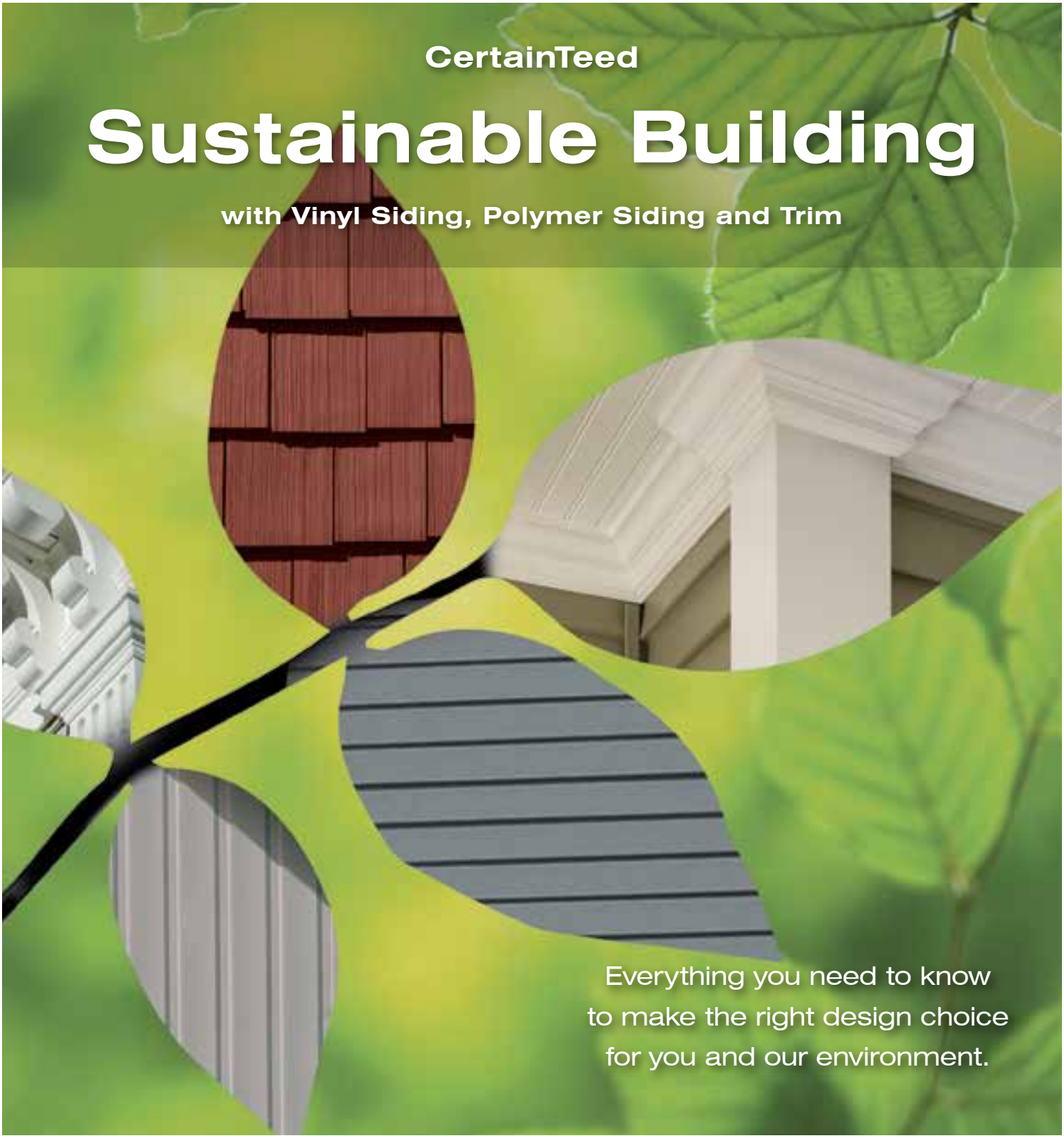
CertainTeed

# Sustainable Building

## with Vinyl Siding, Polymer Siding and Trim



Everything you need to know
to make the right design choice
for you and our environment.

