

## “Green” Carpet

Carpet is the most common floor covering in homes today due to low cost, comfort, and availability of multiple colors and patterns. Carpet is made from woven materials, often petroleum-based fibers like nylon or olefin, attached to a synthetic backing with an adhesive. Carpet is laid by stretching and attaching to wooden tack strips nailed around the perimeter or by gluing it to the subfloor. Carpet comes in many weave densities and pile or thickness dimensions.



“Green” carpet includes natural fibers such as wool, jute, sisal, sea grass, coir or recycled PET (polyester) plastic. For reasons outlined below, exploring **alternatives to carpeting** is highly recommended.

### PRODUCT COMPARISONS

#### “Greener” Carpet

- Natural fibers
- Low VOCs
- Natural stain resistance
- Natural jute backing
- Lower offgassing of toxic chemicals
- Made with recycled content

#### Conventional Carpet

- Synthetic fibers
- High VOCs
- Spray-on stain resistant chemicals
- Synthetic rubber backing
- Potential high offgassing of toxic chemicals
- No recycled content

### LEED CREDITS

Using this material potentially contributes to obtaining these credits in the US Green Building Council’s LEED certification program:

#### Materials & Resources

MR Credit 2 Construction Waste Management (for recyclable products that can be diverted from the construction waste stream)

MR Credit 3 Resource Reuse (for refurbished materials, such as carpet tiles)

MR Credit 4.1 Recycled Content (for recycled content carpet)



MR Credit 4.2 Recycled Content (for recycled content carpet)

### **Indoor Environmental Quality**

EQ Credit 4.3 Low-Emitting Materials: Carpet (for carpets meeting CRI Green Label standards)

LEED stands for Leadership in Energy and Environmental Design. To find out more about it, visit [www.leedbuilding.org](http://www.leedbuilding.org).

## **ENVIRONMENTAL ATTRIBUTES**

### **Energy Performance**

Carpet and padding only have an energy benefit if they are laid over an uninsulated crawlspace or slab. They provide some resistance to heat flow and therefore increase comfort.

### **Resource Impacts**

Conventional carpet is made from a variety of chemicals derived from petroleum, a non-renewable resource, and poses significant environmental hazards due to air and water pollution from the manufacturing process. Carpet also poses a significant environmental burden because it has a fairly short lifespan, is not typically recycled, and is readily dumped into a landfill, where carpet takes up significant space compared to other wastes.

Some greener carpet is made from **100% recycled pop bottles** (PET plastic, or polyester). Up to 40 pop bottles per yard can be recycled into carpet, though the recycled PET fibers themselves are currently difficult to recycle. Besides having recycled content, these carpets also have the benefit of looking exactly like conventional carpet, yet are more stain resistant due to the nature of the polyester plastic compared to the typical nylon plastic. Polyester is not as resilient as nylon, so it may not be appropriate for high-traffic areas. Other types of green carpets are those made from **natural fibers** such as wool, jute, sisal, coir, and seagrass, all of which are renewable and abundant sources.

**Carpet backing** can contribute up to 60% of the carpet material, so purchasing a nylon face fiber with 100% recycled content backing is another green choice. Many manufacturers are developing closed-loop systems, where used carpet fiber and backing is made into new carpet and backing.

Commercial projects can make use of **modular carpet tiles**, which have a couple of advantages over recycled carpet. Worn or damaged areas, generally composing only a small percentage of the carpeting area, can be removed without having to replace the entire carpet, saving considerable resources and reducing the associated environmental costs of manufacturing new carpet. More than 80% of these tiles are still fully intact even though the face fiber may be compressed and in need of a deep cleaning. After some refurbishing by the carpet provider, the tiles can be returned to service again, eliminating the need to manufacture new ones. Some manufacturers also offer carpet leasing options, which will care for the carpet during its use and then recycle it at the end of the lease period.

Residential projects also have the option of installing modular carpet tiles. Individual tiles can be picked up and rinsed off in the sink, replaced as required, or removed and installed at a new residence.

Conventional **carpet pads** are made of foam and synthetic rubber, made from non-renewable petroleum sources. Green carpet pads can be made from new, recycled, or natural renewable fibers such as cotton, felt, or jute.



## Health Considerations

In recent years, carpet has become less popular due to its chemical offgassing potential and maintenance and cleaning difficulties, as well as the issue of mold, dust, bacteria and other allergy-causing organisms flourishing in the ideal habitat of carpet fibers. Also, carpet is subject to the “sink effect”, absorbing substances tracked in from shoes that have been exposed to the numerous chemicals in daily life such as road oil, anti-freeze, dirt, pesticides, and herbicides. These are then distributed into the carpet fibers, where they can remain for many years.

