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DOCUMENT DESCRIPTION: Memo to Asbestos Study Committee RE
Recent Actions by Federal and State Governments Concerning
Asbestos

December 8, 1971

TO: MEMBERS OF ASBESTOS STUDY COMMITTEE

SUBJECT: RECENT ACTIONS BY FEDERAL AND STATE GOVERNMENTS CONCERNING ASBESTOS

There has been considerable output concerning asbestos in recent weeks. We are, therefore, sending to each member of the Asbestos Study Committee the following:

1. Illinois Pollution Control Board Regulations
 - 1.1 Memorandum of December 3, 1971 on "prosed final draft" of regulations on asbestos.
 - 1.1.1 Note that the section banning asbestos containing brake linings after 1975 has been eliminated.
 - 1.2 Chicago Tribune article of December 2, 1971 concerning asbestos.
 - 1.2.1 Nothing specific about brake lining.
2. Environmental Protection Agency Emission Standards
 - 2.1 Federal Register of December 7, 1971 spelled out the proposed standards for Asbestos, Mercury and Beryllium.
 - 2.1.1 The proposed standard for asbestos only is included in our excerpts.
 - 2.2 New York Times article of December 4, 1971 concerning the proposed emission standards.
 - 2.2.1 This can serve as a digest of the proposed standards in the Federal Register.
 - 2.2.2 Note that the asbestos standards were set with control practices (filters and traps) rather than by numerical emission values.
3. Department of Labor - Exposure to Asbestos Dust
 - 3.1 Federal Register of December 7, 1971 - Federal Supply Contracts.
 - 3.1.1 To apply the new Williams - Steiger Act standard on asbestos to Federal Supply Contracts.
 - 3.2 Federal Register of December 7, 1971 - Construction
 - 3.2.1 To apply Williams - Steiger Act standards to construction.

E. W. Drislane
Executive Secretary

Messrs: J. H. Weaver
J. C. Henning
Dr. W. Spurgeon
W. B. Reitze
J. B. Graham
E. H. Feierabend

Raybestos-Manhattan, Inc.
World Bestos Company
Bendix Corporation
Johns-Manville Corporation
Carlisle Corporation
Abex Corporation

PLAINTIFF'S
EXHIBIT

BRITISH FRICTION MATERIALS COUNCIL

SECRETARIES:
BAKER, ROOKE & CO.
CHARTERED ACCOUNTANTS
TELEPHONE: 01-242 0211

AIR MAIL

362/n/BFMC

The Society of Automotive Engineers, Inc.,
2 Pennsylvania Plaza,
New York, N.Y. 10001,
U.S.A.

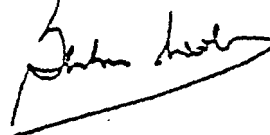
8th December, 1971.

Dear Sirs,

We have been asked by our members in the British friction materials industry in the U.K. to put their views to you on the proposed Illinois State Regulations concerning asbestos and asbestos products. We enclose herewith their comments on the friction material aspect of these draft Regulations.

We have no doubt that the American lining manufacturers will be making strong representations to the Illinois authorities for amendments to the proposals and we shall be grateful if you could make our views known as set out in this enclosure.

Yours faithfully,



Secretaries

Enc.

REF TO	DA NOTE
DEC 13 1971	99. ALDWYCH.
O. K. TO FILE BY	DATE
LONDON, WC2B 4JY	

PROPOSED ILLINOIS STATE
BAN ON ASBESTOS-BASED BRAKE LININGS

The British friction materials industry views with deep concern the proposed ban on the use of asbestos in brake linings by the State of Illinois.

It is not aware of any medical evidence that could possibly justify such legislation. On the contrary it would have the effect of withdrawing from the market products that were used to promote road safety, without producing any significant improvement in the levels of urban atmospheric pollution. It would expect any of the known alternatives to asbestos to produce general particulate pollution of a measurable amount.

1. Whatever materials are used for brake linings the current state of the art is such that the action of braking will generate products of wear. The asbestos content of conventional brake linings is almost entirely converted by the action of braking into fersterite or other amorphous, inert materials which are no longer asbestos. On the other hand, if non asbestos alternatives are used (e.g. iron powder, sintered metal, ceramics, steel wool etc.,) the resulting wear products will be released unchanged.
2. Measurements have been made of the amount of free asbestos fibre left in brake lining dust. It is an insignificant proportion of that is in any case a minute amount of total dust

The amount of free asbestos fibre that has been found in brake lining dust from vehicles, is about 1% of the total products of wear. (1). Indeed estimates vary down to 10^{-9} g/g, i.e. for each gramme of wear products only 10^{-9} grammes of free asbestos may remain.

3. We assume that the risk of contracting mesothelioma is the principal cause of environmental concern - there is clearly no possibility whatever as a result of vehicle braking, of a community risk of asbestosis or lung cancer, which are solely occupational risks. For technical reasons only chrysotile asbestos is used in the manufacture of brake linings and disc brake pads. This is not the type of asbestos with which mesothelioma has been mainly associated.
4. Measurements of chrysotile asbestos in the ambient air in an industrial centre in the United Kingdom have shown that the level must be less than 10^{-7} g/m³ because of the limitations of the method used. This means that they must be a thousand times lower than the British Government acceptable level for occupational exposure. Current investigations using a more sensitive method indicate levels of 10^{-9} to 10^{-10} g/m³, i.e. 2 or 3 orders lower still. (2).

Brake lining wear cannot therefore be a serious source of atmospheric pollution.

5. In one of the largest brake testing laboratories in the world, housing many dynamometers engaged 24 hours a day in wearing away friction materials, the average monthly asbestos count is 0.2 fibres/cc, a tenth of the British Government's occupational standard.

