

NICOLET INDUSTRIES, INC.

EXECUTIVE OFFICES
WISSAHICKON AVENUE
AMBLER, PENNSYLVANIA 19002
215-646-4000
TELEX 846-406

April 4, 1973

Westinghouse Electric Co.
Hampton, S. C. 29924

Att: Mr. Aubry Goettee

Dear Mr. Goettee:

Attached is our report giving the results of the air sampling for airborne asbestos fibers in the Decorative Mircarta Division on March 22, 1973. The report also gives an explanation of the terminology used in this letter.

The results for two of the samples, WH-10 and WH-19 are slightly different from the values I gave you by telephone last week. These samples had the highest values for fibers per c.c. in the division, and to confirm the analysis and reduce the spread of the 95% Confidence Limits, we counted an additional 100 fields for each sample. The new values are based on the total count for the 200 fields.

Of the three locations sampled, the lowest concentrations of airborne asbestos were found at the treating line. Since this line can run continuously on asbestos paper for eight hours, we're mainly concerned with the eight-hour time-weighted average (TWA) limit of five fibers per c.c. The test results indicate you have no problem in this area; the two samples analyzed were both less than 0.5 fibers per c.c. and the samples which were not analyzed appeared to be even lower.

Since the Porter Saw operates on asbestos for short periods of less than one hour, we're mainly concerned with the Ceiling limit of ten fibers per c.c. For this short time interval, the eight-hour TWA will not exceed five fibers per c.c. unless the Ceiling limit is substantially exceeded or unless the operator works with asbestos on another job the same day. Three of the results for the Porter Saw were less than one fiber per c.c. The fourth sample taken with the monitor attached to J. R. Rowe, WH-10, had 3.6 fibers per c.c. I was surprised that this sample did not have a higher result than it did because a visible cloud of dust was coming from the saw and moved towards Rowe's side. In removing the cut strips from the saw, Rowe leaned over the saw table into the same place where the dust cloud had been.

A possible explanation is that most of the visible dust is not fine enough to become airborne and falls to the floor by gravity. This explanation is supported by the fact that a monitor at the end of the saw table about two feet behind Rowe, sample WH-14, had only 0.65 fibers per c.c. If much of the dust became airborne, this monitor should have given a higher result.

07008493

Westinghouse Electric Co.

April 4, 1973

Despite the fact that the Ceiling limit of ten fibers per c.c. was not exceeded, I recommend that the dust collection system on the Porter Saw be studied to determine if it can be improved to minimize the amount of dust discharged.

The double trim saw and sander also operates on asbestos for short periods of less than one hour so again we're mainly concerned with the Ceiling limit of ten fibers per c.c. The result for the sample collected with the monitor attached to Ferrel Moore, WH-16, was highest at 1.9 fibers per c.c. I attribute this to two factors: one, before he feeds the sheets into the saw, he strips a spacing film from the sheet which may release asbestos fibers into the air, and two, there is considerably less air circulation at his work station than there is at the other two work stations.

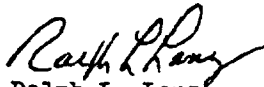
Sample WH-19 was collected on the aisle side of the sander at a point away from any of the work stations but where visible dust was being discharged into the air. It showed a value of 3.6 fibers per c.c., higher than the results for any of the work stations. I recommend that an exhaust duct be located at this point to assure that the asbestos fibers do not become airborne.

There is no indication that either the TWA or Ceiling limits were being exceeded at any of the points sampled when the samples were collected.

If you, or anyone else at Hampton have any questions concerning the report itself, please call me.

Enclosed is our invoice covering this service.

Sincerely,



Ralph L. Lanz
Technical Administrator

RLL/snl

Encl.

cc: Mr. Aubry Goette (2)

07008494



ICOLET INDUSTRIES INC.

Wissahickon Ave.

Ambler, Pa. 19002

LABORATORY TEST REPORT

Technical Service Dept.

Report on
Measurement of Airborne Asbestos Fibers
by the
Membrane Filter Method
Decorative Micarta Division
Westinghouse Electric Company
Hampton, S. C.

This report covers the sampling and analysis of the air at various locations in the Decorative Micarta Division of Westinghouse Electric Co., Hampton, S. C. The sampling was done on March 22, 1973.

OSHA Procedure:

The unit of measurement for airborne asbestos that is used by OSHA is "the number of fibers longer than five microns per cubic centimeter of air", or briefly, fibers per c.c. To be counted as a fiber, a particle must not only be longer than five microns but must be at least three times as long as its maximum diameter. Five microns are about 1/5000".

