

## **Home Furnishings**

**FLOORING** - There is a dazzling array of flooring products available. General guidelines to reduce their contribution to poor IAQ should be followed. When using adhesives, sealants or finishes, choose “no VOC” products.

*Carpet* can contribute to poor IAQ by trapping pollutants and moisture, providing a substrate for biological contamination, and by releasing VOCs (from carpet and adhesives) and fire-retardant chemicals. Minimal use of carpet is suggested. If used, consider

- using carpet tiles which do not require adhesives
- purchasing products (carpets, pads, adhesives) meeting the Carpet and Rug Institute’s “Green Label” or “Green Label Plus” criteria
- installing non-adhesive, commercial-grade carpets
- using third party-certified “no VOC” adhesives

**Wood** (laminated or solid) flooring can be an excellent alternative to carpet. Minimal requirements for adhesives makes wood flooring attractive for IAQ. Some laminated flooring contains high concentrations of formaldehyde and other VOCs and should be avoided. Use water-based polyurethane finishes.

**Vinyl** (“linoleum”) and *true linoleum* flooring products can be used, but they contain VOCs that will contribute adversely to IAQ. When used, select a “no VOC” adhesive.

**FURNISHINGS** - Many home furnishings contain a variety of components (wood products, foams, fabrics, plastics, adhesives, finishes, etc.) which can affect IAQ. Some general guidelines to minimize indoor air pollution include:

- Simple designs with few materials, and assembled with mechanical fasteners
- Frameless cabinetry constructed of solid wood

- Low VOC doors and other furnishings
- Limit use of fire retardants in home furnishings by:
  - choosing fire-resistant materials (e.g. leather, metal)
  - living a fire-safe lifestyle
  - looking for non-halogenated/non-brominated fire retardants

**Fragrances, air fresheners, candles, and accessories** - Many scented household items contain chemicals that can be irritating, allergenic, and/or carcinogenic. Some components of air fresheners and cleaners react with other household air components (e.g. ozone) and become more dangerous. Candles contribute carbon monoxide and other combustion gases to the air, as well as soot, and their wicks (especially in imported candles) may contain lead. In general, limit use of air fresheners, concentrated cleaners, candles, etc.

## **Outside the home**

**TRACK-OFF SYSTEMS** - Install a track-off system at home entrances to remove sources of contamination from footwear

**PESTICIDES/HERBICIDES** - Minimize use of pesticides and herbicides on your property, especially in areas with children and pet traffic.



### **Need More Help?**

There are a number of independent organizations that provide consumers information about household products, and/or certify products that meet stringent standards for indoor air quality.

A few are:

Greenguard: [www.greenguard.org](http://www.greenguard.org)  
GreenSpec: [www.buildingGreen.com](http://www.buildingGreen.com)  
GreenSeal: [www.greenseal.org](http://www.greenseal.org)  
American National Standards Institute (ANSI): [www.ansi.org](http://www.ansi.org)

# I. Materials and Furnishings

We all want a safe place to call home. Often, we take for granted that the air in our homes is safe, but it may not be. The topic of indoor air quality (IAQ) can be a very complex one. These factsheets provide guidance to improve IAQ. In Part I, we provide tips on selecting materials and furnishings for your home. Consult your local hardware store or shop online to find IAQ-friendly products. In Part II, we detail management of combustion pollutants, moisture, ventilation, and other issues relevant to Alaska homeowners.

## No/Low VOC Products

**BUILDING MATERIALS** - When options are limited, select products with the lowest VOC content.

**Caulks, sealants, and adhesives** - These products pose the biggest threat to IAQ during application and for a short time (a few days) following application. For most uses, relatively safe, low/no VOC products are available. Manufacturers must list the concentration of VOCs on the container.

- Choose acrylic, silicone, and polyurethane when possible
- Look for “no VOC” products or those containing less than 50 g/liter VOC

**Paints, stains, floor finishes** - These products can affect IAQ during and immediately after application, and perhaps even more importantly, during storage. Completely eliminating VOC exposure is difficult, but VOC emissions can be minimized.

- Avoid use of petrochemical solvents (benzene, toluene, xylene, etc.)
- Cover fabrics/carpets when painting to minimize VOC exposure and re-emission of absorbed VOCs
- Look for paints with GreenSeal (GS-11) certification
- Use direct ventilation (fan with windows/doors open) when applying products
- Use water-based polyurethane finishes for wood floors
- Purchase appropriate quantities and store outside the home

**Wood products** - Today, many wood products are made from wood chips or dust that are typically glued together with a formaldehyde-based resin. Some of these resins release formaldehyde into indoor air. Common sources of formaldehyde include: oriented strand board (OSB), fiber board, molding, plywood

- Avoid engineered wood products (OSB, particle board) indoors when possible
- Safely seal engineered wood products with laminates, wood veneers, or sealants.
- Look for products made with phenol formaldehyde (PF) instead of urea formaldehyde (UF) resin - PF releases less formaldehyde than does UF, especially in humid conditions.

## What are VOCs?

Volatile organic compounds are carbon-containing chemicals that can evaporate at normal temperatures. VOCs are released from burning fuel, such as gasoline, wood, coal, or natural gas. They are also released from solvents, paints, glues, and other products that are used and stored at home and at work.

Some VOCs are particularly toxic and can affect our health, even at very low concentrations. VOCs may combine with other substances in the environment to form fine particulate matter, posing a serious health threat to humans.

Certain VOCs can harm human health if inhaled, ingested or absorbed through the skin. Common short-term health effects of VOC exposure include eye and lung irritation, headaches and nausea. Some compounds can cause longer term effects, such as damage to the liver, kidneys and nervous system. Other VOCs, such as benzene, can cause cancer in humans and animals. There are also many VOCs that are relatively harmless at concentrations typically found in the environment. With all VOCs, concentration and exposure time are always important, and excesses can affect health!

**IMPORTANT:** Persons with respiratory problems such as asthma, young children, elderly, and persons with heightened sensitivity to chemicals may be more susceptible to illness from VOC exposure. As with any substance, the health impact of any given VOC depends on both its concentration and duration of exposure.