

Disposal Options for Imported Drywall

*Mainsail Suites Hotel & Conference Center
Tampa, Florida
November 5, 2009*



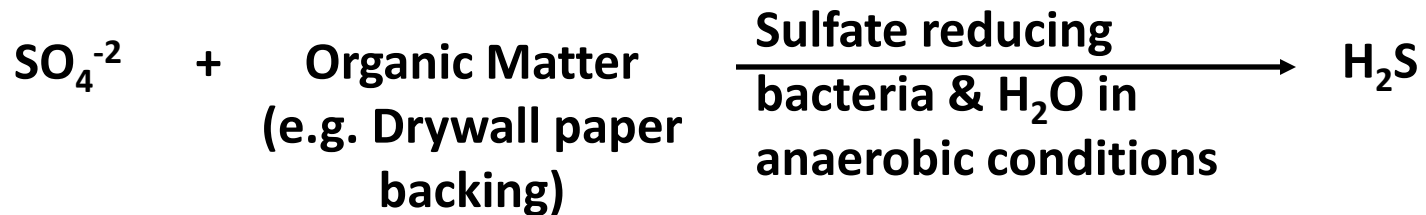
*Richard B. Tedder , P.E.
Program Administrator
Solid Waste Section*

Department Involvement

- **October 2008 - First began hearing of problems with imported drywall in Florida homes.**
- **February 2009- Contacted by FDOH to help with this issue.**
- **March 2009 – Obtained imported drywall samples from Dr. Townsend and began laboratory testing of them.**
- **April 2009 - Determined the drywall was not a characteristic hazardous waste.**
- **May 2009 – Developed Interim Drywall Disposal Guidance.**

H₂S Generation at C&D Sites

- H₂S generated from domestic drywall has been a problem at some C&D Debris disposal sites.
- The production of H₂S occurs when calcium sulfate (from gypsum wallboard) is consumed by sulfate reducing bacteria to produce hydrogen sulfide gas.



Some Differences with Imported Drywall

- **Other gases reported in addition to H₂S: carbonyl sulfide (COS), carbon disulfide (CS₂).**
- **Elevated levels of total strontium (but not above Department's health-based risk levels).**
- **Different color (darker than domestic drywall).**
- **Reported copper corrosion problems in houses and health complaints from residents that may be related to imported drywall.**

Drywall Examples (Sarasota)

The US drywall is brighter white in color, while the Chinese drywall has a gray tint.

