



GRADUATE SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF PITTSBURGH
PITTSBURGH, PENNSYLVANIA 15213



DEPARTMENT OF OCCUPATIONAL HEALTH

December 16, 1968

Mr. E. B. Waters, Jr.
Research Supervisor
Armstrong Cork Company
Research and Development Center
Lancaster, Pennsylvania 17604

Dear Mr. Waters:

The airborne dust samples were, as you noted, quite heavy. The dust deposit on the membrane filter was so thick, that the deposit came off during the transport. For this reason we had to resuspend the collected dust in water with a wetting agent and refilter 1/10 of this suspension onto new membrane filters. The results in the enclosed table are therefore not quite as accurate as by the direct technique.

From the hygienic standpoint the airborne concentrations are also too high. The Threshold Limit Value for Asbestos dust is 5 MPPCF. The basis for this number is still the old impinger technique with 10x bright field objective and 10x eyepiece. With this old technique fibers thinner than approximately 1μ were either not collected or not visible. The phase contrast method evaluates fibers down to a thickness of 0.3μ so that the particle and fiber count will be higher with the new more sensitive method.

I understand that these samples were only of exploratory nature taken at the point of spraying and not in the direct breathing zone of the operator and I am sure we will easily arrive at the right sampling time and flow rate for the dust samples. Please let me know if you have any questions.

Very truly yours,

Felix Stein
Research Associate

FS/cp
enclosure

SUMMARY OF PARTICLE AND FIBER COUNT FOR 1ST QY. 1968 SAMPLES

[illegible]



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DEPARTMENT OF OCCUPATIONAL HEALTH

February 14, 1969

Mr. E. B. Waters, Jr.
Research Supervisor
Armstrong Cork Co.
Lancaster, Pa. 17604

Dear Mr. Waters:

The six samples of airborne dust shipped to us on January 30 were analyzed for Particle and Fiber count. The particle count in our reports does not include the fiber count.

Results:

Sample #	Air Volume cff	Particles	Fibers MFPCF		
		MPPCF	5 μ	5-10 μ	10 μ
1	0.20	340 $\pm$ 29	27.3 $\pm$ 8.2	none	12.4 $\pm$ 5.5
2	0.40	81.8 $\pm$ 13.8	74.4 $\pm$ 9.6	21.1 $\pm$ 5.1	34.7 $\pm$ 6.6
3	0.20	323 $\pm$ 28	231 $\pm$ 24	19.8 $\pm$ 7.0	39.6 $\pm$ 9.9
4	0.20	340 $\pm$ 29	421 $\pm$ 32	42.4 $\pm$ 10.2	49.6 $\pm$ 11.1
5	0.20	372 $\pm$ 30	159 $\pm$ 20	32.2 $\pm$ 8.9	44.6 $\pm$ 10.5
6	0.15	85.7 $\pm$ 5.0	1.77 $\pm$ 0.72	1.47 $\pm$ 0.66	1.18 $\pm$ 0.59

MPPCF = Millions Particles per cubic foot of air.

MFPCF = Millions Fibers per cubic foot of air.

In your letter from January 28, 1969, you mentioned that the samples were taken near the point of spraying. This method is correct if you are interested in technical data for your spray nozzle. From the hygienic standpoint, on the other hand, where you are interested in the exposure to the workers, it is necessary to sample near the breathing zone of the operator. The concentration of dust and fibers near the mouth and nose of the worker is always much lower than at the source. Proper ventilation (local exhaust, hood, or general dilution ventilation) will reduce the exposure further or may even eliminate it totally.

I don't know the objectives of your sampling and your problems but we will be glad to assist you and answer any further questions.

Very truly yours,

Felix Stein

Felix Stein

FS/lsk

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JAC

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NOTES

Among dust studies