

TECHNICAL IMPLEMENTATION OF THE NEW ASBESTOS REGULATIONS*

S. LUXON

H.M. Factory Inspectorate, Department of Employment and Productivity, Chepstow Place,
Westbourne Grove, London W.2.

THE NEW Asbestos Regulations were signed by the First Secretary of State on May 13 1969, and will therefore come into operation on May 14 1970. They are based on the concept that asbestos dust must be so controlled as to be at a level which will not be liable to cause injury to health.

For the purposes of our discussion today, I believe we should take this to be a level of 2 fibres/cm³ and 0.1 mg/m³ for chrysotile asbestos. A fibre is taken as being 5 μ or over in length with an aspect ratio of at least 3:1. This is of course the standard proposed by the British Occupational Hygiene Society (1968) and is based on time-weighted average concentrations. There is a practical limit on the time over which samples can be taken if the exercise is not to become unnecessarily cumbersome and expensive. On this basis, a sample of 4 hr duration seems a reasonable compromise. If we accept this, as a practical sampling time then the overall standard becomes 2 fibres/cm³ over this four hour sampling period.

We cannot, however, afford to ignore entirely peak concentrations which will occur during this period, and it seems reasonable to expect that a concentration of say 12 fibres/cm³ should not be exceeded during any period of 10 min, i.e. we might regard 12 fibres/cm³ as a ceiling value.

It must be remembered that we are using the fibre count not as an absolute measure of concentration but rather as a conveniently measurable parameter to indicate the total asbestos in the air. The work leading to the formulation of the BOHS Standard referred to above related to conditions in the textile industry and not enough information is yet available on the relationship between mass of asbestos and fibre counts in other industries. To further complicate the problem, it is not known what fibre sizes are biologically active and, even if this were known, appropriate elutriation (i.e. the rejection of material not biologically active) would be very difficult with a fibrous material such as asbestos. We, ourselves, are making both fibre counts and total mass determinations by X-ray diffraction analysis in industries, such as the motor industry, where degradation of the fibres may occur, resulting in a substantial change in size distribution.

HICKISH and KNIGHT (1969) have described conditions during the servicing of braking systems. The figures they have quoted are, to a large extent, reassuring in

*This paper was originally presented at a Conference on Exposure to Asbestos during Brake and Clutch Maintenance, held at Brentwood, Essex, March, 1969.