In sampling, a measured volume of air is drawn through a membrane filter which catches all dust particles. The filter is taken to the laboratory, a portion of the filter is mounted on a microscope slide and examined at 440X. The number of fibers longer than five microns in a measured area of the microscope field is counted and this is repeated for 100 different areas or until 100 fibers are counted. The fibers per c.c. can then be calculated.

Two types of samples may be taken: a "personal" sample for which the monitor is attached near the breathing zone of an individual who then performs his usual job functions or an "area" sample for which the monitor is placed in a fixed location to sample the air at that point.

The present OSHA requirements read "The eight-hour time-weighted average (TWA) airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed five fibers, longer than five microns, per cubic centimeter of air". This means that an employee could be exposed to air containing seven fibers per c.c. for four hours and two fibers per c.c. for four hours and still meet the requirement. $TWA = (4 \times 7 + 4 \times 2) / 8 = (28 + 8) / 8 = 36 / 8 = 4.5$ fibers per c.c. Beginning July 1, 1976, the maximum TWA is reduced to two fibers per c.c.

OSHA also requires that "no employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of ten fibers, longer than five microns, per cubic centimeter of air."

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Westinghouse Electric Co.
Decorative Micarta Division

April 4, 1973

Sampling:

On March 22, 1973, 21 samples were collected and of these, ten were analyzed at the Nicolet Laboratories, Ambler, Pa. Three different locations were sampled: the treater, the Porter Saw, and the double-trim saw and sander. Of these three locations, TWA samples could be taken only for the treater operation; at the other two locations, the operations covered such a short time period that sampling times were not long enough for TWA samples to be taken and "Ceiling" samples were collected.

Results:

Attached are copies of all the original data sheets showing information taken at the time of sampling and the laboratory analysis of those samples which were selected for analysis. In addition to the calculated value for fibers per c.c., the 95% Confidence Limits are given. These are statistically calculated from the data and their significance is that one can state with the assurance of being right 95 times out of 100 that "the true concentration of fibers per c.c. at the time of test was within this range."

A table showing a summary of the results is attached.

At the treater, a total of eight samples were collected; four were short-time "Ceiling" tests and were not used because there were too few fibers on the filter. Three TWA samples were taken at the roll unwinder, WH-1, WH-2, and WH-3; only WH-3 was analyzed and a concentration of only 0.08 fibers per c.c. was found. Samples WH-1 and WH-2 has no more fibers than WH-3 and were not analyzed. There is no indication that there is a significant concentration of airborne asbestos fibers in the air around the unwinder.

Sample WH-4 was taken near the sheeter at the finishing end of the treater. While there is no full-time operator at this location, the sample was taken to determine if the sheeter was releasing significant amounts of asbestos fibers into the air. The result found was 0.24 fibers per c.c. which is considered low.

Seven samples were taken at the Porter Saw. Three were short-time samples and were not analyzed because the longer time samples could be analyzed. Of the four samples analyzed, two were collected on the operators, WH-10 and WH-13 and two were collected at the sides of the saw WH-11 and WH-14.

There was no significant difference between the samples from the two sides of the saw; WH-11 had 0.99 fibers per c.c. and WH-14 had 0.65 fibers per c.c. There was a significant difference between the samples for the two operators; WH-10 on J. R. Rowe had 3.6 fibers per c.c. and WH-13 on T. Skinner had 0.55 fibers per c.c. Because of the higher count on J. R. Rowe, a second count of 100 fields was made on WH-10 which confirmed the original data. As noted on the original data sheet, it was observed at the time of sampling that the saw released visible dust on the side away from the aisle where J. R. Rowe was working.

There is no indication that the Ceiling limit of ten fibers per c.c. was being exceeded at the time of test and, since this operation usually is done for less than one hour a day, the eight-hour TWA limit of five fibers per c.c. would not be exceeded.

Six samples were taken at the double-trim saw and sander. Two were for

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Westinghouse Electric Co.
Decorative Micarta Division

April 4, 1973

very short intervals and were not analyzed. WH-16 was attached to Ferrel Moore who fed rough sheets into the saw. This sample gave 1.9 fibers per c.c. and was the highest found for the three workers on this equipment. The airborne asbestos probably came from abrasion as the rough sheets were slid over one another.

Sample WH-17 was taken on W. Williams who separates the trimmed sheets and feeds them into the sander. Visible dust was observed at this operation; however, a fan behind Williams blew the dust away from him and into an exhaust system. WH-17 gave a result of 0.74 fibers per c.c.

Sample WH-18 was taken on J. Glotley who stacks sanded sheets. His position is some distance from the sander and the result was 0.43 fibers per c.c., the lowest of the three workers.