CertainTeed
SAINT-GOBAIN

# Commitment to Sustainable Products

Sustainable design is the practice of reducing or eliminating the negative impact of buildings on the environment and their occupants. It includes how the site is planned, the effective use of water and energy, conservation of materials and resources, and indoor air quality.

As a manufacturer of siding products, CertainTeed is committed to making a sustainable difference. That's why our polymer, insulated and vinyl sidings, as well as our exterior cellular PVC trim are manufactured in a way that is responsible to our environment, economical for building professionals and homeowners and beneficial to our communities.

### Creating Economic Advantage

By reducing waste and energy use in our plants, CertainTeed is able to achieve cost savings that can be applied toward research and development of new sustainable products. This has resulted in the creation of some of the industry's most economical siding and trim options, and the lowest maintenance costs of any other cladding.

### Caring for the Community

The CertainTeed commitment to sustainability extends to the communities where we work and live. We are committed to the well-being of our employees and surrounding communities.

## Protecting the Environment

*CertainTeed is actively pursuing strategies to reduce our environmental impact, while increasing the sustainability of our operations and products. We fulfill this commitment through our manufacturing methods, and through the design of siding products with environmentally friendly performance attributes.*

### Resource Conservation

- Our manufacturing facilities recycle the water that is used in our plants, saving billions of gallons each year.
- CedarBoards D6 contains up to 64% pre- and post-consumer recycled material, and is NGBS Green Approved.
- Our polymer, vinyl and cellular PVC products are recyclable. CertainTeed takes back post-consumer siding from builders and manufactured housing plants, creating a "cradle-to-cradle" system. We coordinate the operations of over 200 vinyl recycling centers nationwide to reclaim vinyl siding.
- The CertainTeed Certavin resin plant is the only PVC manufacturing facility to use the bulk polymerization process. This patented process requires significantly less energy and water than the processes used by other PVC manufacturers.
- Almost 100 percent of the raw material inputs are used in the manufacturing process of our polymer, vinyl and cellular PVC product lines, practically eliminating landfill waste from the manufacture of these products.
- CertainTeed is committed to being a leader in transparency to build trust in our markets and to enable informed decisions by our stakeholders.
- Ensuring accuracy and accountability in our sustainability claims is paramount at CertainTeed- which we obtain through third-party certification. One example is that CedarBoards D6 was the first to embrace the Certified Evnironmnetal Facts™ (CEF) label from GreenCircle Certified, LLC.
- In 2011, CertainTeed Siding Products Group was the first manufacturer to release third-party verified LCAs.
- Our facilities are ISO 14001-certified with the purpose that established environmental procedures and management programs will help us measure and improve our environmental performance.

# Contributions to Regional Materials


Many of CertainTeed's siding products contribute to efforts to conserve resources and reduce environmental impact by buying from local suppliers and by using locally available indigenous materials. The circles on the map to the left display the areas in the US that could earn points within the Regional Material Credit in all LEED and NGBS rating systems.

**vinyl and polymer manufacturing facilities**

## Life Cycle Analysis (LCA)

An LCA identifies the environmental impacts of a product, process or activity over its life span. CertainTeed submitted its products to BEES (Building for Economic and Environmental Sustainability), a program designed by the National Institute of Standards and Techology (NIST), for third party verification and is the first siding manufacturer to conduct LCAs on each of its siding products. The results illustrate that CertainTeed vinyl and polymer siding have a lower environmental impact than the majority of cladding options.

## Energy Conservation

- The manufacturing process used by vinyl and polymer producers is less energy and resource intensive than that used by other cladding choices such as brick and stucco.
- Products such as CertainTeed's CedarBoards™ insulated siding and Triple 3-1/3" InvisiVent® ventilated soffit can help increase a project's energy efficiency. When installed properly, CedarBoards insulated siding can help increase a home's energy efficiency.

ENERGY STAR AWARD 2014
PARTNER OF THE YEAR
Sustained Excellence

- Through continued sustainable initiatives by our parent company Saint-Gobain, CertainTeed continues to earn the Energy Star Partner of the Year Award.

