
- Single-pane window with added SLIP: 123 therms and 129 kWh
- Single-pane window with SLIP and weatherstripping: 93 therms & 97 kWh

U-Value Results



***A therm is a unit of measurement of energy (more specifically, thermal energy). The therm is used to measure gas consumption, as well as consumer cost.*

"Based on the energy modeling that we did for the building, including live mockups, the study showed that the SLIPs were very close to the energy performance of the IGU option, and given the lower cost, the decision was made to go with the SLIP system. We are now three years into occupancy and have had no issues with the windows. The SLIPs are very unobtrusive, and we were able to save hundreds of historic windows and still met our stringent standards of energy performance that exceed Oregon state code."

— George Bleekman, Owner's Representative, Capital Design & Facilities Management

University of Oregon Straub Hall
Secondary Window Attachment Case Study

The project team debated multiple approaches to improving the energy efficiency of the building's windows during the first year (2011-2012) of renovation planning:

Option 1: Complete Window Replacements	Option 2: Adding Film to Existing Windows	Option 3: SLIP Window Attachments
The proposed window replacements would be double-pane, divided light windows that would have created a similar appearance to the original windows when installed. However, university officials disregarded this option. While the new windows were similar to the original windows, they felt that the replacements were not similar enough to the original design.	As both the frames and panes were in an excellent condition, the second option was to replace the glazing on the current windows with an insulated film. However, while this would maintain the original appearance of the windows, this method was projected to be both more expensive than other options and more time-consuming.	The SLIP attachments were cheaper than replacements, maintained the look of the original windows, and allowed the windows to remain operable. However, the attachments would add weight to the windows, which could potentially interfere with the weight system that operated the windows.

The Energy Studies in Buildings laboratory tested the effectiveness of the following scenarios: the original windows, windows with one layer of insulating film, insulating glass conversions, and Chosen Window's SLIP attachments. Analyses confirmed the following:

1. Even one layer of insulated film provided significantly better insulation than the original windows.
2. The insulated glass conversion option and the SLIP attachments provided nearly identical levels of insulation.

The full energy report can be found at https://windowslip.com/commercial/ by selecting the energy testing tab. These results lead to the selection of the less expensive SLIP attachment option.

How to Get SLIPs for Your Windows

The creator and manufacturer of the product, Chosen Wood Window, has installed, and still does, install SLIPs on commercial and residential buildings in the Northwest. We've been providing this service for more than a decade.

For customers outside our immediate geographic area who are looking to modernize their windows, we highly recommend our SLIP Kit. We assemble, sell, and ship custom-made, ready-to-install SLIP Kits. These kits contain all the custom-sized materials that are necessary for a successful install. While these kits require a little more than the typical DIY level of skill, they can easily be installed by contractors, carpenters and other construction trades. We have a full-length installation instruction video as well as a tutorial video that contractors can use to ensure proper measurement and installation for custom-sized SLIPs.

DIY SLIP Kit

SLIPS, Balances, Weatherstripping, Etc.

www.windowslip.com • 503-318-7053 • sales@windowslip.com