

## Take care with fume emissions

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### ***Q: What is off-gassing, and how does it affect indoor air quality?***

A: Health and safety are issues we consider on a daily basis. From the foods we eat to the seat belts we fasten when we ride in a car, there is no doubt we place immense value on our well-being.

Considering the amount of time each of us spends indoors, it is important to look closely at the materials we use in our homes and how they impact the quality of our health and safety. As a green builder, I understand that the choices I make will affect my client's well-being and that off-gassing plays a critical role in this.

Off-gassing occurs when a trapped, dissolved or absorbed gas in a material is released. This can affect air quality when it collects in a closed, stagnant environment. Products in homes that can off-gas include paint, varnish, carpet, plastics, plywood and other composite materials. These products often contain VOCs (volatile organic compounds). Off-gassing VOCs diffuse unhealthy emissions into the breathing environment of a home. While this occurs at its highest levels upon initial installation, off-gassing can continue for years. I now understand that the "new-car smell" I made positive associations with as a child is unhealthy in the context of the indoor air quality my family breathes.

Choosing products wisely is critical to the mission of improved indoor air quality. Two common building materials that cover vast surface areas in homes and can generate considerable off-gasses are paints and carpets. The federal government has set VOC limits for paints at 250 grams per liter for flat paint and 380 for other paints. While this modern standard is a good minimum benchmark, there are companies that are producing paints that contain low and no VOCs. These products are good choices in new construction projects and are extremely well-suited for repaints of existing homes where you have immediate and continuous exposure to the off-gasses. While I was not impressed with the performance of low-VOC paints 10 years ago when I first tried them, I have been very satisfied with the new low- and no-VOC paints I have used recently.

Because carpets are associated with releasing more VOCs than other floor coverings, the Environmental Protection Agency (EPA) has these recommendations: "New carpet systems (including adhesives used to adhere face fibers to backing materials, carpet cushion and the adhesives often used to install carpets), like most new interior finishing materials, will off-gas VOCs for a period of time after being installed. These emissions can be significantly reduced, although not completely eliminated, in the first 72 hours through the use of proper ventilation techniques. With any floor-covering system, low-VOC emission products should be selected."

I often install carpet in my own construction projects and have carpet in my personal home. I recommend it as a comfortable, attractive and affordable floor covering that, along with the padding, is frequently manufactured with high recycled content materials. When choosing carpet with low-VOC content, look for the Carpet and Rug Institute (CRI) Green Label or, even better, the Green Label Plus designation. This means, according to the EPA website ([epa.gov](http://epa.gov)), that “a representative sample of the product type has been tested by an independent laboratory and meets the requirements for each program established by CRI.”

When having carpet installed, consider asking that it be aired outside the home so that it will significantly off-gas before installation.

Making construction decisions in your home can seem daunting at times, but with a little bit of homework and with responsible “green” professionals to assist you, your home can be comfortable, beautiful and healthy for you and your family.