## Emissions Reduction

- The majority of raw materials used to manufacture CertainTeed vinyl and polymer products are shipped by rail, decreasing emissions and the need for over-the-road transportation.
- CedarBoards insulated siding can actually increase the R-value of the building envelope, which reduces energy consumption and related $CO_2$ emissions for the life of the building.

## Cost of Ownership

CertainTeed insulated siding, polymer siding, vinyl siding, and cellular PVC trim eliminate the need for paint and caulk, decreasing maintenance and a project's environmental impact.

## Guaranteed quality and compliance

Many of CertainTeed's siding products contribute to efforts to conserve resources and reduce environmental impact by buying from local suppliers and by using locally available indigenous materials. CertainTeed siding products are shipped from one of our siding manufacturing facilities, ensuring that building professionals are rarely more than 500 miles from a factory location.

CertainTeed's siding facilities are ISO 14001-certified. These facilities maintain environmental management systems that meet standards set by the International Standards Organization (ISO). CertainTeed takes pride in establishing these programs to reduce our environmental impact and improve our environmental performance at our manufacturing facilities.

# Sustainable Products. Freedom of Choice.

CertainTeed offers freedom of choice in the selection of both sustainability benefits and design options. Each of our siding products support sustainability goals, and our complete siding portfolio offers the industry's broadest selection of designs, materials and styles.

## CertainTeed Cedar Impressions® Polypropylene Siding

Cedar Impressions is a blend of a polypropylene (PP) resin, calcium carbonate filler, additives and color concentrate. The color concentrate consists of approximately 50 percent inorganic, mineral-based compounds and 50 percent organic compounds. Cedar Impressions is recyclable. Because it requires no painting or caulking, Cedar Impressions decreases maintenance and environmental impact.

## CertainTeed CedarBoards™ D6 Insulated Siding with Recycled Content

CertainTeed CedarBoards D6 contains the highest recycled content of any vinyl siding product currently on the market. The product contains both post-consumer and pre-consumer recycled content PVC resin, with a PVC recycled content up to 64%. When installed properly, CedarBoards can help increase a home's energy efficiency.


Certified Environmental Facts™

## CertainTeed Vinyl Siding Collection

Compared to brick, stucco and other cladding materials, CertainTeed vinyl siding offers significantly better overall environmental and economic performance. Contributing factors include the recycled content of raw materials, manufacturing methods, durability, low-maintenance characteristics and recyclability. Through CertainTeed's take-back program, old vinyl siding can be recycled for use in making new vinyl siding.

## Restoration Millwork® Trim

CertainTeed high performance cellular PVC trim is certified by GreenCircle to contain 19% pre-consumer recycled content. This gives building professionals and homeowners confidence that the homes they design, build, maintain, and occupy are made with sustainable materials that enhance every project's performance and beauty.

# LEED Certification

## The "Green" Home Standard

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System is a nationally recognized standard that promotes the design and construction of high-performance "green" buildings. CertainTeed siding products can contribute to earning points in the New Construction, Core and Shell, Retail, Healthcare, Schools and LEED for Homes rating systems.

A green single/multi-family home uses less energy, water and natural resources. It creates less waste, and is healthier and more comfortable for the occupants. A LEED Certified home will have lower energy and water bills, reduced greenhouse gas emissions and less exposure to mold, mildew and other indoor toxins.

In order to be LEED certified a home must earn various credits in various LEED categories. Points are earned by using various building products and building methods that will contribute to the requirements in each credit to achieve certification.

CertainTeed siding and trim products contribute to the attainment of LEED Certification through: Environmentally Preferable Product Characteristics, Life Cycle Assessment Data, Recycled Content, Energy Efficiency, Durability, and Regional Material.

