

China's Toxic Harvest

Imported drywall poses potential health, safety risks

By Camille Atrache

The issue of toxic Chinese drywall may well become the biggest environmental crisis to hit North America.

Defective Chinese drywall emits hydrogen sulphide and other toxic gases that migrate into the indoor air, especially when exposed to humidity. These sulphide gases are alleged to cause serious health conditions and illnesses, such as breathing problems, dizziness, headaches, bloody nose, fatigue, insomnia and eye irritations. According to the U.S. Centers for Disease Control and Prevention, prolonged exposure to the compounds in the drywall, particularly high levels of carbon disulfide, can cause chest pains, affect the nervous system and even result in death.

As the sulphur in the drywall off-gases it produces a noxious odour, which does not dissipate. It also creates a corrosive atmosphere that requires immediate attention. Chinese drywall has been reported to corrode metals and cause significant damage to HVAC systems, metal plumbing components, electrical wiring, light bulbs and fixtures, smoke detectors and other appliances.

It has been estimated that as few as three sheets of drywall in a 1,500-square-foot space can be enough to contaminate it to the point of making it uninhabitable.

So far, most complaints about Chinese drywall have come from the southern U.S. states, where a warm, humid climate encourages the emission of sulfur fumes. In dryer, cooler climates, it may be years before people begin to see the health and safety risks associated with this material.

The Suspected Culprit

When compared to its American counterpart, Chinese drywall has shown to contain higher levels of sulfuric and organic compounds as well as traces of strontium sulfide. Strontium sulfide is a grey powder that reacts with acids to emit hydrogen sulfide gas or a "rotten egg" odour when exposed to moist air. Chinese drywall has also been found to contain higher levels of hydrogen sulfide, carbonyl sulfide and carbon disulfide than American-made drywall. All of these compounds are potentially toxic and carbon disulfide in liquid form is extremely flammable.

While there is no conclusive evidence to explain why Chinese drywall gives off sulfur fumes, its composition may provide a clue. Chinese drywall is made with fly ash, a waste product generated in the combustion of coal. The process of "scrubbing" the smokestack emissions creates calcium sulfate or gypsum, which can then be used to produce drywall. In the U.S., drywall is also made from fly ash but the material is taken from the smokestack where it is scrubbed, resulting in a cleaner product. In China, however, the fly ash may be obtained before it makes its way to the smokestack. This creates a "less refined" product.

Remedying the Effects

The controversy surrounding Chinese drywall relates to products brought into the U.S. between 2001 and 2007. It is estimated that hundreds of millions of sheets of the defective drywall were imported by the U.S., with as much as 929,000 square metres of Chinese drywall arriving in Canada through Vancouver, all bound for Canadian destinations mainly in Lower Mainland, B.C., though there is evidence that some made its way to the Prairie provinces and Toronto.

Properties built or renovated with contaminated Chinese drywall cannot be repaired. The only possible fix for affected areas is to have tenants move out for several weeks, gut the entire space and then rebuild the interior. In addition, because surrounding areas may have become contaminated by the sulphide gases, these areas will also have to be removed and replaced. Anything within the space may have been contaminated by the sulphide gases,

so they will also have to be destroyed and replaced. Unlike airborne hazardous materials, such as lead-based paint and asbestos, phosphogypsum-based drywall cannot be "sealed" with a coat of paint.

Camille Atrache is chief operating officer and partner at Tri-Phase Environment Inc. For more information, contact Camille at 905.823.7965 or catrache@pcbdisposal.com.



Indications of Toxic Chinese Drywall

- Foul, sulfurous "rotten egg" odour coming from walls.
- Continuous, inexplicable failures of air conditioning coils, HVAC units or appliances beyond anything normal.
- Black corrosion in electrical wiring in the walls
- Metal in contact with relatively new drywall is corroding quickly.
- Severe upper respiratory problems, nose bleeds, headaches or other potentially serious medical conditions.
- Drywall is newer than 2001.