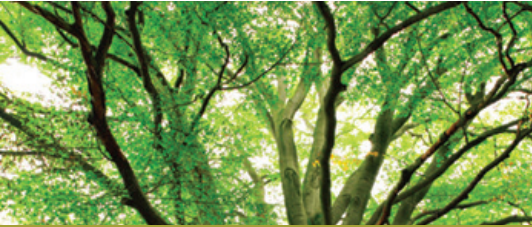


# Siding with the Environment



## The Natural Choice

**Vinyl siding begins with ingredients from nature. Production starts with two simple and abundant building blocks — chlorine (57 percent) from common salt and ethylene (43 percent) from natural gas. And vinyl siding is sustainable. As a meticulously engineered material, vinyl siding durability and expected service life continue to increase as improvements are made to color retention, impact resistance and other key performance criteria. Which means that vinyl siding delivers reliable performance that can last a lifetime on the house, not in the landfill.**

## Green for Life

Green building can play a vital and growing role in the long-term health of our planet. And today's vinyl siding, the most popular choice for exterior cladding in the United States and Canada, delivers recognized environmental benefits to help make and keep homes green.

Throughout its life cycle — manufacturing, transportation, installation, service life and waste management — vinyl siding scores well on tough environmental measures. Using recognized life cycle assessment tools and fact-based data, vinyl siding beats fiber cement and brick hands down and rivals cedar siding in overall green performance.

The facts show how vinyl siding sides with the environment. So be aware that selecting exterior claddings based on assumptions or “greenwashing,” rather than facts, can lead to unnecessary and avoidable environmental impact.



## Green by Many Standards

Leading green building certification programs award points for the performance that vinyl siding delivers. In fact, vinyl siding has the potential to earn more points than other exterior cladding options.

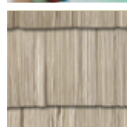
For example, vinyl siding can contribute to obtaining points in the 2012 ICC-700 National Green Building Standard<sup>®</sup> as a material that requires no additional finish resources, is termite-resistant, may contain recycled content, and may qualify as an indigenous material depending on the proximity of the building site to the manufacturing and extraction location. Vinyl siding also satisfies requirements listed in the International Green Construction Code and the California Green Construction Code. In addition, insulated siding may contribute points for building energy efficiency and create a better thermal building envelope.<sup>1</sup>

Vinyl siding also can support certification through the LEED for Homes<sup>2</sup> and LEED for New Construction<sup>3</sup> Rating Systems from the United States Green Building Council (USGBC).

### DID YOU KNOW?

Vinyl siding is one of the only non-absorptive cladding options. Absorptive claddings, including fiber cement, brick and wood, can hold moisture, create stops that can accumulate moisture and create the potential for penetration. This may lead to rot, mold and/or poor indoor air quality.

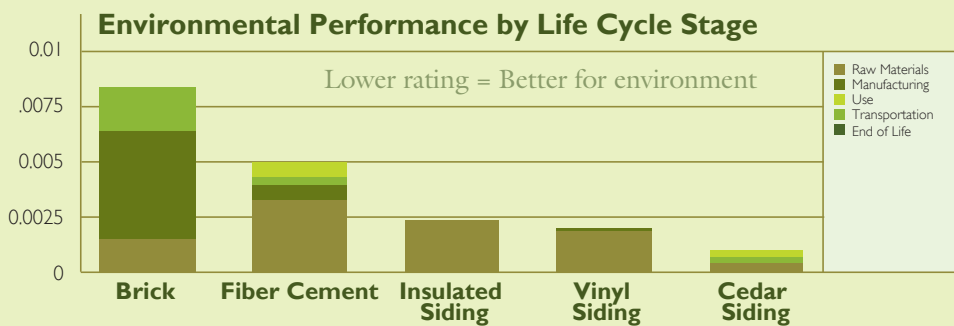
VINYL SIDING INSTITUTE  
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## Better Environmental Performance

Vinyl siding outperforms fiber cement and brick in all life cycle stages for environmental and economic performance when analyzed using the Building for Environmental and Economic Sustainability (BEES)<sup>®</sup> software, a life cycle analysis tool developed by the National Institute of Standards and Technology (NIST).

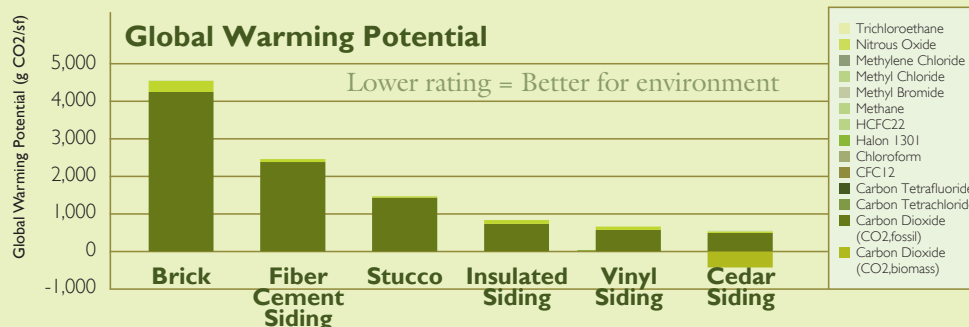
The graph below, produced using BEES software, shows how vinyl siding compares to other options on a combination of important environmental criteria. This performance is why vinyl siding contributes to achieving points for certification in the USGBC LEED for New Construction, LEED for Homes and LEED for Canada rating systems, as well as the 2012 ICC-700 National Green Building Standard<sup>®</sup>.