Footnotes

1. Nickish D.E. and Knight K.L. (1970) Annals of Occupational Hygiene Vol.13, No.1, page 20.

2. Letter to Nature attached.

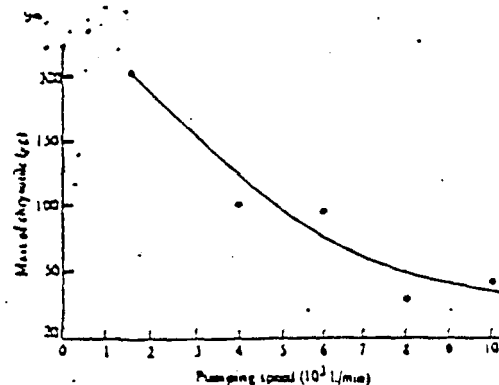


Fig. 1 Observed amounts of chrysotile in 5,000 l. of factory air, sampled at different rates.

tude assessment of asbestos in urban air, we were prepared to accept this uncertainty in the collection efficiency.

The map (Fig. 2) and Table 1 show the location of the sampling sites and the conditions in which the samples were obtained. The factory is in a hollow, and sampling site No. 2 is at the same height as the roof of the filter gallery, which is the chief air outlet from the factory. Sampling site No. 1 is about 30 feet higher than site No. 2. Sites 3 and 4 were in the gardens of houses, site 3 being about 5 km upwind of the factory and site 4 being about 300 m downwind.

All the diffraction traces (for example, Fig. 3) contained strong lines of kaolinite and quartz, probably from the local soil, which made the assessment of chrysotile difficult because the broad (001) line of kaolinite (7.18 Å) is close to the major (002) line of chrysotile (7.36 Å). Fortunately chrysotile is easily decomposed by boiling in 1 N hydrochloric acid whereas kaolinite is unaffected, so it should be possible to measure the amount of chrysotile present by subjecting the samples to acid leaching and measuring the corresponding reduction of the intensity of the composite X-ray band. The fact that this process led to no reductions in band intensity for any of the samples indicated that the amount of chrysotile present was below our detection limit.

We ought to have been able to detect 10 µg of chrysotile by itself, but clearly the presence of kaolinite may have reduced

Date (1970)	Site	Wind	Weather
April 22	1	SW moderate	broken cloud
April 24	1	SW slight	Ground haze
April 27	1	N/E moderate	Ground haze
April 29	1	SW moderate	Ground haze
May 6	1	S strong	Ground haze
May 11	1	N fresh	Ground haze
May 23	3	W light	Overcast, dull
May 28	3	W light	Overcast, dull
May 30	4	W light	Overcast, dull
May 30	4	W light	Overcast, dull
June 3	2	SW light	Overcast
June 10	2	SW slight	light haze
June 10	2	SW slight	Heat haze
October 23	1	W moderate	Broken cloud
October 23	1	W moderate	Broken cloud
October 23	1	W moderate	Broken cloud
October 28	1	N light	Broken cloud
October 28	1	N light	Broken cloud
October 28	1	N light	Broken cloud

the sensitivity. But the addition of 100 µg of chrysotile to a collected sample could easily be detected, so we can say that our samples collected from 1,000 m³ of air contained less than 100 µg of chrysotile—in other words, there was less than 0.1 of chrysotile per m³ of air. The threshold limit for occupational exposure set by the 1969 Asbestos Regulations² is 0.1 mg m

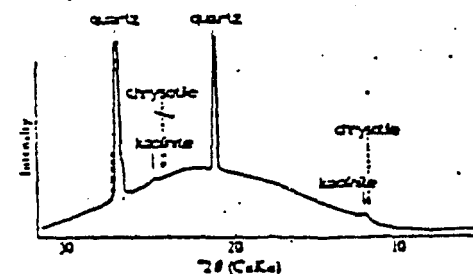


Fig. 3 X-ray diffraction pattern from a typical dust sample near the Rochdale factory.

A more sensitive method for estimating chrysotile is required and we are developing a technique based on electron microscopy. Preliminary examinations under the electron microscope of samples collected by the Lison sampler indicate that the actual chrysotile level may be a further three orders of magnitude below the X-ray detection limit (that is, about 0.1 ng).

The samples have so far been collected in the close vicinity of the Rochdale factory. It is now proposed to sample air at certain representative urban and rural locations in UK to estimate their chrysotile content.

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Received April 18; revised September 22, 1971.

¹ Cable, J. V., *Amer. Ind. Hyg. Assoc. J.*, 27, 293 (1966).
² *Standards for Asbestos Dust Concentrations for Use with the Asbestos Regulations 1969*, Technical Data Note 13 (H.M. Factory Inspectorate, 1967).

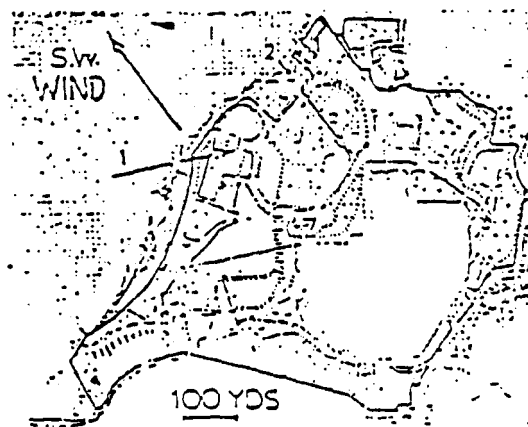


Fig. 2 Map of T.B.A. factory, Rochdale. The sampling sites are indicated by the arrows 1 and 2. Position of the chief filter gallery exhaust.