Offgassing from new carpeting can persist at significantly high levels for up to three years after installation. Chemical by-product emissions from carpet fibers, backing material, and adhesives, including 4-phenylcyclohexene (4-PC), constitute the main ingredients in that familiar “new carpet smell”. With as many as 120 chemicals in a typical sample of carpet, there’s cause for careful selection of new carpet. Toxic chemicals can be found in the fiber bonding material, dyes, backing glues, fire retardants, latex binder, fungicides, and anti-static and stain resistant treatments. A list of these includes: formaldehyde, toluene, xylene, and benzene. In general, the most active stage of outgassing is 1 to 3 months.

If you are concerned about indoor air quality, consider the following ideas:

- Explore the idea of reducing the amount of carpeting that you have in your home. Replacement options include concrete, wood, bamboo, tile, cork, and natural linoleum. Using throw rugs or area rugs on hard floor surfaces allows you to gain the aesthetic benefits of carpet without the air quality impacts.
- Look for carpets made from natural fibers (wool, jute, sisal, coir, and seagrass), and for those that have not been subjected to chemical treatments such as permanent stain resistance, mothproofing, and anti-microbial agents (fungicides and mildewcides). A 100% nylon rug that has not been treated with chemicals is generally healthier than natural fiber carpets that have been treated with mothproofing and pesticides.
- Look for carpets with the Carpet and Rug Institute (CRI) Green Label. These carpets meet a standard for low VOC emissions under the CRI’s Indoor Air Quality Testing Program. To learn more, visit [www.carpet-rug.com](http://www.carpet-rug.com) and link to “Indoor Air Quality”.
- Carpet with a woven or jute backing is preferable to rubberized backing. Avoid carpeting or padding containing styrene-butadiene rubber, the adhesive used to bond carpet fiber to the backing, because of its chemical offgassing issues.
- Felt or jute padding is preferable to foamed plastic or synthetic rubber padding.
- Air out the carpet for as long as possible before installation.
- Vacuum carpets often. For new construction, install a central vacuum cleaner with outlets in the carpeted rooms to limit the dust exhaust in the home, or purchase a vacuum cleaner with a HEPA filter.
- Use a walk-off mat in entry areas to reduce spreading pollutants tracked in from outside.



## **FUNCTIONAL CONSIDERATIONS**

### **Cost**

Green carpet is comparable in price to standard carpeting. Price range depends on the type of carpet fiber, weave, height of pile, and fiber count.

### **Installation**

There are two basic ways to install wall-to-wall carpeting: tack down or glue down. Mechanical adherence methods are preferable to glue, since they generally do not destroy as much of the floor surface, allow easier carpet removal, and may allow the carpet to be recycled or reused after its useful life in that location. Additionally, the offgassing of glue can have an adverse impact on air quality in the home. Mechanical fasteners can be nailed, screwed, or glued down around the perimeter of the room. It is important that the fasteners, if glued, are attached with a low- or no-VOC adhesive.

### **Maintenance**

Carefully select cleaning agents; typical products include chemical perfumes, anti-bacterial agents, and other sources of high VOCs. Shoes should not be worn on carpet as oil, grime, and pollutants picked up outdoors will be deposited in your house unless they are removed at the door.

## **RESOURCES**

Greener carpeting is widely available. For up-to-date product and retailer information, visit the manufacturers' websites or search the Green Materials Database, [www.builditgreen.org/guide](http://www.builditgreen.org/guide).

### **Manufacturers**

#### **Bentley Prince Street**

(Division of Interface, Inc.)  
14641 E. Don Julian Rd.  
City of Industry, CA  
(800) 423-4709  
[www.bentleyprincestreet.com](http://www.bentleyprincestreet.com)

#### **Interface Flooring Systems**

(Modular carpet tiles, recycled content)  
La Grange, GA  
(800) 336-0225  
[www.interfaceinc.com](http://www.interfaceinc.com) (commercial)  
[www.interfaceflor.com](http://www.interfaceflor.com) (residential)

#### **Bloomsburg Carpet Industries, Inc.**

(Natural fibers)  
New York, NY  
(212) 688-7447

#### **Collins & Aikman Floorcoverings**

#### **Fibreworks Corporation**

(Natural fibers)  
(800) 843-0063  
[www.fibreworks.com](http://www.fibreworks.com)

