

Water leaks in schools and the implications for asbestos contamination.

Leaking roofs are a common problem in particularly flat roofed schools. Although dripping water, wet floors and buckets in the corridors cause their own problems, the concern is that the leaks can also contaminate the classrooms, corridors and halls with asbestos fibres.

Sprayed asbestos and asbestos lagging have been used in schools and unless properly sealed can release significant quantities of asbestos fibres which will lie on the surface of the material, and both the fibres and any debris will precipitate into the ceiling and wall voids or in under floor ducting. All types of asbestos have been used, and therefore the fibres could be crocidolite (blue) or amosite (brown)¹.

Asbestos cement is water resistant which is why it is extensively used for roofing and water pipes, however even then it can release significant quantities of asbestos fibres.² Asbestos insulating board is resistant to damp which is why it has been used as ceiling tiles and wall panels in damp places such as kitchens, changing rooms and lavatories, it has also been extensively used elsewhere in schools for fire protection and as a general building material in partition walls, as window surrounds, as packing material, as firebreaks and as suspended ceiling tiles. AIB is more friable and readily gives off its fibres if its surface is not sealed, so that the hidden and untreated surface will inevitably release fibres. AIB normally contains amosite, but can also contain chrysotile (white) and some earlier boards contain crocidolite.³ It is also not uncommon for AIB debris to be left in ceiling and wall voids in schools⁴, as these materials are friable the fibres are easily released.

If the building is pre-early 1980's it is likely that friable asbestos will be present in one form or another and between then and 2000 it is possible that asbestos will be present although it is less likely to be the more friable materials. If it is hidden in the structure of the building then an asbestos survey might not have identified it, however its presence must always be presumed, and if there is a leak then it must also be presumed that the water entering the building contains asbestos fibres.

If there is a leak then the asbestos fibres will be suspended in the water, they will then enter the corridors, classrooms and other rooms as the water drips through the ceiling or runs down the wall. Suspended in water asbestos fibres do not present a known significant danger, however the problem comes when the water dries as the suspended fibres then precipitate out and contaminate the rooms. Any activity will then suspend the fibres so that they can be inhaled by the occupants of the rooms.⁵

In 2008 a System built school in South Lanarkshire had a problem with leaking roofs. An inspection was carried out by an HSE inspector who wrote a formal warning letter to the local authority about

¹ HSE Asbestos the surveyors guide HSG 264 p53, 54

² Incidence of Cancer among Lighthouse Keepers Exposed to Asbestos in Drinking Water -- Andersen et al_ 138 (9) 682 -- American Journal of Epidemiology.

³ HSE Asbestos the surveyors guide HSG 264 p54

⁴ HSL.Further measurement of fibre concentrations in CLASP construction buildings. Apr 2008 para 4.4 p29. HSL Summary of fibre concentrations in CLASP construction schools containing asbestos HSL/2007/22 Apr 2007 para 4.3 p 18

⁵ Mesothelioma; cases associated with non-occupational and low dose exposure Hillerdal Occup Environ Med 1999;56:505-513 p 508 Webber et al asbestos contaminated drinking water; its impact on household air. Environ Res 1988; 46: 153-67

the dangers of leaking roofs and asbestos fibres contaminating the school.⁶ The warnings in this letter are relevant to all other schools where water enters the building. The letter can be seen at:

<http://www.asbestosexposureschools.co.uk/pdfnewslinks/WHSE.pdf>

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⁶ Letter HSE Glasgow. Water ingress increasing the risk for asbestos exposure. Ref 1469866/4058806/JH2 14 Mar 2008