What's the Risk?

GERMANIA MUTUAL INSURANCE SINCE 1878
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Polyurethane Foam insulation

Introduction

Polyurethane foam insulation (PUFI) or foamed plastic insulation is a common insulation found in many homes, commercial and agricultural buildings. It can be sprayed in place (becoming ridged when cured) or installed as a rigid foam insulation sheathing. There are many benefits to a sprayed in place foam insulation. It can act as a vapour barrier, adds stability to a structure, can be applied on uneven surfaces, fills in cracks and gaps to provide an air tight seal and it has a high R-value per inch of thickness. The most common type of sprayed in place foam insulation is "closed cell" which is denser than "open cell". Because it is denser it has better moisture and air penetration values and adds more structure stability than "open cell" insulation.

What's the Risk?

As described by a 1989 OSHA technical memorandum:

"Rigid polyurethane (sprayed in place) and polyisocyanurate (rigid sheathing) foams will, when ignited, burn rapidly and produce intense heat, dense smoke and gases which are irritating, flammable and/or toxic. Thermal decomposition products from polyurethane foam, consist mainly of carbon monoxide, benzene, toluene, oxides of nitrogen, hydrogen cyanide, acetaldehyde, acetone, propene, carbon dioxide, alkenes and water vapor. One of, the major safety precautions to be taken around organic [carbon based petrochemical] foams is to prohibit sources of ignition, such as open flames, cutting and welding torches, high intensity heat sources and smoking."

What can be done?

The National Building code of Canada specifies that PUFI or foam plastic insulation must be protected by a thermal barrier in combustible construction other than in concealed spaces (attic or roof spaces or crawl spaces). Since it is expensive to add a thermal barrier, installers often leave it up to the home owner or business operator to install the required thermal barrier. Property owners, (in most cases) are unaware of the need for a thermal barrier and invoices from insulation contractors will often have a disclaimer printed on them stating that the client understands that a thermal barrier needs to be provided.

Acceptable thermal barriers include plaster, gypsum board, plywood, hardboard, insulating fiberboard, particle board, Oriented Strand Board (OSB), wafer board or an intumescent coating. Please check with a Building Code official for specific thermal barrier requirements.

As part of their contract of insurance with a policyholder, an insurer has the right to refuse or accept specific thermal barriers even though they may be approved for use as a thermal barrier in the building code. In fact, an insurer can supersede the requirements of the National or local building code (using underwriting requirements) if the insurer deems there to be a property or life safety concern.