ASBESTOS WATCHDOG

An Introduction to Asbestos Science – The Facts

Much of the confusion over asbestos arises from incorrectly transposing the health risks posed by certain types of raw asbestos fibres onto other asbestos containing products, present in millions of buildings, which present no measurable risk to health.

This results in millions of pounds worth of unnecessary work being conducted every year. It is Asbestos Watchdog's aim to provide the most accurate and up to date science and use it to provide you with the most appropriate, practical and cost effective solutions to your asbestos problems.

Knowing the correct facts arms you with the ammunition to prevent exploitation by unscrupulous contractors.

Asbestos in its raw form

'Asbestos' is a generic term used for the fibrous forms of 6 naturally occurring minerals. They are all flame retardant, heat insulating, acid resisting, non-conductive and exceptionally stronger than steel.

There are only 3 main types of asbestos fibres that are commercially used:

1. Crocidolite (also known as 'blue asbestos')
2. Amosite (also known as 'brown asbestos')
3. Chrysotile (also known as 'white asbestos')

There is no simple test to identify the different fibres; laboratory examination is required (you cannot always distinguish by colour alone). All fibres can be dangerous in their raw form (as are nearly all industrial raw materials), but blue and brown asbestos fibres are known to be much more dangerous than white asbestos fibres.

The 3 minerals fall into 2 distinct categories of asbestos minerals; the 'amphiboles' and 'serpentines'.

Blue and brown asbestos fibres (and the other 3) fall into the 'amphibole asbestos' category; they are compounds of metal silicates consisting of short, sharp fibres. They are dusty and once inhaled the fibres are capable of existing in the human body for a great length of time.

White asbestos fibres falls into the 'serpentine asbestos' category; it is a compound of metal silicates consisting of softer, more flexible fibres. Once inhaled, their flexibility allows the fibres to be readily broken down in the body, hence their lower toxicity.

Asbestos in products

When asbestos fibres are incorporated into products, they lend the material their unique flame retardant, high strength properties. Unfortunately, people also incorrectly believe that the risks associated with the raw asbestos fibres are transposed onto the asbestos containing materials as well. For 90% of all asbestos containing materials, this is not the case.

For example, nickel-plated alloys are a class one carcinogen but products made from nickel-plated alloys (such as Euro coins) do not carry the same level of health risk. This is the same for asbestos fibres; all asbestos fibres are class one carcinogens but this does not mean that products made from them carry a greater risk than the coins or the other 500 products on the class one carcinogen list in common use today.

Types of asbestos products

Asbestos fibres are incorporated into materials to produce either Low Density asbestos containing materials (ACMs), or High Density ACMs.

Low density ACMs have asbestos fibres left loose or mixed with a plaster and sprayed into cavities and onto surfaces requiring insulation. Such use (even with a plaster matrix) has a low resistance to wear and readily releases fibres when damaged. It is true that these materials are capable of posing measurable risk to health if damaged.

High Density ACMs have asbestos fibres hard encapsulated (HE) and sealed by mixing them into cement products which lends the cement unique properties. Such products have a high resistance to wear and only release fibres under duress. These materials are not normally capable of posing any measurable risk to health.

It is wise to know the difference between High Density and Low Density products, this is the first step to protecting yourself from exploitation from surveyors or contractors who try to convince you both are equally dangerous and removal is the only option even if you only have high density materials such as asbestos cement.

Where asbestos products are found

It has been estimated that asbestos fibres have been used in over 3000 products. Below is a selection of items that MAY contain asbestos fibres. Please do not worry unduly about exposure to any of these items; approximately 90% of these are High Density products and unlikely to emit fibres unless actively damaged. One fibre will not kill and you have to be exposed to levels of fibre normally only associated with industrial processes to become vulnerable. You will not normally get this level of exposure in the domestic environment.

Since all asbestos product manufacture was banned by 1999, modern versions of the items below will not contain asbestos.

Adhesives and thermal taping compounds
Cement products (pipes, roofing, wall panels, rain gutters and down pipes soffits, flues, and loft cold water tanks)
Classroom chalkboards
Construction mastics (floor, tile, carpet, ceiling tile, etc)
Cooling towers
Electrical equipment (ducts, panel partitions, cloth insulations)
Fire doors, curtains, blankets and other fireproofing materials
High temperature gaskets
Household heat resistant items (iron board covers, oven gloves)
Insulation (spray-applied, blown-in, electrical wiring, boilers, etc)
Laboratory equipment (hoods, table tops, gloves, etc)
Lift equipment (panels, brake shoes)
Plaster (acoustical, decorative)
Roofing material (shingles, felt, cement)
Textured paints / coatings

Tiles (floor, ceiling, panels, sheet flooring, backing)
Thermal paper products
Vehicular break pads
Packing materials

How asbestos fibres can affect health

We are all exposed to low levels of asbestos fibres on a day-to-day basis, either in the ambient air or in drinking water. Exposure to these low levels of fibres DOES NOT cause us to develop asbestos related health problems.

Asbestos only starts to affect health when significant amounts of fibres are inhaled into the lungs. These levels of fibre release normally only occur when damage occurs to asbestos containing materials.

Unfortunately, breathing in significant amounts of asbestos fibres can sadly lead to people developing one of these three main diseases:

1. asbestosis – a scarring of the lung, reducing lung function (this is not normally fatal but can progress to lung cancer)
2. lung cancer
3. mesothelioma – a cancer of the lining around the lungs and stomach (not associated with white asbestos products)

These diseases can take from 15 – 60 years from first exposure to develop and on exposure there will be no immediate changes in health. Approximately 95% of all asbestos related disease occurs in workers born before 1940; this is not a modern disease.

Further information

Should you wish any additional information about asbestos science or more specific information on a particular asbestos topic please contact Asbestos Watchdog at mail@asbestoswatchdog.co.uk