

Vetting Building Materials

Fact Sheet

Is it toxic?



In a time of drastic change it is the learners who inherit the future. The learned usually find themselves equipped to live in a world that no longer exists. – Eric Hoffer



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Vetting Building Materials for Healthier Indoor Environments Fact Sheet

Current Situation

Indoor air quality is one of the top hazards threatening human health. We spend 90% of our lives indoors, whether at home or work. Poor indoor air quality comes from four main categories of hazards: harmful chemicals, mold (and other naturally occurring hazards), byproducts of combustion, and electromagnetic radiation. The first two exposures, chemicals and mold, can be directly caused by the choices we make in construction and maintenance of buildings.

Conventional construction materials commonly contain carcinogens, mutagens, immune sensitizers, and chemicals that are harmful to the human nervous and reproductive systems and the ecosystem so it is vital for architects, builders, and consumers to learn to recognize indoor air hazards and how to avoid them.

There are many names that together describe the range of concerns regarding ill health affects brought on by current building practices, including Sick Building Syndrome, Building Related Illness, Environmental Illness, Multiple Chemical Sensitivity, and Electromagnetic Hypersensitivity.

While the use of toxic chemicals in construction is commonplace today, there are people and organizations working to change this – to raise awareness of the dangers, to find safe alternatives, and to remove toxins from products. Unfortunately, there is not always clear consensus on which chemicals are of concern and in reality we know very little about the majority of chemicals in use today.

Evaluating Building Materials and Ingredients

As Building Biologists we should also abide by the Hippocratic Oath. “First do no harm.” But when it comes to building products, how do we know what is in them and what effect these ingredients will have on humans and the Ecosystem?

There are three main components to vetting a building product or material: determining if the product has already been researched and certified, determining the chemicals or ingredients used to create a material, and if there are any identified or suspected health hazards associated with the ingredients.

There are several organizations that have created certification systems to identify safer materials to use including: Health Product Declaration, Declare, Cradle to Cradle, Building Green, Pharos, GreenScreen, Green Guard, and CARB II Compliant.

If the product has not been certified, there are several different methods to determine the ingredients including Material Safety Data Sheet (MSDS), Safety Data Sheets (SDS), Health Product Declarations (HPD), Declare labels, and contacting the manufacturer or distributor directly. Used together, these sources can be very helpful, but alone, each has limitations. Evaluating Ingredients

When you feel like you have a complete as possible list of ingredients for a product, there are several tools to help you determine the level safety of each chemical, including GreenScreen for Safer Chemicals, the Chemical Hazard Data Commons, Toxnot, PubChem Open Chemistry Database by the US National Library of Medicine and CAS by the American Chemical Society. There are also red lists or precautionary lists that have been published by organizations from architecture firms and green building / product rating system developers to governmental agencies and science/research institutes.

Because each organization or agency has different ways of categorizing chemicals, there are both overlap and discrepancies among the lists.



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We can sometimes find out definitively that a product should not be used. We can occasionally find a product that we know to be safe, but the “grey area” is enormous. Because of this, it is essential to prioritize our decision-making process. Because each person/project will have different sets of priorities, it is important to become familiar with evaluating building materials so that you can make the healthiest choices for yourself or your client.