Visible dust was noted coming from the aisle side of the sander and sample WH-19 was collected near this point; it showed 3.6 fibers per c.c. It was probably no higher because of the fan behind Williams and the exhaust system which caused air circulation away from the monitor. A second count of 100 fields was made on this sample which confirmed the original data.

There is no indication that the Ceiling Limit of ten fibers per c.c. was being exceeded for any of the operators at the time of test. Since this operation usually requires less than one hour a day, the eight-hour TWA limit of five fibers per c.c. would not be exceeded.

Conclusions:

The results give no evidence that either the Ceiling Limit of ten fibers per c.c. or the eight-hour TWA limit of fibers per c.c. were being exceeded at the time of test for any of the persons or areas which were sampled in the Decorative Micarta Division.

Nicolet Industries, Inc.

Ralph L. Lanz

Ralph L. Lanz
Technical Administrator

RLL/snl
4/3/73

07008497

Table of Results
Westinghouse Electric Co., Hampton, S. C.
Decorative Micarta Division

Sample No.	Type Sample	Sampling Time, Min.	Equip.	Location of Monitor	Fibers/c.c.	95% Confidence Limits
WH-1	TWA Area	119	Treater	Left side of unwinder facing treater 3 feet above floor.	<.20	Note 2
WH-2	TWA Personal	120	Treater	Attached to J. Padgett who did general work in area of treater.	<.20	Note 2
WH-3	TWA Area	119	Treater	Right side of unwinder facing treater 3 feet above floor.	.08	.05 - .20
WH-4	TWA Area	95	Treater	Near sheeter on left side about 5 feet above floor.	.24	.00 - .48
WH-5	Ceiling Area	30	Treater	Same as sample WH-1.	Note 1	
WH-6	Ceiling Personal	30	Treater	Same as sample WH-2.	Note 1	
WH-7	Ceiling Area	30	Treater	Same as sample WH-3.	Note 1	
WH-8	Ceiling Area	30	Treater	Same as sample WH-4.	Note 1	
WH-9	Ceiling Personal	11	Porter Saw	Attached to Tommy Skinner who feeds sheets into saw and removes strips - aisle side.	Note 1	
WH-10	Ceiling Personal	28	Porter Saw	Attached to J. R. Rowe who feeds sheets into saw and removes strips --far side of saw.	3.6	2.4 - 4.9
WH-11	Ceiling Area	39	Porter Saw	Aisle side of Porter Saw--30 inches from floor.	.99	.22 - 1.8
WH-12	Ceiling Area	10	Porter Saw	Far side of Porter Saw--30 inches from floor.	Note 1	

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<u>Sample No.</u>	<u>Type Sample</u>	<u>Sampling Time, Min.</u>	<u>Equip.</u>	<u>Location of Monitor</u>	<u>Fibers/c.c.</u>	<u>95% Confidence Limits</u>
WH-13	Ceiling Personal	29	Porter Saw	Same as WH-9.	.55	.00 - 1.2
WH-14	Ceiling Area	28	Porter Saw	Same as WH-12.	.65	.00 - 1.4
WH-15	Ceiling Personal	11	Porter Saw	Same as WH-10.	Note 1	
WH-16	Ceiling Personal	21.5	Saw & Sander	Attached to Ferrel Moore who feeds large sheets into saw.	1.9	.47 - 3.4
WH-17	Ceiling Personal	21.5	Saw & Sander	Attached to Willie Williams who feeds saw cut sheets into sander.	0.74	.00 - 1.6
WH-18	Ceiling Personal	16	Saw & Sander	Attached to James Glatley who stacks sanded sheets.	0.43	.00 - 1.2
WH-19	Ceiling Area	15.5	Saw & Sander	Aisle side of sander 4 feet above floor.	3.6	1.9 - 5.2
WH-20	Ceiling Personal	4.5	Saw & Sander	Same as WH-18.	Note 1	
WH-21	Ceiling Area	4	Saw & Sander	Same as WH-19.	Note 1	

Note 1: These tests were all short-sampling-time duplications of tests with longer sampling times. In every case the longer sample time filters could be analyzed so these were not used.

Note 2: These filters had some asbestos fibers but less than the filter which was analyzed for this equipment. Concentration of asbestos fibers in the air was therefore less than the upper 95% Confidence Limit for the filter which was analyzed.

