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A Dozen Things You Might Not Know That Make Vinyl Siding Green

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A Dozen Things You Might Not Know That Make Vinyl Siding Green By Jerry Y. Huntley, President, Vinyl Siding Institute, Inc.

With the green building movement well underway, many remodelers, builders, architects, planners and homeowners are evaluating green building products. There is a great deal of information available, some of which is based on fact and science and some based on hearsay and misinformation. Many organizations, including the [Vinyl Siding Institute, Inc.](http://www.vinylsiding.org) (VSI), are addressing the issue of defining green.

In order to better understand the facts, VSI worked with green building consultant Sustainable Solutions Corporation to conduct a review of available data related to vinyl siding, including life-cycle data. Life-cycle analysis is a technique to evaluate the environmental impact of a material, product or a service throughout all stages of its life, from extraction or harvesting of raw materials through processing, manufacture, installation, use and ultimate disposal or recycling. There are various software tools specifically designed to measure life-cycle analysis. The data found in this article was conducted with the Building for Environmental and Economic Sustainability (BEES[®]) software. Developed by the National Institute of Standards and Technology (NIST), BEES is a life-cycle analysis tool established per ISO14040 and ASTM standards, and it is recognized by green building professionals as a useful tool for selecting environmentally preferable products.

The BEES analysis results prove that vinyl siding scores well on tough environmental measures through all life-cycle stages. Evidence shows that from its start with two simple and natural building blocks, to its efficient manufacturing process and modest transportation energy use, vinyl siding is sustainable, especially when compared to other exterior cladding.

The following 12 facts illustrate why vinyl siding is green. For more details on these facts, see VSI's green paper at www.vinylsiding.org/greenpaper.

1. Can contribute to points in leading green building programs

Based on its durability and low maintenance, most green building programs will qualify vinyl siding for points. Most significantly, vinyl siding has the potential to contribute to achieving more points than other exterior cladding in the leading green building certification programs including the United States Green Building Council (USGBC) LEED[®] for New Construction and LEED[®] for Homes Rating Systems and the ANSI approved ICC 700-2008 National Green Building Standard[™].

2. Boosts a home's R-value

Recent innovations in vinyl siding have proven to strengthen a home's sustainable performance. One of the industry's most popular product innovations is insulated vinyl siding, which helps increase the exterior wall's R-value and contributes to a home's energy efficiency. According to the ASHRAE Handbook: Fundamentals, published in 2005, insulated vinyl siding can increase the effective R-value of a wall by 10–16 percent compared to traditional vinyl siding. This added R-value reduces energy consumption over the lifetime of the building or home and reduces its overall carbon footprint.

3. Generates less waste during manufacturing

Vinyl siding manufacturing is an extremely efficient process. The ability to immediately return scrap and off-specification materials (regrind) directly into the manufacturing process results in virtually no manufacturing waste. Additionally, some manufacturers integrate recycled vinyl into their siding products.

4. Produces little waste when installed

Installation of vinyl siding generates very little waste compared to other exterior cladding. According to industry research the construction waste estimate of a typical 2,000-square-foot house, assuming three sides of exterior clad in vinyl siding and a brick veneer of the front façade, average scrap rates from vinyl siding installation are less than 1.9 percent of total construction waste. In comparison, masonry waste, primarily composed of scrap generated from the installation of brick veneer on the facade, yields 1,000 pounds of waste or 12.5 percent of the total construction waste.

5. Requires fewer resources to maintain

Vinyl siding has the advantage of simple maintenance. Unlike other exterior cladding, vinyl siding does not require painting, staining or caulking and only needs periodic cleaning with mild soap and water. This lowers the cost of maintaining vinyl siding and ensures that it is not responsible for releasing harmful solvents into the environment, as can happen with painting and staining.

6. Engineered to last

The vinyl siding industry initiatives have focused on improved durability, and as the only exterior cladding with

both third-party product certification and certified installer programs, vinyl siding offers the following characteristics that make it durable: low maintenance, service life, wind resistance, color retention, water resistance, resistance to insect damage, chemical resistance and energy efficiency.

7. Offers better environmental performance

Vinyl siding has excellent environmental performance when compared with other exterior cladding, as indicated by the life-cycle analysis of BEES. This holds true with the effects of all life-cycle stages measured by BEES, including raw material acquisition, manufacture, transportation, installation, use and waste management. The graph below was produced using BEES. Note: Fiber cement data is not currently available for comparison in BEES analysis.

8. Balances economic with environmental performance

In addition to its exemplary environmental performance, vinyl siding is an economically sensible option. Its installed cost is typically lower than that of wood, fiber cement, stucco, brick or stone.

9. Contributes less to global warming than brick

Manufacturing vinyl siding consumes less than half the energy and fuel consumed in the process of manufacturing brick and mortar. Plus, its lighter weight compared to other exterior cladding provides a reduced transportation energy impact

10. Releases fewer toxic chemicals than other exterior cladding through its life-cycle

Compared to other exterior cladding, vinyl siding is responsible for the emission of significantly lower levels of toxic chemicals, including mercury and silver, into the environment. The graph below was produced using BEES and includes the effects of all life-cycle stages, including raw material acquisition, manufacture, transportation, installation, use and waste management.

Furthermore, vinyl siding certified through the VSI [Vinyl Siding Product Certification Program](#) specifically requires that the product be free of lead, which reduces the chances of this toxic material entering the waste stream.

11. Emits less dioxin than other exterior cladding

According to the U.S. EPA, in the year 2000, vinyl production was responsible for less than 2 percent of the total dioxin released into the environment in the United States. The production of cement creates more dioxin (from combustion of hazardous and non-hazardous waste in cement kilns) than does the production of vinyl. Because of this, cement-based products, including stucco, brick and mortar, are generally responsible for the creation of more dioxin than is vinyl siding. The graph below was created using BEES and shows that brick and mortar is responsible for almost 10 times the dioxin production of vinyl siding.

Additionally, as shown below, the U.S. EPA reports that despite considerable growth in the production of vinyl siding and other vinyl products over the past twenty years, the level of dioxin released into the environment each year has decreased by nearly 90 percent over the same time period.

12. Installs safely

Vinyl siding does not utilize any materials that can cause adverse health effects to installers – or to anyone. Advocates or manufacturers of silica-based fiber cement cannot make this claim. Silica-based fiber cement siding products require special tools for installation, along with a dust mask or respirator.

As green building continues to play a vital role in the remodeling industry, vinyl siding delivers many recognizable benefits. Beauty, durability, value, low maintenance and sustainability are among them. By using vinyl siding, remodelers and homeowners can help make their homes green.

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