#### **Mohawk Carpet**

(Image Carpet, recycled content)  
(800) 266-4295  
[www.mohawkcarpet.com](http://www.mohawkcarpet.com)

#### **Shaw Industries, Inc.**

(Renew Carpeting, recycled content)  
(800) 342-7429  
[www.shawcontract.com](http://www.shawcontract.com)

#### **Shaw Contract Group**

(Carpet tiles, recycled content)  
Dalton, GA  
(800) 441-7429  
[www.shawcontract.com](http://www.shawcontract.com)

#### **Milliken Carpet**

(Carpet tiles, recycled content)



(Modular carpet tiles)  
Dalton, GA  
(800) 248-2878  
[www.cafloorcovering.com](http://www.cafloorcovering.com)

La Grange, GA  
(877) 327-3639  
[www.milliken.com](http://www.milliken.com)

#### **Retailers: Natural Fiber Carpets**

**Abbey Carpet Center/ Conklin Bros Floor Covering**  
505 B St  
Santa Rosa, CA 95401  
(707) 542-4981

**Anderson Carpet**  
4101 Broadway  
Oakland, CA 94611  
(510) 652-1032

**The Berkeley Design Center**  
3195 Adeline Street  
Berkeley, CA  
(510) 625-6064  
[www.berkeleydesigncenter.com](http://www.berkeleydesigncenter.com)

**EXPO Design Center**  
1461 Concord Ave  
Concord, CA 94520  
(925) 288-4400  
[www.expo.com](http://www.expo.com)

**EXPO Design Center**  
7050 Amador Plaza Rd.  
Dublin, CA 94568  
(925) 479-3100  
[www.expo.com](http://www.expo.com)

**EXPO Design Center**  
1771 E Bayshore Rd  
East Palo Alto, CA 94303  
(650) 289-6300  
[www.expo.com](http://www.expo.com)

**EXPO Design Center**  
1555 40th Street  
Emeryville, CA 94608  
(510) 450-3300  
[www.expo.com](http://www.expo.com)

**EXPO Design Center**  
5095 Almaden Expressway  
San Jose, CA 95118  
(408) 979-3500  
[www.expo.com](http://www.expo.com)

**Haigh & Haigh Ltd.**  
38 Hotaling Place, 3rd Floor  
San Francisco, CA 94111  
(415) 576-0600

**J.M. Interior Design**  
San Ramon, CA  
(925) 932-7726  
[www.jminteriordesigns.com](http://www.jminteriordesigns.com)

**Naturlich Natural Home Products**  
Sebastopol, CA  
(707) 824-0914  
[www.naturalhomeproducts.com](http://www.naturalhomeproducts.com)

**Sunrise Home**  
831 B Street  
San Rafael, CA 94901  
(415) 456-3939  
[www.sunrisehome.com](http://www.sunrisehome.com)

#### **Retailers: Recycled Content Carpet**

**Abbey Carpet Center/ Conklin Bros Floor Covering**  
505 B St  
Santa Rosa, CA 95401  
(707) 542-4981

**Floor Dimensions**  
3571 San Pablo Dam Road  
El Sobrante, CA 94803  
(510) 223-3300  
[www.floordimensions.com](http://www.floordimensions.com)



**Anderson Carpet**

4101 Broadway  
Oakland, CA  
(510) 652-1032

**Bentley Prince Street**

(Division of Interface, Inc.)  
564 Pacific Ave.  
San Francisco, CA 94133  
(415) 421-2260  
[www.bentleyprincestreet.com](http://www.bentleyprincestreet.com)

**Brandon Carpet Co.**

20338 Meekland Avenue  
Hayward, CA  
(510) 538-0992

**Carpet Center**

6500 Hembree Ln Suite 240  
Windsor, CA 95492  
(707) 836-7007  
[www.carpetcenterca.com](http://www.carpetcenterca.com)

**Carpet One of San Ramon**

1985 San Ramon Valley Blvd.  
San Ramon, CA 94583  
(925) 837-3716

**Conklin Brothers**

2999 Teagarden  
San Leandro, CA  
(510) 357-1090

**Design Within Reach**

1770 4th Street  
Berkeley  
(510) 524-1994  
[www.dwr.com/berkeley.cfm](http://www.dwr.com/berkeley.cfm)

