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Asbestos and Disease

By

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is volume.

5. Environmental Distribution



in servicing of automobile brakes air which produces a heavy cloud from brake drum. A large bundle filtered throughout the field; $\times 2,800$ h was taken during compressed air fication.

ission but very high counts mittent so that the TWA for the possible significance of d. When counts were made all fibers were shorter than one counted, if light micros- s high fraction of submicro- and III.

population at risk from this cattered through 11 Unions

Asbestos in Air

115

TABLE 5-10

Asbestos Fiber Contamination in Automobile Servicing (623)

Activity	Ranges of fiber counts (lf/ml)	
	Background	Personal
Blowing dust out of automobile brake drums	0.1-0.8	0.4-29.4
Grinding used brake linings of trucks	0.2-1.7	1.7-7.0
Bevelling new brake	0.3-0.6	26.3-72.0

(526,641), and many do not belong to unions. Informed labor and industry experts estimate somewhat over 1,000,000 workers at present.

Building Construction

As pointed out in Chapter 3, spackling and other compounds used in finishing dry wall construction frequently contain asbestos which may be released during mixing and again when the application is sanded. The concentrations of fibers given in Table 5-11 were found during a study by the Mount Sinai group of these operations in New York City (622). Here, evidently, is an operation where distance does not lend enchantment, at least for short ranges, and where innocent bystanders run the risk of high, if transient, exposures. It has also been reported that sanding the floor tiles containing asbestos can generate fibers and perhaps be held responsible for pleural calcification and mesothelioma in the finishers (533).

Neighborhood Situations

Studies conducted in the vicinity of a plant crushing taconite ore with which amphibole asbestos of the cummingtonite-grunerite series was associated showed mass concentrations of asbestos in air ranging downward from $5 \mu\text{g}/\text{m}^3$, and fiber counts from 11 ef/ml. The measurements were made by the EM methods described in the preceding chapter. About 5-10% of the fibers exceeded $5 \mu\text{m}$ in length. Concentrations were highest downwind and close to the operations. A limited number of air samples collected in Duluth indicated no significant pollution with asbestos from the usage of water for such purposes as street cleaning, lawn sprinkling, ornamental fountains, and laundry

TABLE 5-11

Concentration of Asbestos Fibers in Air (ff/ml) during Dry Wall Construction and Finishing (622)*

Operations	Number of samples	Peak fiber concentration (fibers per milliliter)	
		Mean	Range
Pole-sanding (1-1.5 m)	10	10.0	1.2-19.3
Background (2.5 m), same room	3	8.6	3.5-19.8
Background (7.5 m), adjacent room	2	4.8	0.7- 8.8
Hand-sanding (1-1.5 m)	11	5.3	1.3-16.9
Background (2.5 m), same room	2	2.3	2.1- 2.5
Background (4.5 m), adjacent room	2	4.3	1.5- 7.1
Dry mixing (1-1.5 m)	2	47.2	35.4-59.0
Background (3-6 m), same room	3	5.8	0.5-13.1
Background (5-10 m), adjacent room	2	2.6	2.1- 3.1
Sweeping floor (3-15 m)			
15 min after sweeping	1	41.4	
35 min after sweeping	1	26.4	

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operations. In another study, samples taken at distances up to one mile from asbestos spraying operations gave mass concentrations of asbestos in air downward from $375 \mu\text{g}/\text{m}^3$ (Table 5-12).

A study conducted by the California State Department of Health near an asbestos processing plant, with asbestos ore and spent ore stored in unprotected heaps on the ground (376), showed 100 ef/ml 440 ft

TABLE 5-12

Chrysotile Air Levels Near Spray Fireproofing Sites (551)*

Sampling location	Number of samples	Asbestos air level (ng/m ³)	
		Range	Average
1/8-1/4 mile	11	9-375	60
1/4-1/2 mile	6	8- 54	25
1/2-1 mile	5	3.5- 36	18

* With the kind permission of the International Agency for Research on Cancer.