### LEED v3 (2009)

| Building Design and Construction (BD+C) – NC, Core and Shell, Schools, Retail, Healthcare | | | CedarBoards | Vinyl Siding | Cedar Impressions | Restoration Millwork |
|---|---|---|---|---|---|---|
| EAp2 | Minimum Energy Performance | Req | x | | | |
| EAc1 | Optimize Energy Performance | 1-19 (NC, Schools, Retail); 3-21 (CS); 1-24 (HC) | x | | | |
| MRc3 | Sustainably Sourced Materials and Products | 1 (Healthcare only) | D6 only | | | x |
| MRc4 | Recycled Content | 1 (excluding Healthcare) | D6 only | | | x |
| IEQc7.1 | Thermal Comfort – Design | 1 | x | | | |
| MRpc52 | Material Multi-Attribute Assessment | 1 | x | x | x | x |
| MRpc63 | Whole Building Life Cycle Assessment | 1 | x | x | x | x |

### LEED v4

| Building Design and Construction (BD+C) – NC, Core and Shell, Schools, Retail, Healthcare | | | CedarBoards | Vinyl Siding | Cedar Impressions | Restoration Millwork |
|---|---|---|---|---|---|---|
| EAp1 | Minimum Energy Performance | Req | x | | | |
| EAc2 | Optimize Energy Performance | 1-18 (NC, CS, Retail), 1-16 (Schools), 1-20 (Healthcare) | x | | | |
| MRc1 Option 4 | Building Life Cycle Impact Reduction | 3 | x | x | x | x |
| MRc2 Option 1 | Building Product Disclosure and Optimization – Environmental Product Declaration | 2 | x | x | x | x |
| MRc3 Option 2 | Building Product Disclosure and Optimization – Sourcing of Raw Materials | 1-2 | D6 only | | | x |
| MRc5 | Construction and Demolition Waste Management | 1-2 | | x | | |
| EQc5 | Thermal Comfort | 1 (except CS) | x | | | |

### LEED for Homes: v3 (2008)

| | | | CedarBoards | Vinyl Siding | Cedar Impressions | Restoration Millwork |
|---|---|---|---|---|---|---|
| EAp1 | Minimum Energy Performance | Req | x | | | |
| EAc1 | Optimize Energy Performance | 1-34 | x | | | |
| EAc2 | Insulation | 1-2 | x | | | |
| MRc2.2 | Environmentally Preferrable Products – Materials | 0.5 | D6 only | | | |
| MRc3 | Waste Management | 1-3 | | x | | |

### LEED for Homes: v3 (2008)

| | | | CedarBoards | Vinyl Siding | Cedar Impressions | Restoration Millwork |
|---|---|---|---|---|---|---|
| EAp1 | Minimum Energy Performance | Req | x | | | |
| EAc1 | Annual Energy Use | 1-34 | x | | | |
| EAc8 | Envelope Insulation | n/a | x | | | |
| MRc2.2 | Environmentally Preferrable Products – Materials | 0.5 | D6 only | | | |
| MRc3 | Construction Waste Management | 1-3 | | x | | |

Home Innovation
NGBS GREEN PARTNER™

The life cycle assessment of CertainTeed siding products can contribute to earning points for green building certification in both the USGBC and NGBS green building programs.

In the NGBS National Green Building Standard, points can be earned for using LCA data to select more environmentally preferable products.

# The National Green Building Standard (NGBS)

## The Standard for Environmentally Responsible Building Methods

The NGBS Home Innovation Research Laboratory incorporates environmental considerations into every phase of the building process. The standard covers all phases of a home's design, construction and operation including energy and water efficiency, lot development, resource-efficient building design and materials, indoor environmental air quality, homeowner maintenance and the home's overall impact on the environment.

Builders who follow the National Green Building Standard can earn points in a way similar to the LEED rating systems.

CertainTeed products can help builders earn Green Building points in four categories:

- Resource Efficiency
- Energy Efficiency
- Locally Available Indigenous Materials
- Life Cycle Assessment (LCA)

### Cedar Impressions® Polypropylene Siding

| NGBS Criteria | Requirement | Points |
|---|---|---|
| Resource Efficiency | | |
| 601.7 | No Site Applied Finishing Materials | 2-5 |
| 602.1.6 | Termite-Resistant Materials | 2-6 |
| 610.1.2.1 | Use LCA to determine most environmentally preferable material | 2 |
| 611.1 | Products manufacturer's operations are ISO 14001 certified | 1-3 |