07008500

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-2

PLANT: Westinghouse-Uniontown DEPARTMENT: Treating 91 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Trenter Unwinder PRODUCT: M 2118 asbestos paper

JOB TITLE: Operator OPERATORS NAME OR NO.: J. Padgett

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: General work in area of
unwinder

RESPIRATOR WORN? No

TYPE SAMPLE: PERSONAL: ✓ AREA: _____ CEILING: _____ TWA: ✓ SAMPLED BY: RRR

TIME FINISHED: 11:12
TIME STARTED: 9:12
ELAPSED TIME MIN: 120

PUMP NO: 4
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED LITERS: 180

REMARKS: _____

SLIDE PREPARED: DATE: 3-22-73 BY: J.M. SLIDE COUNTED: DATE: 3-22-73 BY: J.M.

REMARKS: _____

FIBERS > 5 MICRONS

0				
0				
0				
0				
0				
0				
1				
0				
0				
0				
0				
0				
0				
0				
0				
0				
0				
0				
0				
0				
0				

TOTAL FIBERS _____
TOTAL FIELDS _____
AV. FIBERS/ FIELD _____
FIBERS/cc. _____

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS _____

07008501

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. V. 4-3

PLANT: Westinghouse Lamp DEPARTMENT: Treating 91 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Traction Unwinder PRODUCT: M 2118 Asbestos Paper

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: AREA: ✓ CEILING: TWA: ✓ SAMPLED BY: RYE

TIME FINISHED: 11:14
TIME STARTED: 9:15
ELAPSED TIME MIN: 119

PUMP NO: 6
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED LITERS: 178.5

REMARKS: Right side of unwinder facing tractor - 3' above floor

SLIDE PREPARED: DATE: 3 30.73 BY: LOM SLIDE COUNTED: DATE: 5 20.75 BY: LOM

REMARKS:

FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS 4
TOTAL FIELDS 100
AV. FIBERS/ FIELD _____
FIBERS/cc. 400

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by
engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS (-).05 - .20

07008502

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-4

PLANT: Westinghouse - Napton DEPARTMENT: Treating 91 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Sheeting PRODUCT: Saturated asbestos paper

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: _____ AREA: ✓ CEILING: _____ TWA: ✓ SAMPLED BY: RXX

TIME FINISHED: 11:19
TIME STARTED: 9:44
ELAPSED TIME MIN: 95

PUMP NO: 5
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED LITERS: 142.5

REMARKS: 5' from floor near cutter on left side

SLIDE PREPARED: DATE: 3-27-73 BY: JAM SLIDE COUNTED: DATE: 3-27-73 BY: JAM

REMARKS: _____

FIBERS > 5 MICRONS

0	0	0	1	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	0
1	0	0	0	0
0	0	0	0	0
0	0	1	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	1
0	1	0	0	0
0	0	0	0	1
0	0	0	0	0
1	0	0	0	0
0	0	0	0	0
0	0	0	1	0
0	0	0	0	0
0	1	0	0	0
0	1	0	0	0

TOTAL FIBERS 10
TOTAL FIELDS 100
AV. FIBERS/ FIELD .10
FIBERS/cc. .24

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS (-.00 - .48)

07008503

ASBESTOS : 15%R COUNT

SAMPLE NO. WH-5

PLANT: Wes-Inchrose, Nandini DEPARTMENT: Treating 91 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Unwinder PRODUCT: M 2118 Asb. Paper

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: _____ AREA: ☒ CEILING: _____ TWA: ☒ SAMPLED BY: RLK

TIME FINISHED: 11:45

TIME STARTED: 11:15

ELAPSED TIME. MIN: 30

PUMP NO: 3

RATE, LITERS/MIN: 1.5

VOLUME SAMPLED LITERS: 45

REMARKS: SAME LOCATION AS WM-1 - Left side of unwinder facing trans

SLIDE PREPARED: DATE: 3-20-73 BY: JGT SLIDE COUNTED: DATE: _____ BY: _____

REMARKS:

FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS _____
TOTAL FIELDS _____
AV. FIBERS/ FIELD _____
FIBERS/cc. _____

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS

07008504

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-6

PLANT: Westinghouse - 416456 DEPARTMENT: Treading 91 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Treater. Unwinder PRODUCT: M 2118 asbestos paper

JOB TITLE: Operator OPERATORS NAME OR NO.: J. Padgett

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: General work in area of
Chawinder

RESPIRATOR WORN? *N.*

TYPE SAMPLE: PERSONAL: ☒ AREA: ☐ CEILING: ☒ TWA: ☐ SAMPLED BY: RYL

TIME FINISHED: 11:42
TIME STARTED: 11:12
ELAPSED TIME MIN: 30

PUMP NO: 4
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED LITERS: 45

REMARKS: SAME LOCATION AS WH-2

SLIDE PREPARED: DATE: 3-24-73 BY: SJM SLIDE COUNTED: DATE: _____ BY: _____

REMARKS:

FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS _____
TOTAL FIELDS _____
AV. FIBERS/ FIELD _____
FIBERS/cc. _____

The Test result shown herein requires the following to comply with CSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS

07008505

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. W 41-7

PLANT: Woolinghouse - Memphis DEPARTMENT: Treating 91 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Treater-Unwinder PRODUCT: M 2118 Asbestos Paper

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: AREA: ☒ CEILING: ☒ TWA: _____ SAMPLED BY: EX

TIME FINISHED: 11:44
TIME STARTED: 11:14
ELAPSED TIME-MIN: 30

PUMP NO: 6
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED, LITERS: 45

REMARKS: SAME LOCATION AS SW-3 Right side of unwinder facing
trailer - 3' above floor

SLIDE PREPARED: DATE: 3-27-73 BY: Sam SLIDE COUNTED: DATE: BY:

REMARKS:

FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS _____
TOTAL FIELDS _____
AV. FIBERS/ FIELD _____
FIBERS/cc. _____

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS

07008506

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WL-8

PLANT: Westhouse Noddy DEPARTMENT: Treeing 91 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Sheeting PRODUCT: Saturated asbestos paper

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: AREA: ☒ CEILING: ☒ TWA: _____ SAMPLED BY: RL

TIME FINISHED: 11:49
TIME STARTED: 11:19
ELAPSED TIME-MIN: 30

PUMP NO: 5
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED LITERS: 45

REMARKS: SAME LOCATION AS WH-4 6' above floor near cutter on left side

SLIDE PREPARED: DATE: 3-27-73 BY: LAM SLIDE COUNTED: DATE: BY:

REMARKS:

FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS _____
TOTAL FIELDS _____
AV. FIBERS/ FIELD _____
FIBERS/cc. _____

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS

07008507

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-9

PLANT: Westinghouse - Nampa DEPARTMENT: 97 DATE SAMPLED: 3/23/73

EQUIPMENT OPERATED: Porter Saw PRODUCT: Asbestos Micarta

JOB TITLE: Operator OPERATORS NAME OR NO.: Tammy Skinner

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: Feeds large sheets into saw
and removes cut strips - 1 cut every 16 seconds.

RESPIRATOR WORN? N.

TYPE SAMPLE: PERSONAL: ☒ AREA: _____ CEILING: ☒ TWA: _____ SAMPLED BY: 22

TIME FINISHED: 1:35:30
TIME STARTED: 1:24:30
ELAPSED TIME MIN: 11

PUMP NO: 5
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED LITERS: 16.5

REMARKS: works on aisle side of saw

SLIDE PREPARED: DATE: 3-28-73 BY: LM SLIDE COUNTED: DATE: 3-28-73 BY: LM

REMARKS:

FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS _____
TOTAL FIELDS _____
AV. FIBERS/ FIELD _____
FIBERS/cc. _____

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS

07008508

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH 10

PLANT: Westinghouse Lamp DEPARTMENT: 97 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Porter Saw PRODUCT: Asbestos Micarta

JOB TITLE: Operator OPERATORS NAME OR NO.: J.R. Rowe

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: Feeds large sheets into saw and removes cut strips

RESPIRATOR WORN? _____

TYPE SAMPLE: PERSONAL: ☒ AREA: _____ CEILING: ☒ TWA: ☒ SAMPLED BY: RR

TIME FINISHED: 1:53:30

PUMP NO: 3

TIME STARTED: 1:23:30

RATE, LITERS/MIN: 1.5

ELAPSED TIME MIN: 28

VOLUME SAMPLED LITERS: 42

REMARKS: saw throws dust toward this side - works on far side of saw

SLIDE PREPARED: DATE: 3-29-73 BY: JRM SLIDE COUNTED: DATE: 3-29-73 BY: JRM

REMARKS: _____

25/50 FIBERS > 5 MICRONS					19/50
0	1	1	1	0	0
1	1	1	0	0	0
1	0	2	0	0	0
0	0	0	0	1	1
0	0	0	0	0	0
1	0	0	0	0	0
2	1	1	2	1	1
1	1	0	0	1	1
3	1	1	0	0	0
1	0	1	0	4	4
0	0	0	0	0	0
0	1	0	0	0	0
2	0	0	1	1	1
1	0	0	1	0	0
0	0	0	0	2	2
0	0	0	0	1	1
0	0	1	0	0	0
0	0	0	1	0	0
0	1	1	0	0	0
1	1	0	1	0	0

TOTAL FIBERS 44
TOTAL FIELDS 150
AV. FIBERS/FIELD .44
FIBERS/cc. 3.6

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS 1.9 - 5.3

07008509

NICOLET INDUSTRIES, INC.
AMBLER, PA.

