Dear Mr Howie,

Asbestos release experiment

I enclose a copy of a further HSL internal report dealing with the airborne fibre concentration in classroom air due to inserting and removing drawing pins into asbestos insulating boards. As you no doubt remember this matter has already been looked at in some detail using a methodology originally applied by yourself based on collecting all material released at source. I know you wrote back with a number of reservations about the way the pins can be inserted and removed, the effects of airflow in the chamber and the relevance to the resuspended levels etc. The number of points you raised shows why it has been normal practice in the asbestos industry to base exposure measurement on personal sampling from air.

In this new report (the results of which were communicated to you some months ago) a simulation has been undertaken to measure the personal exposure to airborne fibres for a person carrying out a similar activity in an HSL test chamber. We have used two levels of air exchange to simulate what could be considered to be the likely upper and lower ranges of air exchange that may have been present. We also simulated the release from disturbing any floor deposits released at some later point in time.

I think this is a representative simulation, except that the much greater volume of the classroom compared to the test chamber (at least >10) would inevitably result in some further reduction in the airborne concentration than measured in the attached report.

Both experiments were relevant for measuring the personal emissions during inserting and removing a drawing pin 100 times, and were in good general agreement. Only the second experiment gave a reliable estimate of the re-suspension of fibres into the air. This was unfortunately due the test piece of AIB falling from the ceiling onto the floor before the resuspension sampling could begin in the first simulation. Clearly, this is something that did not happen in the classroom situation which we were trying to simulate and is against current HSE guidance for handling AIB ceiling tiles even during controlled removal of the material.

The short time of the activity limits the analytical sensitivity but there is little doubt the exposures are low and ~ 0.2% of the action level for someone carrying out the work activity. The airborne fibre concentration levels produced from the simulation of people moving about were too low to measure. It was estimated that the levels produced would not be significantly different from background levels in other asbestos containing buildings.

Yours sincerely,

Garry Burdett
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Dr Garry Burdett
cc: Dr M. Piney