BetterBuiltNW

Hit Advanced State Energy Code Benchmarks and Build More Desirable Homes With High-Performance Windows

The outstanding energy efficiency of high-performance windows can help builders meet or exceed code in the Northwest. The 2023 Oregon Residential Specialty Code requires windows to have a U-Factor of 0.27, while the 2021 Washington State Energy Code mandates a minimum rating of U-0.30. Because both states' codes require energy performance beyond the baseline, either through additional measures or energy credits, builders can rely on high-performance windows—such as ENERGY STAR®-certified triple-pane windows, which require U-0.22—to achieve and potentially go above code compliance.

Washington builder, New Tradition Homes, has a high standard for quality, and uses innovative designs and new technologies to construct energy-efficient homes. Steve Tapio, project manager at New Tradition Homes, says making the switch to triple-pane windows is "an easy energy-credit option and a fairly streamlined process" for builders to consider. He recommends doing a comprehensive cost-focused code analysis, or value engineering, early in the design stage to avoid inadvertently raising the final project cost when making the switch.

ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights Version 7.0 went into effect in October 2023.

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Switching to triple-pane windows satisfies state energy code additional measure requirements and earns energy credits.

> Triple-pane windows should be an industry standard, whether it's a starter home or a $1 million custom project.
>
> -Chris Sundstrom, Evergreen Homes

Looking for additional information to support building above-code homes? Visit the BetterBuiltNW Resources page for useful videos, case studies, fact sheets, tools, and on-demand trainings to support building above-code homes.

Cross-compatibility allows product choice flexibility

Builders may not need to go back to the drawing board when switching window types. Due to recent advancements in technology, double- and triple-pane windows can be installed interchangeably, with no redesign required in most situations.

Evergreen Homes in Vancouver, Washington, switched to using triple-pane windows exclusively in their new builds. Chris Sundstrom, the business' president, says he has had "no issues with the windows," especially with the quality of the products themselves.

Using triple-pane windows to achieve greater energy efficiency is something Sundstrom recommends for all new builds in the Northwest, "whether it's a starter home or a $1 million custom project." Utility cost savings may offset any associated expenses from making the switch from double-pane windows. "They pay for themselves pretty quickly," he says.

Beyond using triple-pane windows to reach their desired energy performance and satisfy additional measure or energy-credit criteria, builders should also consider how making the switch could help their homes stand out on the market.

Appealing benefits that homebuyers are after

Many homebuyers are attracted to the non-energy-related aspects of high-performance windows, in addition to reduced energy use and lowered utility costs. Some of these benefits include:

- **Mitigating outside noise**: Residents living near busy streets, parks, schools, or other sources of noise may benefit from the sound attenuation of triple-pane windows installed in their homes, compared to less-efficient windows. According to a study conducted by Pacific Northwest National Laboratory, the installation of thin triple-panes reduced sound infiltration by an average of 8–10 decibels when compared to homes with double-pane metal-frame windows.
- **Reducing air infiltration**: ENERGY STAR takes a window's air leakage rating into consideration when deciding whether it meets the certification criteria. An ENERGY STAR-certified window must have an air leakage rating of ≤ 0.3 cfm/ft^2. The lower that rating, the better the home is sealed. High-performance windows can help improve indoor air quality when combined with proper weatherization. Homebuyers in the Northwest, particularly in areas regularly impacted by wildfire smoke, will appreciate how well high-performance windows keep outdoor air from entering the home.
- **Providing high visual appeal**: For some homebuyers, curb appeal is also a priority. High-performance windows come in a variety of styles, making it easier to find a model that both improves energy efficiency and contributes to a home's value.

Choose high-performance windows and start building more efficient homes

As the homebuilding industry continues to focus on maximizing energy efficiency, the Office of Energy Efficiency & Renewable Energy reports many builders are turning to high-performance windows as the new standard. Builders who previously depended on double-pane windows that are no longer ENERGY STAR-certified under Version 7.0 can benefit from switching to triple-pane windows to not only meet and exceed code in the Northwest but to also fulfill program certification requirements.

Including triple-pane windows in the design of a new home can reduce the number of additional measures needed to comply with the Washington and Oregon state energy codes, providing the added benefit of simplifying the total combination of energy upgrades and possible associated expenses to comply with code standards. And by participating in utility incentive programs and earning tax credits, builders and developers can upgrade to high-performance windows more affordably.

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