Measurement of Airborne Asbestos Fiber

Sample No. WH-10

PLANT: 2ND COUNT DEPARTMENT: _____ DATE SAMPLED: _____

EQUIPMENT OPERATED: _____ PRODUCT: _____

JOB TITLE: _____ OPERATOR'S NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN? _____
 TYPE SAMPLE: PERSONAL: _____ AREA: _____ CEILING: _____ TWA: _____ SAMPLED BY: _____

TIME FINISHED: _____ PUMP NO: _____

TIME STARTED: _____ RATE, LITERS/MIN: _____

ELAPSED TIME MIN: _____ VOLUME SAMPLED LITERS: 42

REMARKS: _____

SLIDE PREPARED: DATE _____ BY: _____ SLIDE COUNTED: DATE 4-2-73 BY: JAM

REMARKS: _____

FIBERS > 5 MICRONS

3	1	1	1	1
0	0	0	0	0
1	0	0	0	0
0	0	1	0	2
1	1	0	1	0
0	0	0	0	1
1	2	0	1	0
0	2	0	0	0
0	1	1	0	0
1	1	0	2	0
0	0	0	0	0
0	0	0	0	0
0	2	0	1	0
0	0	1	3	0
0	1	0	1	0
1	1	0	1	1
0	0	0	1	0
0	0	0	0	0
2	0	1	0	0
0	0	0	1	0

TOTAL FIBERS 45 / 89

TOTAL FIELDS 100 / 200

AV. FIBERS/FIELD .45 / .45

FIBERS/cc. 3.7 / 3.6

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

0700B510

95% CONFIDENCE LIMITS 1.9-5.4 / 2.4-4.9

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. W/E-11

PLANT: Nestlinghouse Hamden DEPARTMENT: 97 DATE SAMPLED: 3/12/73

EQUIPMENT OPERATED: Porter Saw PRODUCT: Asbestos Micarta

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: _____ AREA: ✓ CEILING: ✓ TWA: ✓ SAMPLED BY: RAM

TIME FINISHED: 1:25:30 2:04:30

PUMP NO: 6

TIME STARTED: 1:25:30

RATE, LITERS/MIN: 1.5

ELAPSED TIME MIN: 39

VOLUME SAMPLED LITERS: 59.5

REMARKS: aisle side of machine 30" from floor

SLIDE PREPARED: DATE: 3-28-73 BY: JAM SLIDE COUNTED: DATE: 3-28-73 BY: JAM

REMARKS: _____

14/50 3/50

FIBERS > 5 MICRONS

3	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	1	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	0
3	0	0	0	0
1	0	0	0	0
2	0	0	0	0
0	0	0	2	0
0	0	0	0	0
1	1	0	0	0
0	0	0	0	0

TOTAL FIBERS 17
TOTAL FIELDS 100
AV. FIBERS/ FIELD .17
FIBERS/cc. .99

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS .22 - 1.8

07008511

07008512

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-13

PLANT: Westinghouse Lamp Co DEPARTMENT: 97 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Porter Saw PRODUCT: Asbestos Mica

JOB TITLE: Operator OPERATORS NAME OR NO.: Tony Sknier

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: Feeds large sheets into saw and removes cut strips

RESPIRATOR WORN? _____

TYPE SAMPLE: PERSONAL: ☒ AREA: _____ CEILING: _____ TWA: ☒ SAMPLED BY: AK

TIME FINISHED: 2:04:30
TIME STARTED: 1:35:30
ELAPSED TIME MIN: 29

PUMP NO: 5
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED LITERS: 43.5

REMARKS: SAME AS WH-9

SLIDE PREPARED: DATE: 3-28-73 BY: JAM SLIDE COUNTED: DATE: 3-28-73 BY: JAM

REMARKS: _____

250
FIBERS > 5 MICRONS

0	0	0	1	0
0	0	0	1	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	0
0	1	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	1
0	0	0	0	0
0	0	1	0	0
0	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

TOTAL FIBERS 7
TOTAL FIELDS 100
AV. FIBERS/FIELD .07
FIBERS/cc. .55

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS .0 1.2
67-12 1-21

07008513

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. W 14-14.