**Dick's Wholesale Carpet**

36 Hegenberger  
Oakland, CA 94621  
(510) 636-4290

**EXPO Design Center**

1461 Concord Ave  
Concord, CA 94520  
(925) 288-4400  
[www.expo.com](http://www.expo.com)

**EXPO Design Center**

7050 Amador Plaza Rd.  
Dublin, CA 94568

**Floor Dimensions**

1701 Broadway  
Vallejo, CA 94589  
(707) 552-5252  
[www.floordimensions.com](http://www.floordimensions.com)

**Home Depot**

Bay Area- Wide  
(800) 553-3199  
[www.homedepot.com](http://www.homedepot.com)

**Majestic Floors, Inc.**

5111 Port Chicago Highway  
Concord, CA 94510  
(925) 825-0771

**McCurley's - Shaw Floor Covering**

3191-M Crow Canyon Place  
San Ramon, CA 94583  
(925) 866-2200  
[www.shawfloor.com](http://www.shawfloor.com)

**Mohawk Rep**

Shawn Carlson  
(415) 245-0324

**Prosource**

1340 Galaxy Way Suite L  
Concord, CA 94520  
(925) 609-9448  
[www.pswholesale.com](http://www.pswholesale.com)  
*Note: Contractor membership required*

**Prosource**

3051 Teagarden  
San Leandro, CA 94577  
(510) 614-9435  
[www.pswholesale.com](http://www.pswholesale.com)  
*Note: Contractor membership required*

**Prosource**

320 Swift Avenue  
S. San Francisco, CA 94080  
(650) 871-9600  
[www.pswholesale.com](http://www.pswholesale.com)  
*Note: Contractor membership required*

**Prosource**

1701 Junction Court  
San Jose, CA 95112  
(408) 987-0500  
[www.pswholesale.com](http://www.pswholesale.com)



(925) 479-3100  
[www.expo.com](http://www.expo.com)

**EXPO Design Center**  
1771 E Bayshore Rd  
East Palo Alto, CA 94303  
(650) 289-6300  
[www.expo.com](http://www.expo.com)

**EXPO Design Center**  
1555 40th Street  
Emeryville, CA 94608  
(510) 450-3300  
[www.expo.com](http://www.expo.com)

**EXPO Design Center**  
5095 Almaden Expressway  
San Jose, CA 95118  
(408) 979-3500  
[www.expo.com](http://www.expo.com)

**Floor Dimensions**  
1081 Eastshore Hwy  
Albany, CA 94706  
(800) 378-4300  
[www.floordimensions.com](http://www.floordimensions.com)

*Note: Contractor membership required*

**Prosource**  
3410 Industrial Drive  
Santa Rosa, CA 95403  
(707) 573-9117  
[www.pswholesale.com](http://www.pswholesale.com)  
*Note: Contractor membership required*

**Shaw Carpet and Flooring Center/ Concord Discount Floors**  
2395-J Monument Blvd.  
Concord, CA 94520  
(925) 680-7538  
[www.shawfloor.com](http://www.shawfloor.com)

**Sun Valley Carpets, Hardwood & Vinyl Flooring**  
1440 Concord Ave Ste D  
Concord, CA 94520  
(925) 827-8788

### **Manufacturers/ Retailers: Carpet padding/ underlayment**

**AppleSeed Wool Corp**  
(Under Fleece)  
(800) 881-9665  
[www.appleseedwool.com](http://www.appleseedwool.com)

**DuPont Commercial Flooring**  
(EcoSoft Carpet Cushion)  
(800) 438-7668  
[www.flooring.dupont.com](http://www.flooring.dupont.com)

**Earth Weave Carpet Mills**  
(Wool)  
Dalton, GA  
(706) 278-8200  
[www.earthweave.com](http://www.earthweave.com)

**Homasote Company**  
(Homasote 440 Carpetboard)  
(800) 257-9491  
[www.homasote.com/home.html](http://www.homasote.com/home.html)

**Leggett & Platt, Inc**  
(Hartex Carpet Cushion)  
(877) 579-4737  
(PL and Dubl Bac Series)  
(800) 621-6907

**Naturlich Natural Home Products**  
Sebastopol, CA  
(707) 824-0914  
[www.naturalhomeproducts.com](http://www.naturalhomeproducts.com)

**Reliance Carpet Cushion**  
(Diamond Bond and Synthetic Fiber)  
15902 S. Main Street  
Gardena, CA  
(800) 522-5252

**Rug-Hold**  
(800) 451-4653  
[www.rughold.com](http://www.rughold.com)

**Shaw Contract Group**  
(Endurance II)



(800) 441-7429  
[www.shawcontract.com](http://www.shawcontract.com)

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