

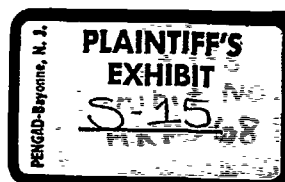
REPORT OF SURVEY OF SOUTHEAST ASBESTOS COMPANY
Charlotte, N. C.
March 21-23, 1944

An environmental survey of this plant was made to evaluate the concentration of potential industrial health contaminants in the workroom atmosphere. Several of the recent surveys conducted at this plant were made during those periods of the year when the natural ventilation resulting through open doors and windows of the working areas was good. It was felt that a survey made at a time when the doors and windows of the areas were essentially closed, might assist in a better explanation of some of the medical findings which have recently been observed in approximately 25-30% of the plant's employees. In nearly all cases, the samples were taken during this survey with the doors and windows closed.

I. RESULTS OF SURVEY

A. Asbestos Dust.

<u>Sample No.</u>	<u>Location</u>	<u>Dust Conc.</u> (MPPCF)	<u>Period of</u> <u>Sampling</u> (minutes)	<u>Remarks</u>
2289	Picker Mixer charging.	7.5	30	Operator's exposure
2290	Aisle of stock bin during truck loading.	5.9	20	General atmosphere sample.
2291	Small card room, aisle between #21 and #22 cards.	3.9	30	General atmosphere sample.
2292	Small card room, aisle between #28, #29, #34 and #35 cards.	10.3	30	General atmosphere sample.
2293	Large card room, aisle near #2 and #3 cards.	8.4	30	General atmosphere sample.
2294	Large card room, aisle near #16 and #17 cards.	2.7	30	General atmosphere sample.



<u>Sample No.</u>	<u>Location</u>	<u>Luft Conc.</u> (.PPCM)	<u>Period of</u> <u>Sampling</u> (minutes)	<u>Remarks</u>
2295	Mule spinning, between machines #7 & #8.	5.4	30	General atmosphere sample.
2296	Ring spinning, at machine #1, #2 & #3.	2.0	30	Operator's exposure.
2297	Spooling, west side of machine #2.	15.1	20	Operators' exposure.
2298	Spooling, west side of machine #1.	5.9	20	Operators' exposure.
2299	Twisting, between #12 & #13 machines.	8.0	20	Operators' exposure.
2300	Twisting, between #2 & #3 machines.	6.6	20	Operators' exposure.
2301	Willower charging operation, machine #5.	9.9	20	Operator's exposure while charging 100% asbestos stock.
2302	Dry weaving, machine #3.	51.5	10	Operator's exposure; overhead humidifiers operating.
2303	Dry weaving, machine #4.	30.1	10	Operator's exposure; overhead humidifiers operating.

B. Toluene Vapors.

Toluene is used as the solvent for the halowax yarn impregnating compound.

The results of four atmospheric samples collected for toluene vapor concentrations in the workroom atmosphere follow:

<u>Sample No.</u>	<u>Location</u>	<u>Toluene Conc.</u> (p.p.m.)	<u>Remarks</u>
2304	North end of impregnating room.	75	General atmosphere sample.
2305	Center of impregnating room.	75	General atmosphere sample.
2306	South end of impregnating room.	38	General atmosphere sample.
2307	Bucket filling operation in outer shed.	482	Operator's exposure while filling buckets from drum.

II. DISCUSSION.

Only three of the above samples which were collected for dust concentration showed values below the currently accepted permissible limit of 5.0 MPPCF (million particles per cubic foot of air.).

The excessive dust concentrations observed at both the picker mixer charging and willower charging operations were largely due to careless handling of the stock by operating personnel. More careful handling of the stock by these employees will very probably reduce the dust to safe working concentrations. If this cannot be accomplished, either more satisfactory local exhaust ventilation or the wearing of U. S. Bureau of Mines approved mechanical filter respirators by personnel at these operations will be necessary for adequate control. The practice of using the compressed air hose by employees in this and the carding department for removing dust and dirt from their skin and clothing should be discontinued in the workroom area. This practice disseminates unnecessary quantities of dust into the general work room atmosphere. If it is necessary that employees use this cleaning method, it should be done in a place isolated from the general working environment.

The wearing of the above type of respirator should be required of all employees while loading stock within the stock bin area. It was observed that one or more employees were frequently inside a stock bin while the bin was being filled with mixed stock. This very obviously exposes the individual to very excessive concentrations of dust (see previous report). It appears that some alternate operating procedure could be evolved, whereby this practice would be unnecessary, but if not, the wearing of the above recommended type of respirator by the ~~exposed~~ employee should be required.

At the time of this survey the management expressed the intention of modifying several of the machines in the preparation department, and believed that such modification would greatly aid in the reduction of dust in the carding spinning, and weaving departments due to the increased removal of fines in the early stages of preparation. This may satisfactorily decrease the dust concentrations observed in the card room to safe limits.

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The spooling and twisting operations are the chief producers of atmospheric dust in the spinning department. If, after the installation of the above equipment in the preparation department, the dust concentrations at these operations are still excessive, the installation of local exhaust ventilation at the spooling and twisting machines should be considered.

The dust concentrations found at the dry weaving operations were quite excessive. The installation of local exhaust ventilation is the only satisfactory method of controlling this atmospheric contamination. The management expressed the intention of doing this as soon as satisfactory arrangements for obtaining the necessary space at the looms could be accomplished.

The established maximum permissible limit for toluene is 200 p.p.m. (parts of toluene vapor per million parts of air). Sample #2307, representing the operator's exposure while filling buckets with the toluene solution from the stock drum in the outer shed, was considerably in excess of this. One bucket is filled approximately every 15 minutes; with approximately two minutes required for the filling operation. On this basis his weighted average daily exposure would be about 150 p.p.m. of toluene. (Assuming an exposure of 100 p.p.m. for the remaining 13 minutes of the two minute cycle. This is more probably above than below his actual exposure during this time.) Under these conditions no industrial health hazard should exist at this operation. However, in order to forego any exposure of the employee to higher concentrations of toluene than were found at the time of this survey, it is suggested that he wear a chemical cartridge type of respirator, providing protection against organic vapors, while filling the buckets.

III. SUMMARY OF RECOMMENDATIONS

1. Eliminate as much as possible careless handling of the stock at the mixing and willowing operations in the preparation department.
2. Require the wearing of U. S. Bureau of Mines approved mechanical filter type respirators by all employees engaged in truck loading operations in the stock bins.

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3. Eliminate, if possible, the necessity of employees remaining inside a stock bin during the filling of the bin with mixed stock. If this is impossible, require the wearing, by the employee, of a U. S. Bureau of Mines approved mechanical filter type respirator.

4. Eliminate the use of the compressed air hose in the general workroom areas of the preparation and card rooms for removing dust and dirt from the employees' clothes and skin.

5. Supply local exhaust ventilation to the dry weaving looms.

6. Re-evaluate the dust exposures in the plant after the installation of the new equipment in the preparation room.

7. Require the wearing of a chemical cartridge type respirator, during the filling of the buckets from the stock drum, by the operator attending the halowax impregnating tanks.

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