PLANT: Westinghouse Hanford DEPARTMENT: 97 DATE SAMPLED: 3/27/73

EQUIPMENT OPERATED: Porter Sams PRODUCT: Asbestos Micarta

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: AREA: ✓ CEILING: TWA: ✓ SAMPLED BY: *RL*

TIME FINISHED: 2:04:30

TIME STARTED: 1:36:30

ELAPSED TIME. MIN: 28

PUMP NO: 4

RATE, LITERS/MIN: 1.5

VOLUME SAMPLED LITERS: 42

REMARKS: SAME AS WH-12 for side of saw - 30" from floor
saw throws dust toward this side

SLIDE PREPARED: DATE: 3-28-73 BY: lom SLIDE COUNTED: DATE: 3-28-73 BY: lom

REMARKS:

6:50
FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS 8

TOTAL FIELDS 150

AV. FIBERS / FIELD

FIBERS/cc. 0.65

The Test result shown herein requires the following to comply with CSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS (~~7.89~~ - 1.4

07008514

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-15:

PLANT: Westinghouse - Lamp DEPARTMENT: 9) DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Porter Saw PRODUCT: Asbestos Micartz

JOB TITLE: Operator OPERATORS NAME OR NO.: J.R. Rove

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: Feeds large sheets into saw and
removes cut strips

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: ☒ AREA: _____ CEILING: ☒ TWA: _____ SAMPLED BY: QZ

TIME FINISHED: 2:04:30
TIME STARTED: 11:33:30
ELAPSED TIME MIN: 11

PUMP NO: 3
RATE, LITERS/MIN: 1.5
VOLUME SAMPLED LITERS: 16.5

REMARKS: Same as WN-10 works on far side of saw. Saw throws dust towards this side

SLIDE PREPARED: DATE: 3-28-73 BY: lom SLIDE COUNTED: DATE: _____ BY: _____

REMARKS:

FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS _____
TOTAL FIELDS _____
AV. FIBERS/ FIELD _____
FIBERS/cc. _____

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS

07008515

NICCLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-16

PLANT: Westinghouse - Memphis DEPARTMENT: 93

DATE SAMPLED: 3/12/73

EQUIPMENT OPERATED: Double drum sand sander

PRODUCT: Asbestos Micorls

JOB TITLE: saw operator

OPERATORS NAME OR NO.: Ferre Moore

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: Feeds rough sheets into saws

RESPIRATOR WORN? No

TYPE SAMPLE: PERSONAL: ☒

AREA: _____

CEILING: _____

TWA: _____

SAMPLED BY: ELC

TIME FINISHED: 4:08

TIME STARTED: 3:46:30

ELAPSED TIME MIN: 21.5

PUMP NO: 3

RATE, LITERS/MIN: 15

VOLUME SAMPLED LITERS: 32.2

REMARKS: _____

SLIDE PREPARED: DATE: 3-28-73 BY: JRM

SLIDE COUNTED: DATE: 3-28-73 BY: JRM

REMARKS: _____

8/50
FIBERS > 5 MICRONS

0	0	1	6	0
1	0	0	0	0
0	0	0	0	0
0	0	2	0	0
0	0	0	0	0
0	0	0	2	0
0	0	0	0	1
0	1	0	0	0
0	0	1	0	1
0	0	0	0	0
0	1	0	0	0
0	0	0	1	0
0	1	0	0	0
0	0	0	0	0
0	0	1	0	0
0	0	0	1	0
1	0	0	0	0
0	0	0	0	0
1	0	0	1	2
0	0	0	0	0

TOTAL FIBERS 18

TOTAL FIELDS 100

AV. FIBERS/FIELD .18

1.7 FIBERS/cc. 1.9

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS .49 - 3.4

0700B516

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-17

PLANT: Westinghouse - Lamson DEPARTMENT: 73 DATE SAMPLED: 3/12/73

EQUIPMENT OPERATED: Double trim Saw and sander PRODUCT: Asbestos Micarta

JOB TITLE: Sender helper OPERATORS NAME OR NO.: Willie Williams

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: Feeds saw-cut sheets into sunder

RESPIRATOR WORN? *No*

TYPE SAMPLE: PERSONAL: ☒ AREA: _____ CEILING: ☒ TWA: _____ SAMPLED BY: 229

TIME FINISHED: 4:08:30

TIME STARTED: 3:47

ELAPSED TIME. MIN: 21.5

PUMP NO: 4

RATE, LITERS/MIN: 1.5

VOLUME SAMPLED LITERS: 32.2

REMARKS: Fan blows across worker towards vacuum dust collector

SLIDE PREPARED: DATE: 3-28-73 BY: LJM SLIDE COUNTED: DATE: 3-28-73 BY: LJM

REMARKS:

2/50
FIBERS > 5 MICRONS

0	0	0	0	0
0	0	0	0	6
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	0
0	0	0	1	0
0	0	0	1	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	2
0	0	0	0	0
0	0	0	0	0