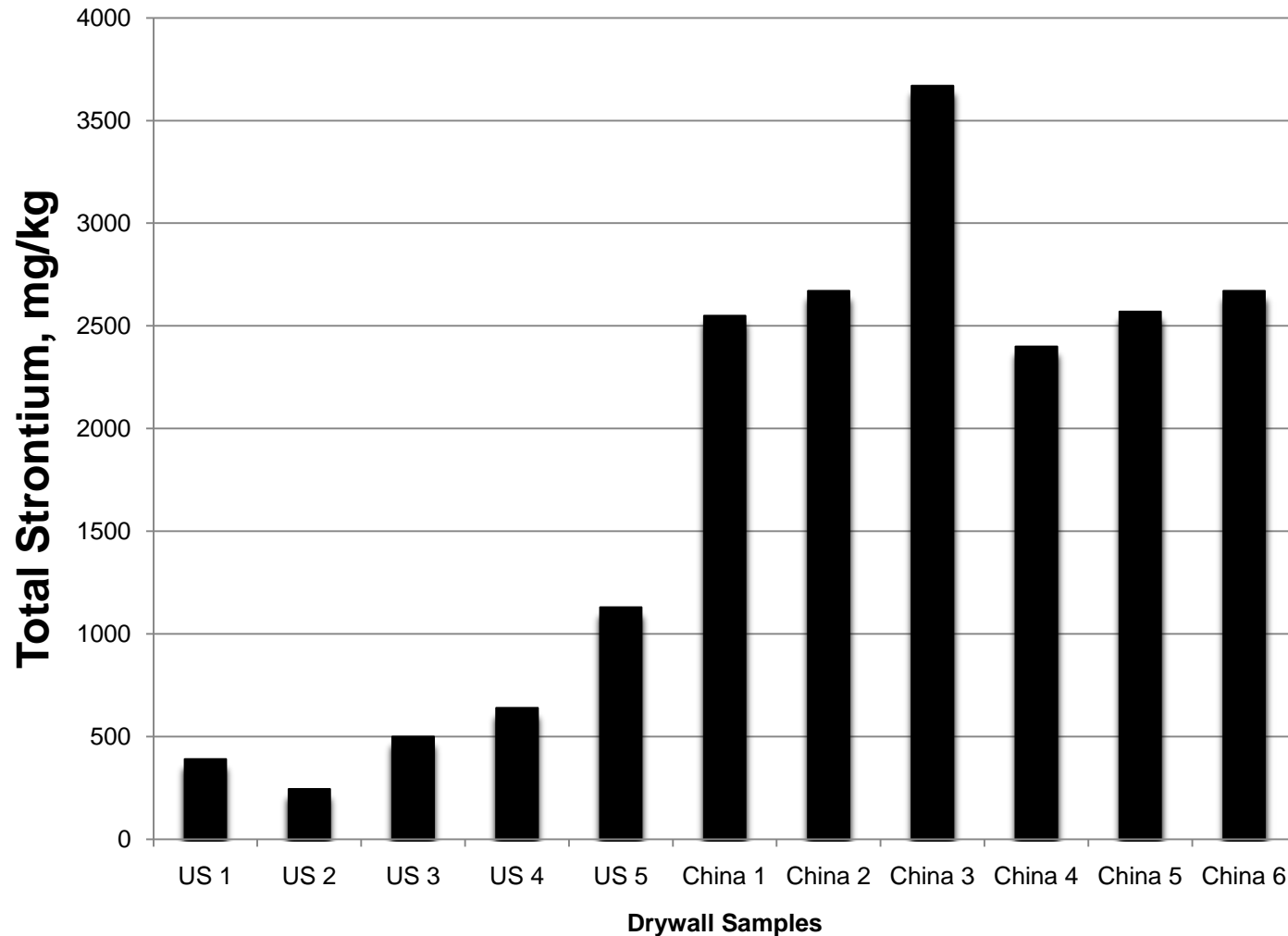
US drywall



Chinese drywall



Strontium Content in Drywall, mg/kg



Residential SCTL = 52,000 mg/kg



The Disposal Question

- **Questions were being raised about how to dispose of this drywall.**
- **Florida Statutes define “gypsum wallboard” as part of construction and demolition debris (Section 403.703(6), F.S.).**
- **It is legal to dispose of this material at a permitted C&D Debris disposal facility.**
- **However, due to H₂S problems from domestic drywall and other possible gas problems from imported drywall, the Department decided to issue Interim Guidance for Disposal of this material.**

Interim Drywall Disposal Guidance

(Memo SWM-19.17, May 28, 2009)

- **Recommends dedicated loads of drywall go to a Class I landfill that applies initial cover daily and has a gas control system.**
- **If dedicated loads of drywall are taken at C&D sites or Class III landfills, then the waste should be covered with initial cover daily if possible or at least weekly.**

Memorandum		Florida Department of Environmental Protection	
TO:	District Waste Program Administrators District Solid Waste Engineers		
FROM:	Richard B. Tedder, Program Administrator Solid Waste Section		
	Chris McGuire, Senior Assistant General Counsel Office of General Counsel		
DATE:	May 28, 2009		
SUBJECT:	Interim Drywall Disposal Guidance SWM-19.17		

A number of problems have been reported involving homes that were constructed over the past several years with drywall imported from China. While the exact number of homes affected in Florida is unknown, it is estimated that as many as 35,000 or more houses were constructed with Chinese drywall. This drywall appears to be emitting gasses, including hydrogen sulfide, sulfur dioxide and carbon disulfide, that may be related to numerous health complaints being investigated by the Florida Department of Health. There is also evidence that the drywall, probably through emission of some of these gases, is causing corrosion of copper wires and air conditioner coils in these houses. Data from testing this drywall indicates it is not a characteristic hazardous waste. However, it seems to release hydrogen sulfide gas at a faster rate than domestic drywall. It also appears to have elevated levels of strontium relative to domestic drywall.

In the aftermath of the clean-up from the 2004 and 2005 hurricanes, several construction and demolition (C&D) debris disposal facilities in the northwest region of the state experienced severe hydrogen sulfide¹ odors. In some cases, the concentrations of hydrogen sulfide were a potential health concern to residents living near these facilities. This was probably a result of accepting large volumes of damaged drywall along with vegetative debris. While hydrogen sulfide odors have been reported sporadically at C&D disposal facilities statewide, there have not been major issues with odors at most facilities that accept small amounts of drywall in the normal course of business.

Because of the current odor problems and potential health concerns from hydrogen sulfide gas, along with the possibility that many tons of Chinese drywall will enter the waste stream in the near future, questions have been raised about the proper

¹ It is well known that calcium sulfate from drywall, when exposed in a disposal facility to anaerobic conditions, moisture and organic matter, is consumed by sulfate reducing bacteria to produce hydrogen sulfide gas.

This memo is available at the following DEP website:

http://www.dep.state.fl.us/waste/quick_topics/publications/shw/solid_waste/policymemos/SWM-19-17.pdf

Questions?

MADE IN CHINA