BUILT AROUND YOU

ENERGY-EFFICIENT SOLUTIONS

MARVIN
Windows and Doors
Built around you.
Marvin® windows and doors are made-to-order to suit the design preferences and performance requirements of each customer. Our products are Built around you® — both the visible characteristics like size, color, and material; and performance features like U-factor and Solar Heat Gain Coefficient (SHGC). As an industry leader in energy efficiency, we offer a variety of flexible and customizable window and door options that help customers balance their initial product investment with long-term performance and energy cost savings. Select or combine options to meet the demands of any residential location, project, climate, or budget.

Marvin wood or aluminum clad wood windows and doors have a reputation for quality and durability. Marvin’s extremely tough surface coating applied to an impact-resistant, extruded aluminum substrate meets the highest industry standards for finish. This translates to more years of gleaming clad exterior, backed by Marvin’s 20-year warranty against loss of adhesion, chalking or fading.*

Contact your Marvin representative to find an energy-efficient solution for your home building project.

* Loss of adhesion is covered for 10 years in coastal applications. For complete warranty information see MarvinWindows.com.
This New England farmhouse-style home returns to the grid 7% of the energy it produces annually. Photo voltaic panels, solar hot water panels, Geothermal HVAC system and Marvin® Tripane windows work together to achieve net zero goals.

ENERGY EFFICIENCY

NFRC RATINGS

Window performance can be compared using a system known as NFRC Ratings. The National Fenestration Research Council is an independent non-profit organization founded by the window, door, and skylight industry in 1989. Fenestration is any opening in a building’s exterior walls. The NFRC evaluates windows and doors using five performance ratings – U-factor, solar heat gain coefficient, visible transmittance, air leakage, and condensation resistance. Of these ratings, U-factor and solar heat gain coefficient are the primary measure of energy efficiency in windows, but visible transmittance, air leakage, and condensation resistance also relate to energy efficiency.

Every Marvin® product leaves the factory with a sticker displaying its ENERGY STAR® qualification and NFRC certified values.

TERMS AND DEFINITIONS

U-FACTOR

correlates to the rate of heat transfer. the lower the number, the better a window is at keeping heat inside a building and the better its insulating properties. the u-factor is key in regions with cold winters.

R-VALUE

measures the resistance a material has to heat loss. r-values are used to rate insulation in other parts of the building envelopes, like in walls, floors and roofs.

SOLAR HEAT GAIN COEFFICIENT (SHGC)

a number between 0 and 1 that measures how well a product blocks heat from the sun. a higher solar heat gain coefficient means a window will allow more heat to pass through. solar heat gain can provide free heat in the winter but can cause overheating in warmer climates.

VISIBLE TRANSMITTANCE (VT)

an optical property that indicates the fraction of visible light transmitted through the windows. low e coatings can reject solar heat gain while allowing visible light to pass through glazing.

LOW EMISSIVITY (LOW E) COATINGS

microscopically thin, transparent metal or metallic oxide layers deposited on a glazing surface to suppress radiative heat flow without compromising the amount of transmitted visible light. low e coatings enhance thermal performance by reflecting interior infrared energy (heat) back to the inside, reducing heat loss through the glass.

GAS FILLS

improve the thermal performance in insulating glass units by reducing conduction in the air space between panes. argon and krypton mixes are commonly used because they slow the movement of warm and cool air and reduce overall heat transfer between interior and exterior glass panes.

INSULATING GLASS

refers to two pieces of glass spaced apart and sealed to form a single glazed unit. ig glass is standard on all marvin products.
ENERGY STAR® is a program of the U.S. Environmental Protection Agency designed to recognize products that meet strict energy efficiency guidelines. ENERGY STAR criteria varies in different areas of the country to suit specific climate and energy efficiency requirements. The new ENERGY STAR Version 6.0 values bring even greater energy efficiency to all four zones of the U.S. There are Marvin® window and door products in most operating styles that meet the 2015 Version 6.0 ENERGY STAR specifications.

Extremely thin coatings of special metallic material are applied to glass panes used in windows and doors to boost their energy efficiency. The industry standard for energy-efficient glass coatings has become Low-Emissivity (Low E) glazing. Coating a glass surface with Low E material can block a significant amount of heat transfer, reducing your home’s need for energy-consuming climate control systems.

