

FILE NAME: Kelly Moore (KM)

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MAR 22 1976

File - Asbestos Survey Denver

**LIBERTY
MUTUAL**



2755 S. Locust Street, Suite 215, Denver, Colorado 80222 Tel. (303) 758-2282

March 18, 1976

Mr. Luis Garcia, Plant Superintendent
Kelly - Moore Paint Company
3600 East 45th Avenue
Denver, CO 80216

RE: Asbestos Survey Report

Dear Mr. Garcia:

Enclosed is your copy of the asbestos survey report conducted January 15, 1976. Per our conversation, you indicated that this department will probably shut down all operations effective April 1, 1976. Should a change be made in this decision the four recommendations remain applicable and should receive immediate attention.

Sincerely yours,

Wesley M. Goodson

Wesley M. Goodson
Sr. Loss Prevention Representative

WG:vf

cc: William E. Moore, President
Ted Gassner, Secretary-Treasurer
Robert Miller, Vice President - Production

KM 01127

PLAINTIFF'S
EXHIBIT

49KM

MAR 22 1976

ASBESTOS SURVEY
KELLY-MOORE, INC.
DENVER, COLORADO

Date of Survey: January 15, 1976

Date of Report: March 10, 1976

Report Prepared by: Bill Lutts

Asst. Southwest Div.

Industrial Hygienist

KM BB 5641

KELLY-MOORE, INC.

DENVER, COLORADO

DRY WALL MIXING AREA

Date of Survey: January 15, 1976

Date of Report: March 10, 1976

Material Sampled: Airborne Asbestos Fibers

Analysis Method: Phase-Contrast Microscope

Recommended Engineering Control Limit: 2 fibers greater than 5 microns in length/ml.

<u>Location</u>	<u>Fibers/ml</u>
1. Middle of workroom. Breathing zone height. Pump fixed on center support column. 40 minutes sampling during batch mix.	5
2. Second sample under same conditions as #1 above.	3
3. Personal sample. 40 minutes sampling time during mixing cycle, operator's breathing zone.	1
4. Same conditions as #3 above.	2

ASBESTOS SURVEY

KELLY-MOORE, INC.

DENVER, COLORADO

INTRODUCTION

A survey was made for airborne asbestos fibers in the dry wall products mixing area at Kelly-Moore, Inc., Denver, Colorado, on January 15, 1976. The purpose of the survey was to measure the presence and quantity of airborne asbestos fibers greater than five microns in length. The shorter fibers are not considered as an asbestos hazard, but rather as a category of free silica exposure. The recommended engineering control limit for asbestos fibers at present is 2 fibers per milliliter (per cubic centimeter) of workroom air for a normal work day and work week exposure. A total of four samples was taken with two pumps. One pump was mounted on the one man working in the dry wall area and the other pump was mounted on the center column of the room and measured the overall asbestos content of the air away from the ribbon mixers. The samples were taken open face at a rate of 2 liters per minute for 40 minutes and a blank was submitted with the exposed filters as a control.

CONCLUSIONS

The two samples taken on the mixing operator indicates that his exposure is less than or equal to the recommended engineering control limit during a mixing cycle. This result is not surprising since the ventilation system on the ribbon mixers where the bags are opened and emptied is doing an excellent job. In light of the relatively low exposure of the operator, the general room air results are surprisingly high.

An analysis of the sample taken in the center of the room at breathing zone height indicates that the number of asbestos fibers in the workroom air is greater than the recommended engineering control limit of 2 fibers per milliliter. Readings of 5 fibers per milliliter and three fibers per milliliter were obtained on each of the two 40 minute sampling runs. Measurements of the general room air flow were also made during the sample period and indicated that air was flowing in from the paint mixing area and out through the door which leads to the warehouse storage area. Given the operator's low exposure the only reasonable explanation for the difference in results is that the dust collector system beside the door which leads to the main paint mixing area is leaking or emitting fibers in some way and the general room air flow is then carrying them through the very region where we took the general room air sample. The low results obtained on the operator, who is the only man exposed in the room, indicates that the local exhaust ventilation system is performing properly at the source of contaminant. Therefore, assuming that our results give a true picture of the situation, the collector end of the exhaust ventilation system should be carefully checked for places where asbestos fibers might be escaping into the general room air.

