

Fenestration

Vinyl Windows

Vinyl Windows in an Eco-Friendly World

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he green-building trend spreading through the industry can, and does, include vinyl windows.

It's worth examining why vinyl window materials for new construction and replacements are a good environmental choice. Today, vinyl is the third largest-selling plastic, with approximately 75% of all vinyl contributing to building and construction applications. While vinyl has been used extensively in many industries for years with well-established benefits, some misconceptions still linger.

Manufacturing Process

Vinyl starts with two simple building blocks: chlorine from common salt (57%), and ethylene from natural gas (43%). The resulting compound, ethylene dichloride, is converted at very high temperatures to vinyl chloride monomer (VCM) gas. Through a chemical reaction, VCM becomes a stable powder: polyvinyl chloride resin. This resin is the basis of vinyl window extrusions.

Environmental Advantages

Energy Efficient: Vinyl is an energy-efficient plastic. The multi-chambered designs used in the building industry regularly outpace other products in thermal performance, helping consumers use less energy and save more money on utility bills.

Recyclable: Vinyl is a recyclable material in many stages of its life. Buy-back programs with suppliers returns as much scrap, trim, and end cuts as possible. This material

is ground and extruded into new profiles. This responsible business practice is tightly controlled for quality assurance. Vinyl can also be safely burned, where its energy is recaptured and re-used.

Safe: OSHA has regulated the industry for more than 30 years, making vinyl an extremely safe material to work with. Health and environmental impacts of vinyl building products have shown to be comparable to or less than the impacts of most alternatives.

Economical: Vinyl has many features that make it an economical building product. More than half of it is derived from common salt, which is an abundant and inexpensive natural resource. Because vinyl is lighter than most other building materials, fossil fuels used in transportation are reduced.

Durable: Vinyl is extremely durable. In fact, most vinyl windows installed during the past 25 years are still in use. Vinyl windows are less likely to decay, corrode, or break down, giving them a longer life cycle and reducing the need for replacement.

Regional Consideration: Selecting locally produced materials is a significant consideration in many green-building programs. For example, the integration of Energy Star®



qualified vinyl windows manufactured within 500 miles of a construction site may contribute points to a LEED® certified project. The U.S. Green Building Council continues to recognize vinyl windows for their energy-efficient benefits.

Answering the Tough Questions

Is vinyl environmentally responsible? When the environmental effects of the manufacturing process are considered alongside its long, efficient, and low-impact life, vinyl windows are viewed by many as being a responsible product.