ENERGY STAR CRITERIA

<table>
<thead>
<tr>
<th>ZONE</th>
<th>WINDOWS</th>
<th></th>
<th>DOORS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U-FACTOR</td>
<td>SHGC</td>
<td>U-FACTOR</td>
<td>SHGC</td>
</tr>
<tr>
<td>NORTHERN ZONE</td>
<td>≤ 0.27</td>
<td>≤ 0.30</td>
<td>≤ 0.28</td>
<td>≤ 0.32</td>
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<tr>
<td></td>
<td>&gt; 0.28</td>
<td>&gt; 0.37</td>
<td>&gt; 0.30</td>
<td>&gt; 0.42</td>
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<tr>
<td>NORTH-CENTRAL ZONE</td>
<td>≤ 0.30</td>
<td>≤ 0.40</td>
<td>≤ 0.30</td>
<td>≤ 0.40</td>
</tr>
<tr>
<td>SOUTH-CENTRAL ZONE</td>
<td>≤ 0.30</td>
<td>≤ 0.25</td>
<td>≤ 0.30</td>
<td>≤ 0.25</td>
</tr>
<tr>
<td>SOUTHERN ZONE</td>
<td>≤ 0.40</td>
<td>≤ 0.25</td>
<td>≤ 0.30</td>
<td>≤ 0.25</td>
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LOW E COATINGS

How It Works

LOW E COATINGS MANAGE VISIBLE LIGHT AND HEAT

GLAZING OPTIONS - LOW E INSULATING GLASS COATINGS

<table>
<thead>
<tr>
<th>GLAZING</th>
<th>DESCRIPTION</th>
<th>CLIMATE</th>
<th>ENERGY PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW E1</td>
<td>Features a single layer of metallic coating, which blocks heat loss to the outside while reflecting heat back into a room.</td>
<td>NORTHERN</td>
<td>low U-Factor high solar heat gain</td>
</tr>
<tr>
<td>LOW E2</td>
<td>Features a double layer of silver on an inside surface of IG glass. It provides year round performance and comfort. This coating option provides better protection against radiant heat transfer than single layer metallic Low E coatings.</td>
<td>NORTHERN NORTH-CENTRAL SOUTH-CENTRAL</td>
<td>low U-Factor medium solar heat gain</td>
</tr>
<tr>
<td>LOW E3</td>
<td>Features three layers of metallic silver and provides the lowest solar heat gain performance in climates where sun exposure is intense and cooling costs are high.</td>
<td>NORTHERN NORTH-CENTRAL SOUTH-CENTRAL SOUTHERN</td>
<td>low U-Factor lowest solar heat gain</td>
</tr>
</tbody>
</table>
The ENERGY STAR® Most Efficient classification recognizes products that meet high energy-efficiency guidelines. All windows in this category have a maximum U-factor of 0.20. Marvin® offers the industry’s widest selection of wood and clad wood products that meet the rigorous Most Efficient criteria. Units are available in the following operating styles:

<table>
<thead>
<tr>
<th>OPERATING STYLES</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASEMENT</td>
<td>Casement windows are hinged at the side and open outward, providing ventilation that can be easily controlled. Marvin Casement Windows that meet Most Efficient criteria are available in a variety of operating styles: the standard Ultimate Casement with crank opening; with pushout opening, in-swing operation, as a non-operating picture window, or as a round top window.</td>
</tr>
<tr>
<td>AWNING</td>
<td>Awning windows are hinged at the top; the bottom opens outward. Available with either crank or pushout hardware, awnings are often stacked and mullled with other awnings, casements, or picture windows in various configurations.</td>
</tr>
<tr>
<td>VENTING PICTURE</td>
<td>Exclusive to Marvin, the Venting Picture Window is designed to open evenly on all sides, allowing for passive air exchange. When open, the innovative patented screen system provides ventilation while its limited sash travel may enhance security by reducing an “open window” appearance from the exterior.</td>
</tr>
<tr>
<td>DOUBLE HUNG</td>
<td>Both sashes slide vertically in double hung units. Ventilation options can vary by opening the window from top or bottom as little as a crack or as fully as half the window area. Marvin’s wide array of double hung windows include the innovative Next Generation Ultimate Double Hung, which combines state-of-the-art technology and performance with legendary Marvin craftsmanship.</td>
</tr>
<tr>
<td>TILT TURN</td>
<td>Tilt Turn windows are dual functioning, swinging in like a door or tilting in at the top like a hopper. One handle operation gives you control of the venting options.</td>
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</tbody>
</table>