TOTAL FIBERS **7**

TOTAL FIELDS 180

AV. FIBERS/ FIELD

FIBERS/cc. 74

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS (-).16 - 1.6

07008517

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WJ-18

PLANT: Westinghouse - Hampton DEPARTMENT: 93 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Double trim saw & sander PRODUCT: Asbestos Micarta

JOB TITLE: Sander operator OPERATORS NAME OR NO.: James Gletley

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: Stacks sanded sheets

RESPIRATOR WORN? *No*

TYPE SAMPLE: PERSONAL: ✓ AREA: CEILING: ✓ TWA: SAMPLED BY: CPK

TIME FINISHED: 403:30

TIME STARTED: 3:47:30

ELAPSED TIME. MIN: 16

PUMP NO: 5

RATE, LITERS/MIN: 1.5

VOLUME SAMPLED LITERS: 24

REMARKS: _____

SLIDE PREPARED: DATE: 3-28-73 BY: JEM SLIDE COUNTED: DATE: 3-29-73 BY: GEM

REMARKS:

FIBERS > 5 MICRONS

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	0
0	0	0	0	0
0	0	0	6	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	0
0	0	0	0	0
0	0	0	0	0

TOTAL FIBERS **3**

TOTAL FIELDS 100

AV. FIDERS/ FIELD .03

FIBERS/cc. 43

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS .00 - 1.2

07008518

NICOLET INDUSTRIES, INC.
ASBESTOS FIBER COUNT

SAMPLE NO. WH-19

PIANT: Westinghouse - Lamp DEPARTMENT: 93 DATE SAMPLED: 3/22/73

EQUIPMENT OPERATED: Double trim saw & sander PRODUCT: Asbestos Micarta

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: _____ AREA: ✓ CEILING: ✓ TWA: _____ SAMPLED BY: ELX

TIME FINISHED: 4:03:30

PUMP NO: 6

TIME STARTED: 3:48

RATE, LITERS/MIN: 1.5

ELAPSED TIME MIN: 15.5

VOLUME SAMPLED LITERS: 23.2

REMARKS: Monitor on aisle side of sander - 4' above floor

SLIDE PREPARED: DATE: 3-28-73 BY: Jam SLIDE COUNTED: DATE: 3-29-73 BY: J.M.
3-30-73 Jam

REMARKS: _____

10/50 13/50
FIBERS > 5 MICRONS

0	0	0	0	0
0	0	0	0	0
0	1	0	5	0
1	0	1	0	0
0	0	2	0	0
0	0	0	0	0
0	0	0	1	0
0	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	1	0
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	0	0	1
0	0	0	0	0
0	1	0	0	0
3	1	0	0	1
0	0	0	0	1
0	0	0	0	0

TOTAL FIBERS 23
TOTAL FIELDS 100
AV. FIBERS/ FIELD .23
FIBERS/cc. 3.4

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS 1.1 - 5.7

07008519

07008521

NICOLET INDUSTRIES, INC.

ASBESTOS FIBER COUNT

SAMPLE NO. WH-21

PLANT: Westinghouse - Newport DEPARTMENT: 93 DATE SAMPLED: 2/22/73

EQUIPMENT OPERATED: Double trim saw & sander PRODUCT: Asbestos Micarta

JOB TITLE: _____ OPERATORS NAME OR NO.: _____

DESCRIBE WHAT OPERATOR DID DURING SAMPLING PERIOD: _____

RESPIRATOR WORN?

TYPE SAMPLE: PERSONAL: _____ AREA: ✓ CEILING: ✓ TWA: _____ SAMPLED BY: RL

TIME FINISHED: 4:08

TIME STARTED: 22:00

ELAPSED TIME. MIN: 4

PUMP NO: 6

RATE, LITERS / MIN: 1.5

VOLUME SAMPLED LITERS: 6

REMARKS: Same as WH-19 Monitor on aisle side of Sander - 4' above floor

SLIDE PREPARED: DATE: 3-28-73 BY: J. C. M. SLIDE COUNTED: DATE: BY:

REMARKS:

FIBERS > 5 MICRONS

[illegible]

TOTAL FIBERS

TOTAL FIELDS

AV. FIBERS/ FIELD

FIBERS/cc.

The Test result shown herein requires the following to comply with OSHA:

1. Post this report in Department _____
2. No respirator required _____
3. Reduce below _____ fibers/cc. by engineering methods _____
4. Employee must wear type #1 resp. _____
5. Employee must wear type #2 resp. _____
6. Other _____

95% CONFIDENCE LIMITS

07008522