### CedarBoards™ D6 Insulated Siding with Recycled Content

| NGBS Criteria | Requirement | Points |
|---|---|---|
| Resource Efficiency | | |
| 601.7 | No Site Applied Finishing Materials | 1-5 |
| 602.1.6 | Termite-Resistant Materials | 2-6 |
| 604.1(2) | Recycled Content Materials | 2-4 |
| 610.1.2.1 | Use LCA to determine most environmentally preferable material | 2 |
| 611.1 | Products manufacturer's operations are ISO 14001 certified | 1-3 |
| Energy Efficiency | | |
| 702.2 | Energy/Cost Performance | 30-100 |
| 703.1 | Building Envelope | 0-40 |

### CertainTeed Vinyl Siding Collection

| NGBS Criteria | Requirement | Points |
|---|---|---|
| Resource Efficiency | | |
| 601.7 | No Site Applied Finishing Materials | 1-5 |
| 602.1.6 | Termite-Resistant Materials | 2-6 |
| 605.3 | Construction Materials Recycled Offsite | 3 |
| 610.1.2.1 | Use LCA to determine most environmentally preferable material | 2 |
| 611.1 | Products manufacturer's operations are ISO 14001 certified | 1-3 |

### Restoration Millwork® Trim

| NGBS Criteria | Requirement | Points |
|---|---|---|
| Resource Efficiency | | |
| 601.7 | No Site Applied Finishing Materials | 1-5 |
| 602.1.6 | Termite-Resistant Materials | 2-6 |

NIST
**National Institute of Standards and Technology**
U.S. Department of Commerce

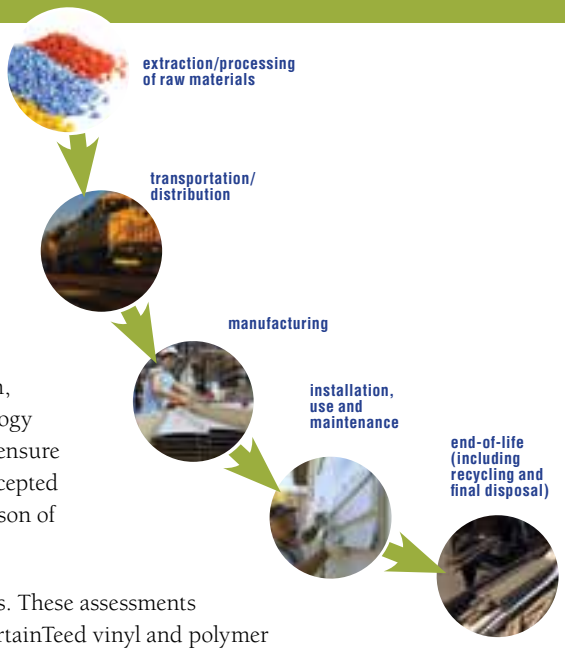
The life cycle assessment of CertainTeed siding products can contribute to earning points for green building certification in both the USGBC and NGBS green building programs.

In the National Green Building Standard, points can be earned for using LCA data to select more environmentally preferable products. LEED Pilot Credit 61 provides an opportunity to earn points in the innovation and design category of LEED rating systems for selecting products with published and third-party verified LCA's.

# Life Cycle Assessment

## Identifying Environmental Impact

Life Cycle Assessment (LCA) is the method for identifying the environmental impacts of a product, process or activity over its environmental life span, as well as the environmental cost/benefits of the product.