As one of the first Cross Laminated Timber construction projects to be built in the U.S., this residence is truly a modern-day log home. The epitome of recycle and reuse, timber was harvested on the property, cleaned and cut by a local timber mill, shop assembled, and shipped to the site ready for install. Marvin’s energy-efficient clad products complement the conservation and sustainability already designed into the solid wood thermal mass structure.
Marvin® offers thousands of window and door options with two or three panes of glass and a range of glazing options to meet the performance challenges of any climate. The correct glazing selection can meet code requirements and provide optimal and cost-saving energy efficiency.

**HIGH PERFORMANCE GLAZING OPTIONS**

**INSULATING GLASS**

Our standard glazing is Insulating Glass (IG) with Low E2 and argon gas. IG glass is double glazed and, compared to a single glass pane, cuts heat loss significantly because of the insulating air space between the glass layers.

**TRIPANE GLAZING**

Tripane glazing provides enhanced energy performance. Available in products where glazing thickness can be wider than 3/4”, Tripane features two coated panes of glass with a third pane between them. Marvin offers Tripane in a variety of Low E configurations for a range of solar heat gain control.

**INSULATING GASES**

Insulating gases are pumped into the spaces between panes of glass to slow the transfer of heat, increasing the insulating power of a window or door. Marvin products contain argon gas as our standard insulator, but we also offer a krypton/argon/air blend for even greater energy efficiency. The addition of krypton to this gas blend lowers the U-factor and increases the insulating capabilities in narrow airspaces.

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**LAKE LUZERNE RESIDENCE - ADIRONDACKS, NY**

**ARCHITECT:** Phinney Design Group

**FEATURES:** Tripane windows

Designed with a wall of floor-to-ceiling windows, the Lake Luzerne residence offers a breathtaking view of the waterfront from every room of the house. Because of the amount of glass used in this residence, Marvin® high-efficiency Tripane windows were instrumental in meeting energy code requirements.
Designed as a series of three linked pods on a steep slope overlooking a river, this energy-efficient home features a variety of sustainable components along with Marvin® windows and doors: passive solar heating and daylighting, natural ventilation, geothermal heating, cooling and domestic hot water, photovoltaic-ready system, recycled and other sustainable materials.

Marvin® Signature Services engineers custom design solutions to meet unique structural, aesthetic and/or performance requirements. Signature offers innovative possibilities, from modifying and customizing Marvin standard products to designing entirely new solutions to optimize energy conservation and meet project goals.

Combining the craftsmanship of a small millwork shop with the research and technology capabilities of an industry leader, Signature Services will bring unparalleled service and personalization to even the most challenging, complicated home design.
Sustainable building manages the environmental impact of a home over its lifetime. It begins with design, and is carried out through the entire life-cycle of a project: construction, operation, maintenance, renovation and demolition. While most building is guided by short-term economic considerations, sustainable building emphasizes long-term affordability, efficiency and quality.

As market leaders in energy-efficient windows and doors, Marvin® offers countless products for your sustainable building project. Through many sustainable building practices, including Passive Building, LEED® (Leadership in Energy and Environmental Design) Certification and Net Zero building, Marvin will work with you to ensure your home or building minimizes its environmental impact.

**NET ZERO**

Marvin offers various window types that contribute to net zero design, and also offers the flexibility and customization of made-to-order products that is often necessary to capitalize on the other variables involved in net zero building.

**PASSIVE HOUSE**


**LEED® CERTIFIED**

While individual windows and doors are not LEED certified, our products contribute significantly to the credits required for whole-project certification. We’ve developed a database of Marvin products that generates project-specific reports for customers seeking LEED certification data.
As a privately held, family-owned company, Marvin® is used to taking a long-term view. We recognize that a serious commitment to sustainable operations is just good business. We are committed to sustainable business practices for the environment and for the communities in which we serve. Sustainability is much more than “green” business practices. It includes implementing environmentally friendly manufacturing processes and building sustainable communities in the USA where Marvin products are manufactured.

Visit MarvinWindows.com for more information.