

Ask Jon Eakes

OVERVIEW: Was Urea Formaldehyde (UFFI) foam insulation really a health hazard?

Last Updated: Wednesday, February 20th, 2002, Created: Wednesday, February 20th, 2002

(updated Sept 2009)

Since the early 80's Urea-Formaldehyde Foam Insulation (UFFI) was banned in Canada and the US. The Canadian ban is still in place while it is now legal again to sell Urea-Formaldehyde based foam in the US and Europe. Whether it ever was or still is actually a health problem or not, it is still hurting real estate values, even if it has been removed. One of the building science realities that is unfortunately not understood by the real estate industry is that now almost 30 years after it was installed, even if Formaldehyde off gassing was a health problem, there is absolutely no Formaldehyde gas left in any walls in Canada today. 30 year old UFFI is no longer even a potential health hazard and should have no detrimental effects on real estate values or even require any special precautions in renovation other than ordinary dust masks.

What's the real story on this greatest of renovation controversies?

I'll let you follow this fascinating story in detail through the links below, but allow me to summarize as we go through the story.

UFFI, like many other common household products, contains the ingredient formaldehyde. After UFFI began to be used in insulating and sealing houses in the mid 1970's, some homeowners reported various health problems. Research was begun on this very common gas, formaldehyde. In high dosages, it was found to cause cancer in rats and mice. Health Canada and the US Environmental Protection Agency (EPA) set maximum acceptable levels for the presence of formaldehyde in homes, and, as a precautionary measure, UFFI was banned.

You really must read the whole story as described by the independent building scientists at Carson Dunlop -- www.CarsonDunlop.com or follow this hot link directly to "Much Ado About Nothing?" www.CarsonDunlop.com/OBS/uffi.html.

Of great interest, to me, was when the technicians working for Health Canada, and charged with setting the standards, actually measured formaldehyde gas levels in thousands of UFFI houses, they could not find one over the Health Canada limits due to formaldehyde coming from the insulation. It was found that heavy smokers produce more formaldehyde gas than the insulation in the UFFI houses.

The latest information from CMHC on UFFI says basically the same thing (About Your House series - CE 06) www.cmhc.ca, including the note that since 1993 a UFFI declaration has not been required for mortgage insurance under the National Housing Act, although no explanation was given for removing this requirement.

Furthermore, no court in Canada, the US or Europe has ever upheld challenges claiming that UFFI was a health hazard. In fact, once again, the insulation is legal in the US and has been commonly used for the past 30 years in Europe, where it is still considered an insulation of choice. Despite the lack of judicial support for the idea that UFFI is a health hazard, some Canadian courts have upheld that it must be disclosed as a "hidden defect" in real-estate transactions. This is a

frustrating contradiction for both UFFI homeowners and real estate agents alike.

Formaldehyde gas is a legitimate concern and there are many sources of formaldehyde in our lives, including particle board, flooring glues, carpet glues, the coating that makes shirts wrinkle free and cigarette smoke. There are ongoing efforts to reduce the quantities of formaldehyde brought into our homes from all sources. For the latest information about formaldehyde, I refer you to the US Environmental Protection Agency "An Update on Formaldehyde - 2009 Revision". (www.epa.gov/iaq/formalde.html)

Probably the most comforting information about UFFI for homeowners today was in the CMHC report cited above: "As it was last installed in 1980, it would certainly not be causing excess indoor formaldehyde today. Houses with UFFI show no higher formaldehyde levels than those without it."

So the evidence, that I have been able to find so far, shows that UFFI continues to be a real-estate problem even though substantial evidence shows that it was never a health problem.

However, people were seriously sick after re-insulating their houses. If it wasn't the formaldehyde, what was it?

In the last decade, CMHC and Health Canada have done considerable research on the effects of mould on occupants in houses. Descriptions of the health problems appear identical to those that were raised during the UFFI crises.

It's worth taking a look at a document from Health Canada, entitled "Formaldehyde and Indoor Air"

"Bacteria, mould, dust mites and their by-products in indoor air can cause a number of health problems: Allergic reactions such as asthma or allergic rhinitis; Non-allergic reactions such as headaches and other symptoms; Lung and breathing infections; Illnesses caused by poor air quality range from skin irritation to sneezing and asthma. In some cases, toxins from fungi can cause illness. Toxins in dust can produce fever and flu-like symptoms, especially if the environment is damp."

UFFI was one of the most effective insulations of its day in its ability to stop air drafts through the walls. Today, we recognise the need for stopping those drafts, but also the related need to provide adequate mechanical ventilation, keeping humidity levels low enough to prevent the formation of mould inside the home. Sealing up the houses raised the moisture levels indoors, and high humidity levels led to mould growth. UFFI just happened to seal the houses up better than most other insulations, and few people put in ventilation systems prior to the 1980's. It now appears that lack of mechanical ventilation, and not formaldehyde, was the problem, with mould as the likely pathogen.

This theory may be reassuring to some home owners who had applied to remove their insulation during the crises, only to be told that the insulation installed in their homes was not UFFI but something else, and their health problems were psychosomatic. No. They weren't imagining their illness. Even today, well-done renovations without adequate ventilation can lead to serious mould, and consequent health, problems.

CMHC has examined mould problems and solutions in various publications, like "Moisture and Air: Problems and Remedies". This document is intended to help you find some of the typical signs of moisture and air quality problems in your house, to identify the probable causes and to propose practical solutions.

In 1995, in response to all the mould research, the National Building Code required that all new houses be built with effective mechanical ventilation. I receive hundreds of e-mails each week about house problems, and probably 3 or 4 a week about mould problems in new houses. Most interestingly, all of the complaining new homeowners live in Ontario. No complaints come from new homes in any other province. As in all other provinces, Ontario requires new houses to be tightly sealed, to protect the structure. However, unlike all other provinces, Ontario has implemented ventilation provisions that are not as stringent as the National Building Code recommends. Subsequently, it appears that only Ontario is experiencing mould problems in new homes. Some argue that it's because of insufficient mechanical ventilation in well sealed houses.

We could let the old UFFI controversy fade away, but I believe there are important lessons to be learned from it, lessons about the need for effective mechanical ventilation.

With the evidence cited by independent experts, like Carson Dunlop, that formaldehyde gas emissions in the UFFI insulated and sealed houses of the 1970's were not over the Health Canada standards, I would speculate that there would have been no health problems for those homeowners, if we had installed today's whole house ventilation systems, and, by doing so, prevented the growth of mould and mildew.

I believe there is sufficient evidence to totally remove the UFFI stigma from the value of existing houses. I think it's time to set minds at ease for families living in these homes. Certainly, it's time for everyone to recognise the need for effective mechanical ventilation in all new or seriously renovated houses. Preventing mould growth in our houses is critical, and we have the knowledge and technology to do it. We need the awareness and the will to make it happen.

Efforts to reduce Volatile Organic Compounds (VOCs), including formaldehyde, from all sources in our houses, will be a continuing project for all of us, but no more so for people living in UFFI insulated houses than for the rest of us.

Keywords:

Air Quality, Foam, Formaldehyde, Health, Insulation, Mildew, Mold, Mould, Overview, Urea Formaldehyde, Ventilation

Article 1771

www.joneakes.com