



HEALTHIER MATERIALS

Vinyl Flooring and the Power to Select Healthier Materials

Vinyl has the potential to cause harm to both users and a broader environment from manufacturing, through installation and use, and after end-of-life of the material.

When we look around our rooms and office spaces, we are surrounded by many building materials ingredients and byproducts that may be harmful during one or multiple stages of the material life cycle. Many contain substances that pose a hazard during the manufacturing phase, use phase, or other stage of the life cycle.

For example, while vinyl flooring continues to grow in popularity, there are several serious environmental concerns. It is a non-renewable material made from petroleum-based chemicals. Vinyl has the potential to cause harm to both users and a broader environment from manufacturing, through installation and use, and after end-of-life of the material.

Vinyl flooring is made from Polyvinyl Chloride or PVC. During the manufacturing phase of vinyl flooring such as Luxury Vinyl Tile (LVT) or Vinyl Composite Tile (VCT), it produces toxic chemicals like dioxin, a carcinogen and reproductive toxicant. Dioxin are called persistent organic pollutants (POPs). It takes a long time to break down once they are in the environment. It is highly toxic and can cause cancer, reproductive and developmental problems, damage to the immune system, and can interfere with hormones.



Vinyl flooring is often combined with Phthalates. Phthalates are a group of chemicals used to make plastics more durable. They are often called plasticizers. People are exposed to phthalates by eating and drinking food that have contacted products containing phthalates. Children crawl around and touch a phthalates particle dust on vinyl floor and put their hands in their mouth. Phthalates are known endocrine disruptors and associated with decreased fertility and pregnancy loss.

After the end of vinyl's life cycle, it will be disposed to a landfill. It is not biodegradable material. If a remodel of office spaces happens every 10-15 years, we can imagine how much of the vinyl waste will be sent to a wasteland. Something also to consider are the people who live near manufacturing plants or landfills breathing toxins while the materials are being broken down. And of course those who consistently handle the materials for their occupation such as the installer. They are all affected by the materials we select. Power to select a healthier material is within the designers and architects' hands.

When selecting materials, we recommend reviewing if there are high impact categories, such as vinyl and phthalate products, formaldehyde adhesives, and polybrominated diphenyl ethers (PBDE) in flame retardants. For the example of vinyl flooring, better alternatives are natural linoleum, FSC-certified solid wood with a water-based sealant, tile made in the U.S. If possible, use solid surface flooring instead of carpet. Recommend using nail-down or click/interlocking installation instead of glue to avoid harmful volatile organic compounds (VOC).

If the project cost prohibits all healthier alternatives that you would like to implement, think of balance and priority. Find a greater impact with one healthier material replacement that covers a large area. Can you replace VCT flooring for 10, 980 square feet of classrooms with natural linoleum tiles? You can also prioritize who will occupy the space. For cancer center or daycare center projects, specify caseworks, flooring adhesives and acrylic latex sealants without formaldehyde, styrene and phthalates. We can create a space free of carcinogens and asthmagens.

All of us can make one small step at a time to make a greater difference.

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At HED, great design is about thinking creatively to overcome challenges and improve real world outcomes. If you'd like to learn more about material health and material selections in your space, or strategic material replacements or substitutes, click the link above, our teams are here to help.

References:

EPA, Learn about Dioxin:

<https://www.epa.gov/dioxin/learn-about-dioxin>

Centers for Disease Control and Prevention, Phthalates Factsheet:

https://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

EWG (Environmental Working Group) Healthy Home Guide:

<https://www.ewg.org/healthyhomeguide/flooring/>