Ask the

INSPECTOR...

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What exactly is Urea Formaldehyde Foam Insulation (UFFI) and how can I tell if I have it in my home?

UFFI is a type of insulation composed of a urea formaldehyde resin. When mixed with a foaming agent and compressed air, it is easily injected into exterior wall cavities, which is a much more cost effective method of adding exterior wall insulation to existing homes than more conventional insulation. Urea is a substance that is formed by a chemical reaction between ammonia and carbon dioxide. This process occurs naturally within the liver of mammals and the nitrogen waste that is generated is present as urea in the urine of animals, including humans. Due to its high nitrogen concentrations it is most widely used as a fertilizer, however it is also used (along with formaldehyde) in the formation of plastics and particle board. Pure urea exposure will cause irritation to skin and could be a health concern if inhaled in large doses, however in the form most commonly found in homes it is not typically a health concern. Formaldehyde is present naturally in the environment and is used in many building materials today, including carpets, fabrics, plywood, and particleboard. It is also present in tobacco smoke and as a product of combustion in wood and other fuel burning appliances. In low concentrations, formaldehyde is not a health concern; however in large quantities it can cause headaches, dizziness, respiratory problems, and/or irritation to eyes, nose, and throat.

UFFI was first developed in Europe in the 1950's and came to Canada in the 1970's. The peak installation period for use in residential energy efficiency retrofits occurred between 1977 and 1980 as part of a federal government energy conservation effort. In December of 1980 the use of UFFI was banned in Canada after some homeowners who had UFFI installed complained of negative health effects, including headaches, fatigue, and nosebleeds. These health problems were linked to the off-gassing of formaldehyde gas which sometimes occurred within the first one or two days after installation if the insulation components were not properly mixed. The negative press that ensued prompted many homeowners who had UFFI installed to have it removed. Studies by the Natural Research Council of Canada into the levels of formaldehyde in UFFI homes were initiated in 1981 after the ban was enacted. The research revealed that homes that contained UFFI had formaldehyde levels below the acceptable level of 0.1 ppm (Parts Per Million). In fact, homes that had recently installed carpet had higher levels of formaldehyde than houses with UFFI. The study found no link between elevated indoor formaldehyde levels and UFFI.

There are several ways of determining if UFFI is still present in a home. The most obvious sign that UFFI was installed are small, plugged holes in regular intervals in the exterior siding. UFFI was most often injected into the home through the exterior siding, either in

mortar joints of brick or concrete block or directly into wood, aluminum, or other types of siding. Injection holes are typically 1-4 cm round and spaced at regular intervals in some or all of the exterior walls. These holes were filled after injection with mortar, caulking, cork, or other types of sealants. It is sometimes very difficult to see the plugs, especially if they are very tiny or in brick siding where the mortar plugs are well blended with the original mortar. It should be noted that other types of insulation such as cellulose fibre insulation can be injected into exterior walls and therefore the presence of injection holes may not provide conclusive evidence that UFFI is present. Sometimes UFFI can be found in the attic or basement ceiling at the exterior walls. It is a white, blue, or yellow, foam-like substance that typically crumbles easily when handled. Other indications that UFFI may have been installed in a home and later removed are drywall in an older house at the exterior walls, new brick or siding on an old house, or a 15-20 year old Heat Recovery Ventilation System (HRVS) installed in an old home. HRVS' are air exchangers that were sometimes installed instead of removing the UFFI to ensure that fresh air was supplied to the home to prevent the build-up of formaldehyde inside the home. It is important to ask questions before coming to the conclusion that a home has UFFI simply because there are injection holes, there is newer drywall, new siding, or an HRVS. It may turn out that the homeowner has done renovations to improve the appearance of the home or that some other type of insulation such as cellulose fibre has been injected into the walls.

Some people are still concerned with the levels of formaldehyde in a house today that has UFFI. Air testing is available to determine formaldehyde levels if someone is concerned, however considering that UFFI has not been installed in homes in Canada for over 20 years and that even 20 years ago homes containing UFFI did not show signs of elevated formaldehyde levels, air quality testing will most likely reveal very low formaldehyde levels, if any. Although it has gained a significant amount of bad press in the past, the indoor air quality in a home containing UFFI should not be assumed to be poor. It should be mentioned that there is a potential for the UFFI to begin breaking down and releasing formaldehyde if the insulation gets wet. If water leaking has occurred and it is suspected that the UFFI insulation has come into contact with moisture, the UFFI should be removed.

Is it true that I may have trouble getting insurance or a mortgage for a house that contains UFFI?

After the initial UFFI ban and for some years later, lending institutions, insurance companies, and the Canadian Mortgage and Housing Corporation (CMHC) required a UFFI disclosure prior to a homeowner getting a mortgage, supplying insurance, or getting mortgage insurance. Since 1993, the CMHC has not required a UFFI disclosure for mortgage insurance and most lending institutions also no longer perceive there to be a great risk associated with lending money for a home that contains UFFI. Although most home insurance companies have recently provided coverage for homes with UFFI, it is best to check with the company prior to purchase to be sure. The Canadian Real Estate Association (CREA) requires that the vendor and listing Agent inform prospective purchasers if UFFI is present in the home. Therefore, if the vendor is aware that UFFI is present in a home, it must be disclosed.

For further information please contact:

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