

CHAPTER 10

Exterior Finishes

Protecting the home from the elements—whether it's extreme cold, heat, or moisture—is a vital part of visual appeal, environmental considerations, and energy savings.

**Vinyl Siding**

Vinyl was once thought to be the best choice, but now there are differing opinions. Vinyl siding is a low-maintenance material, and some manufacturers may add a small amount of post-industrial scrap. However, vinyl siding is also made from polyvinyl chloride (PVC). Many environmental groups disapprove of the use of PVC because of the danger of its by-product — dioxin — which is created during the manufacture, use, and combustion of PVC. Dioxins include some of the most toxic chemicals known to science. (For more information about PVC, see the resources section.) Fiber cement and metal are better options for the environment and human health.

Solid-sawn Wood

Using solid-sawn wood with natural weather resistance (like cedar or redwood) puts some strain on harvested forests (true green building wouldn't use any cedar or redwood, unless it was reclaimed—most certification programs require no use). One way to compromise is to use these natural materials only on the front of the home, and side the rest with a man-made product that closely resembles the natural material, such as one that contains wood fibers, or virgin or recycled materials.

Plastic

There are currently over 20 products in the market consisting of plastic or plastic-wood composites. Plastic lumber is made from 100 percent recycled plastic, #2 HDPE and polyethylene plastic milk jugs and soap bottles. Plastic-wood composites are a combination of plastic and wood fibers or sawdust. These materials are a long-lasting exterior weather-, insect-, and chemical-resistant wood lumber replacement for nonstructural applications.

Alternatives

Alternative sidings include stucco, cement board, metal siding, recycled wood, polystyrene-concrete mixes, and other eco-friendly alternatives.

Implementation of Green Exterior Finishes

- Use untreated wood or wood that has been safely treated and does not contain chromium or arsenic for decking and sill plates. Consider using alkaline copper quat (ACQ) treated lumber when necessary. Do NOT use pressure-treated lumber (wood that has been soaked in chromated copper arsenate (CCA), and pressured to drive the chemicals into the wood fibers).
- Use earth-based plaster.
- Use alternative siding materials such as:
 - Mineral or cement fiberboard (also referred to as fiber cement and cement board).
 - A recycled material or an environmentally friendly, engineered product.
 - Wood products such as sidewall shingles, or OSB siding. (Remember to utilize certified wood, low-VOC coatings, and non-exotic species. Avoid virgin, old-growth tree products.)
 - Hardboard like masonite or ABTco Stucco.
 - Fiber/cement composites like MaxiPlank® or James Hardie® products.
 - Polymer products like Nailite©, vinyl products like Wolverine®.
- Use locally produced block or brick.
- Use cement-based, integral colored stucco system.
- Design “moisture-forgiving” walls and roof details that repel rain and can dry out.
- Finish with light-color exterior finishes and high-reflecting roof covering. [See also: the “Roofing” section of Shades of Green. “Cool Roof” systems are a new addition, and successfully reflect unwanted heat from the home interior.]

Benefits of Green Exterior Finishes



- Using recycled content materials is more durable and reduces demand for old-growth timbers.
- Using safely treated wood reduces exposure to chromium and arsenic.
- Cement-fiber will not burn, cup, swell, or shrink.
- Alternative siding will last longer, can be fire resistant, and can reduce maintenance costs.
- Choosing not to use vinyl siding means fewer toxins eventually being released into the environment, where they make their way into our bodies, causing health risks.
- Cedar shingles require less maintenance than wood clapboard.

Challenges of Green Exterior Finishes

- Cultured stone and brick can be extremely expensive, and other alternative materials can be more expensive than vinyl.
- Synthetic stucco will look authentic, but may not offer the same durability.
- Wood products have the least impact on human health but if not grown and processed sustainably can contribute to deforestation.



Link and Learn

Sustainable Building Sourcebook, Chapter 4 Materials; Austin Energy GreenBuilding Program:
<http://www.austinenergy.com/EnergyEfficiency/Programs/GreenBuilding/Sourcebook/engineeredSidingAndTrim.htm>

U.S. Green Building Council PVC Task Group's Assessment of Technical Basis for a PVC Related Materials Credit in LEED:

http://www.usgbc.org/Docs/LEED_tsac/USGBC_TSAC_PVC_Draft_Report_12-17-04..pdf

EPA's Persistent Bioaccumulative and Toxic (PBT) Chemical Program:

<http://www.epa.gov/pbt/pubs/dioxins.htm>

Center for Health, Environment and Justice's PVC-Free Schools Campaign Fact-Sheets:

<http://www.besafenet.com/pvc/about.htm>

EJNet.org's Dioxin Homepage:

<http://www.ejnet.org/dioxin/>

Persistent Organic Pollutants (POPs) Campaign. Indigenous Environmental Network:

<http://www.ienearth.org/pops.html>

Marin County Community Development Agency:

http://www.co.marin.ca.us/depts/CD/Forms/Remodeling_Green_Building_Residential_Design_Guidelines_Certification_Form.pdf

Build Smarter with Alternative Materials:

<http://www.build-smarter.com>

Johnston, David and Kim Master, LEED AP. *Green Remodeling, Changing the World One Room at a Time*. New Society Publishers