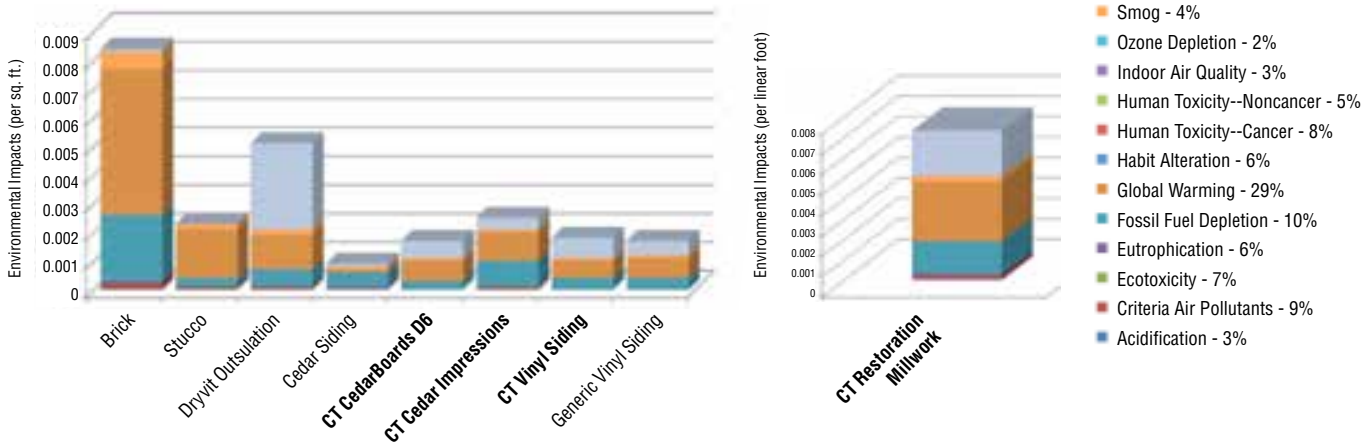



LCA data is submitted by manufacturers to the Building for Environmental and Economic Sustainability (BEES) program, managed by the National Institute of Standards and Technology (NIST). BEES fully reviews and investigates each product to ensure that the data is developed in keeping with internationally accepted standards. LCA data is then published allowing the comparison of building products on a life cycle basis.

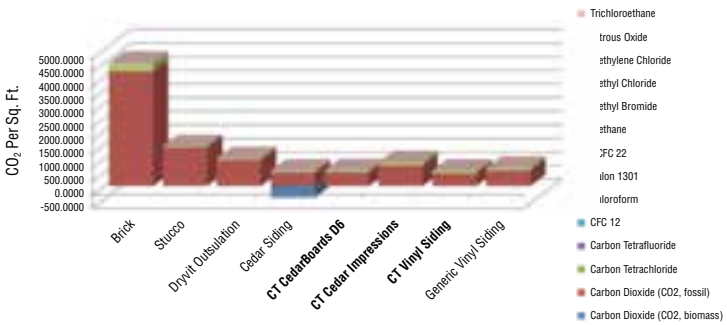
CertainTeed has conducted LCAs on all of its siding products. These assessments have shown that in comparison to other siding products, CertainTeed vinyl and polymer siding products have very low impact across all life cycle stages.

For more LCA information go to **www.certainteed.com/LCA**.

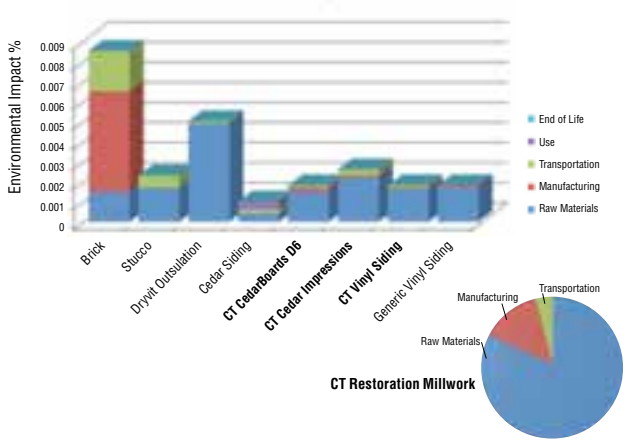
## Overall Environmental Impact




## Global Warming Potential




## Overall Environmental Performance by Life Cycle Stage



**CertainTeed products are designed to work together and complement each other in color and style to give your home a beautiful finished look.**


Polymer Shakes & Shingles


Roofing and Ventilation


Fence


Insulated Siding


PVC Exterior Trim & Beadboard


Decking and Railing


Vinyl Siding


Vinyl Carpentry® Trim


Housewrap

**Professional:** facebook.com/CertainTeedFreedomofChoice
**Consumer:** facebook.com/CertainTeedLivingSpaces

[ BeCertain ]™ Confidence worth building on.™

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