PLAINTIFF'S EXHIBIT

MET-291

THE GENERAL ASBESTOS AND RUBBER DIVISION

of

RAYBESTOS-MANHATTAN, INC.

North Charleston, S.C.

1934

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MAX GLAUBACH, C.S.R.
CERTIFIED IN
NEW JERSEY & NEW YORK

Exhibit No. P. Peirson 13 For Id. Only

The dust survey included in this report is supplementary to the survey made in January, 1930 and was conducted to determine the extent of dust removal accomplished by the installation of new exhaust equipment and redesign of old exhaust equipment.

The number of buildings, the processes and arrangement of machinery are the same as at the time of the previous survey.

The exhaust systems of the cards have been redesigned to cover the machines more completely. In an experimental case one card was covered as completely as possible. This machine was enclosed in muslin and an air sample was taken inside the enclosure and two general air samples were taken in the card room proper at the same time. The first set of samples was taken before the conveyors from the preparation room began to bring the fibre to the bins in the card room. A second set of air samples was taken after the conveyors had been carrying fibre to the bins for more than an hour.

An exhaust system and revolving brush are in use for the inspection of woven cloth in the weave room. This work was formerly done by hand brushing. The loose fibre is brushed from the cloth in order that any flaws could be noticed and removed.

Exhibit H

An air sample was taken at the table and two general air samples were taken in the weave room at the same time - one set was taken with both the revolving brush and exhaust fan running and one set with the revolving brush operating but without the exhaust fan. One set was taken with the workmen brushing the cloth by hand, the method used before the exhaust system and revolving brush were installed.

The inspection table was enclosed with beaver board and a series of samples was taken both inside the enclosure and outside.

The following tables indicate the analysis of air samples taken at representative points in the different departments. Attention is called to the fact that the previous survey was made in January and this survey in July.

Particle size measurements were made of the dust by a direct projection method. The results are tabulated and appear in the graphs attached at the rear of the report. It will be noted that from 92 to 98.5% of the particles are less than 10 microns in greatest diameter.

A detailed discussion of the disease asbestosis and a correlation of the X-ray findings are reserved for the general report.

PREPARATION ROOM

Lo No.	Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu.ft. air sampled	Type of Dust	Remarks
	At shaker #1 near open doors	7/9/34	32.6	1.9	1.8	Asbestos	One man working at two shakers Africas C & G
2	At shaker #4	"	26.7	8.2	7.9	"	Man uses hands to put asbestos from bag into shaker and from shaker into truck
3	At end of fibre shaker screen	"	48.9	2.6	2.5	"	Separating long fibre from short fibre
4	At feeding end of Garnet machine	"	34.2	1.2	1.1	"	Waste yarn put onto conveyor by one man
	At fly shaker	7/10/34	29.1	1.5	1.4	"	One man
6	At vertical fibre opener	"	27.2	0.87	0.83	"	Upper end, one man
7	Floor mixing of cotton and asbestos	"	39.5	7.8	7.6	Asbestos and cotton	Two men mixing; one forming mixture into picker #2
8	At shaker screen, loading hand trucks with asbestos from opener	"	31.3	8.1	7.7	Asbestos	One man; asbestos drops off end of shaker screen into truck.
9	At feeder end of cotton fibre opener	"	30.1	1.3	1.3	Cotton	One man
10	At conveyor end of picker #2	"	25.9	1.9	1.8	Cotton and asbestos	Material drops from one belt to another, all mixed in

The average dust count of the Preparation Room is 3.5 million particles, which is identical with the average found in January, 1930.

CARD ROOM

Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu. ft. air sampled	Type of Dust	Remarks
Card room - center aisle between cards #2 and 21	7/11/34	30.7	5.5	5.2	Asbestos	No humidifiers
General air - card room center aisle, west of bins	"	48.4	15.9	15.2	"	Between cards #10 and #29; belt broken on fan
General air - card room, center aisle, east of bins	"	28.8	13.2	12.6	"	Between cards #35 and #16; belt broken on fan
General air - wick, rope and twisted card room	"	31.6	2.7	2.6	"	
General air - west of bins - card room; conveyors from preparation room not running	7/12/34	35.7	1.8	1.7	"	Same time as #38 and #39.
Inside muslin enclosure, card	"	28.2	1.5	1.4	"	Windows closed; same time as #37 and #39, one man
General air - east of bins - card room	"	32.6	2.8	2.7	"	Same time as #37 and #38
General air - west of bins, card room; conveyors from preparation room running	"	30.6	4.5	4.3	"	Same time as #41 and #42
Inside enclosure - conveyors from preparation room running	"	28.2	5.0	4.6	"	One man, same time as #40 and #42
General air - east of bins, card room	"	30.4	4.1	3.9	"	Same time as #40 and #41

General air samples - average 3.5 on samples 27, 30, 37, 39, 40 and 42. The average for the survey of January 1930 was 2.6 million particles per cubic foot.

* Not included in the average

SPINNING DEPARTMENT

Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu. ft. air sampled	Type of Dust	Remarks
Bldg. #5, general air, braiders	7/10/34	29.4	1.1	1.0	Asbestos and graphite	Two men making stock for ring presses; graphite and fish oil
General air, ring frame spinning	"	32.3	0.99	0.94	Asbestos	Two women - 4 men
General air - twisters	"	30.9	2.3	2.2	"	Twisting yarn and brass
General air - spoolers	"	27.9	0.93	0.89	"	Four women, spooling yarn from ring frame near windows on north side
General air - spoolers	"	30.6	8.1	7.7	"	Ten women, spooling yarn from mule spinners at partition wall
General air - mule spinning	"	30.3	2.5	2.4	"	In aisle between #3 and #4 - #9 and #10 - mules
General air - mule spinning	"	30.4	1.3	1.3	"	In aisle between #9 and #10 - #15 and #16 - mules
General air Bldg. #5 braiders	"	33.5	1.6	1.6	"	Two women - two men
Bldg. #5 between two ring presses	"	23.4	2.1	2.0	Asbestos and graphite	Two men forming small-sized packing

Average general air samples #14 to 19 inclusive, spinning - 2.68 million particles per cubic foot air, which is higher than average of .6 million found in survey of January 1933. This is accounted for by fact that at time of previous survey more mule spinning and less frame spinning was done, i.e., ring frame spinning and twisting may be greater dust producers than mule spinning. The possibility of dust from the collectors on top of the machine shop and adjacent to this department being blown into the mule spinning should not be overlooked.