Even though the production of vinyl siding and other vinyl products has grown considerably during the past 25 years, the level of dioxin released to the environment has decreased by more than 90 percent over the same time period. Brick and mortar are responsible for almost 300 times the human health impact of vinyl siding, and fiber cement is responsible for more than 200 times the impact of vinyl siding, as shown through analysis using BEES software.

## Less Embodied Energy and Climate Change Potential

Compared to other cladding, vinyl siding uses modest amounts of energy for manufacturing. Vinyl siding requires less water and energy to manufacture per square foot than fiber cement. Also, analysis with BEES software confirms that vinyl siding manufacturing consumes less than half the energy and fuel necessary to manufacture brick and mortar. In addition, vinyl siding's lighter weight — especially compared to brick and fiber cement — requires less fuel consumption for transportation. Thus, vinyl siding contributes significantly less to climate change, as illustrated in this graph produced using BEES software.

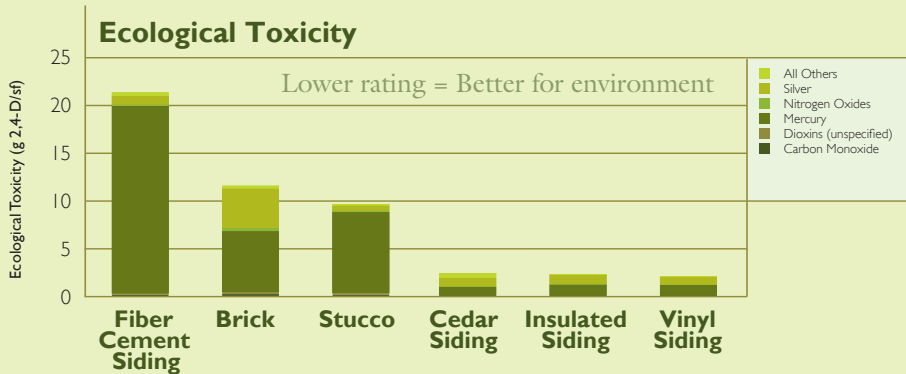


**Vinyl siding, unlike some other exterior cladding, provides exceptional rainscreening performance. It effectively enables moisture to drain out of an exterior wall assembly, dramatically reducing water accumulation that can lead to rot and mold.**

## Greater Efficiency Minimal Waste

### Keeping Toxic Chemicals to a Minimum

Vinyl siding production emits significantly lower levels of toxic chemicals, including mercury and silver, than other cladding options. (See the graph below, produced using BEES software.) In addition, per the *ASTM D3679* standard, vinyl siding certified through the *VSI Product Certification Program* must be free of lead.



### Proper Installation Further Reduces Scrap

Led by the Vinyl Siding Institute (VSI), the industry’s commitment to installer education and training means more efficient installations, resulting in less waste. The *VSI Certified Installer Program* includes a rigorous course of study and examination on the proper installation techniques for vinyl siding, soffit and accessories, based on the *ASTM D4756* standard. Certified Installers are trained in waste reduction techniques, including proper material estimating and installation to reduce waste generation. These techniques help ensure installation of vinyl siding produces as little scrap as possible.

### Vinyl Siding Supports Carefree Living

Economic performance and long service life are key factors in measuring sustainability. Vinyl siding delivers in both areas. It requires no painting, staining or sealing at installation or for ongoing maintenance. These attributes not only give vinyl siding a typically lower installed cost than wood, brick, fiber cement, stone or stucco — they prevent releases of toxins and maintenance-related substances from entering the environment.

By comparison, silica-based fiber cement, like James Hardie siding products, must be painted and caulked, and special tools are needed for installation, along with dust masks or respirators. Silica-based fiber cement may potentially cause adverse health effects, such as silicosis (an incurable lung disease), to installers who do not use respirators.<sup>4</sup> Vinyl siding does not utilize any materials that can cause adverse health effects to installers, homeowners or others.



Vinyl siding manufacturing is an extremely efficient process. Production requires minimal raw material and any scrap produced may be returned immediately into the manufacturing process, resulting in virtually no waste. Scrap from manufacturing fiber cement, on the other hand, is typically sent to landfills. During installation, vinyl siding generates very little waste compared to other cladding. For example, average scrap rates from vinyl siding installation are less than 1.9 percent of total construction waste from a typical 2,000-square-foot home with vinyl siding on three sides. By comparison, scrap generated from installing brick on only the façade of a typical 2,000-square-foot home generates 1,000 pounds, or 12.5 percent, of the total construction waste.<sup>5</sup>

## Green for Good

Vinyl siding is a durable, long-life product. The National Association of Home Builders has cited “Lifetime” as the estimated life expectancy of vinyl siding on a home in its *Study of Life Expectancy of Home Components* (February 2007). It also meets the requirements of the California Green Construction Code as a material with longevity and minimal deterioration under conditions of use and as a material that requires little, if any, finishing.



More information and research documentation on life cycle performance is available at [vinylsiding.org](http://vinylsiding.org) and on vinyl at [vinylinfo.org](http://vinylinfo.org). The more you learn, the more you'll appreciate why green building sides with vinyl.

<sup>1</sup>To order a copy of the 2012 ICC-700 National Green Building Standard®, visit <http://secure.builderbooks.com/cgi-bin/builderbooks/979>. <sup>2</sup>For a copy of the Leadership in Energy and Environmental Design (LEED) for Homes Rating System, visit [www.usgbc.org/leed/homes](http://www.usgbc.org/leed/homes). <sup>3</sup>For a copy of LEED for New Construction Rating System, visit [www.usgbc.org/leed/nc](http://www.usgbc.org/leed/nc). <sup>4</sup><https://www.msds.com> <sup>5</sup><http://www.toolbase.org/Best-Practices/Construction-Waste/residential-construction-waste>

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