



PVC: Overview of Hazards and Alternatives

What is PVC?

Polyvinyl chloride, commonly known as “PVC” or “vinyl” is one of the most common synthetic materials. PVC is a versatile resin and appears in thousands of different formulations and configurations. Among plastics, PVC is second in quantity used only to polyethylene. Its greatest use is in the construction industry.

Why is PVC problematic?

PVC is the most commonly used plastic in construction. However, PVC poses great environmental and health hazards in its manufacturing, product life and disposal. Byproducts of PVC, such as dioxin, hydrochloric acid, and vinyl chloride can cause severe health problems, such as:

- **cancer**
- **endometriosis**
- **neurological damage**
- **heart disease**
- **immune system damage**
- **respiratory problems**
- **liver and kidney failure**
- **birth defects**

PVC is manufactured next to low-income communities in Texas and Louisiana. The emissions of these production sites have a disproportionate impact on these communities. PVC also poses a great risk in combustion, such as waste incineration and building fires, because it releases toxic fumes and gases into the air. In addition, PVC is

problematic because it is not an easily recyclable material, and has been declared a recycling “contaminant” that interferes with the recycling of other plastics. The problems associated with PVC out-weigh the benefits and there are safer cost-effective alternatives to PVC in all applications in construction.

Where is PVC used in the construction industry?

PVC is used in piping, but this is not the only use of vinyl in construction. PVC, or vinyl, is commonly used for siding, electrical insulation and sheathing, wall coverings, flooring, carpet fibers and backing, roofing membranes, window and door frames, and miscellaneous uses like vinyl miniblinds. For all of these uses, there exist a wide range of alternative materials that pose less of a health hazard than PVC.

What are some of the alternative materials to vinyl products?

There are a wide range of cost-effective alternatives that avoid the health hazards of PVC. Below is just a sample of the options:

- **PVC Piping**
Alternative materials include cast iron, vitrified clay, and plastics such as cross-linked polyethylene and HDPE (High Density Polyethylene).

- **Vinyl Siding**
Alternative materials include wood, fiber-cement board, polypropylene and acrylic siding.
- **Electrical Insulation and Sheathing**
Alternative plastics are halogen-free, low-smoke polyethylene or linear, low-density polyethylene (LLDPE).
- **Vinyl Roofing Membranes**
Alternative membrane materials include thermoplastic polyolefins and EPDM (ethylene propylene diene monomer) membranes. Alternative roofing systems include low-slope metal roofing.
- **Vinyl Flooring & Carpet**
Alternative materials include natural linoleum, bamboo, ceramic tile, carpeting with natural fiber backing, wood, cork, slab flooring and nonchlorinated plastics.
- **Vinyl Wall Coverings**
Alternative materials include natural fiber and polyethylene wall coverings.
- **Vinyl Windows & Doors**
Alternative materials include wood, fiberglass, and aluminum windows and doors.

Can We Stop Using PVC?

Communities, architectural firms and major corporations all over the world are rethinking their continued use of PVC. A wide range of major corporations ranging from Nike and Lego to GM and 3M have begun moves to switch to alternative materials. An increasing number of major

projects from the UK-French Chunnel to the U.S. EPA headquarters in DC to the Olympic village in Sydney are vastly reducing or completely eliminating the use of PVC.

Where can I get more information?

Green Resource Center
2000 Center St., Suite 120
Berkeley, CA 94704
Phone: (510) 845-0472
Fax: (510) 845-9503

Architects / Designers / Planners for Social Responsibility
Northern California Chapter
P. O. Box 9126, Berkeley, CA 94709-012
Voice: 510-273-2428
Fax: 510-841-9060
Email: adpsr@aol.com
Website: www.adpsr-norcal.org

Environmental Building News - E Build Inc.
122 Birge Street Suite 30
Brattleboro, VT 05301
Phone: (802) 257-7300
Fax: (802) 257-7304
Website: www.ebuild.com

Environmental Resource Guide
American Institute of Architects/COTE
1735 New York Ave., N.W.
Washington D.C. 20006
(202) 626-7300

(January 2000)