RECOMMENDATIONS

76-1. A collection barrel is located beneath the dumping chute of the main dust collector bin. There is several inches of clearance between the bottom opening of this bin and the top of the collection barrel. It would be advisable to connect the bin and the barrel with a plastic sleeve which would prevent the release of asbestos fibers into the room air when the collection bin is dumped into the collection barrel. In addition, this would reduce the possibility that a leak in the bottom bin opening, or the residual fibers in the barrel itself, is a source of room contamination.

KM BB 5643

76-2. Care should be taken to make sure that asbestos bags are not included in the compactor presently in use. One bag had inadvertently been placed in the compactor at the time of our visit. The operator demonstrated the normal disposal procedures and indicated that this particular bag had been placed there in error by another employee. Given the proximity of the compactor to the center post where we took the general room sample, it is possible that this single asbestos bag contributed significantly to the total fiber levels detected.

76-3. The duct work of the dust collection system should be carefully checked to make sure that there are no leaks emitting asbestos fibers and dust into the work room air. A visual inspection at the time of our visit did not reveal any leaks. But, this is one possible explanation of the high detected levels which should be investigated.

76-4. Operators in this area should continue to wear their personal protective equipment until such time as the effectiveness of the engineering controls are fully verified. The respirators presently in use are approved for asbestos fibers and pneumoconiosis producing dusts.

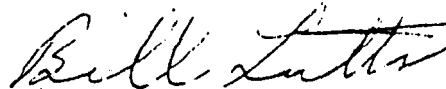
THE SURVEY

The four samples taken were collected in the standard manner using two personal sampling pumps. A flow rate of 2 liters per minute was used. A sampling period of 40 minutes per sample was used. The samples were taken with the cassettes open-face and pointed downward to prevent unwanted trash from settling on them.

One pump was mounted directly on the operator of the ribbon mixer and a total of two samples was taken with this pump. The other personal sampling pump was mounted in the center of the room at breathing zone height and two samples were taken on this pump also. More than two samples per pump might have been taken except that the mixing operations for that days workload had come to an end with the conclusion of the second set of samples.

The collected samples were then submitted to our Industrial Hygiene Laboratory at Hopkinton, Massachusetts. They were analyzed there by means of a phase-contrast microscope. A visual counting method was used to determine the number of fibers greater than 5 microns in length collected during the sampling period. This total sample volume collected and the total number of fibers present allowed the determination of fibers per milliliter to be determined.

A recommended engineering control limit of 2 fibers per milliliter is suggested in this report.



Bill Lutts

Asst. Southwest Division

Industrial Hygienist

BL:jl

File -
Asbestos Survey - S.C. Pass

File -
Yaco Platt - San Carlos

KELLY MOORE

San Carlos, California

ASBESTOS SURVEY

On June 30, 1975 a visit was made to this plant to re-evaluate the asbestos exposure following installation of additional engineering controls and reduction of the amount of asbestos used along some of the lines. Mike Love, Liberty Mutual's Senior Loss Prevention Representative, accompanied the writer.

CONCLUSIONS

1. All employees working in the Paco Division of this plant are not considered exposed to excessive asbestos in air concentrations. This is based on the current health standard. However, if our judgment was based on the health standard effective July 1, 1976, the "dry texture filler" would be considered exposed to an excessive amount of asbestos air concentrations.
2. The exhaust ventilation on the dry texture bagging machine is ineffective.

RECOMMENDATIONS

1. The local exhaust ventilation on the dry texture bagging machine be redesigned/increased so that dust can be effectively captured and removed.
2. The operator of the dry texture bagging machine should be provided with coveralls as much of this dust is infiltrating his street clothes. This increases his chance for taking asbestos fibers home and exposing other members of his family.
3. The ceiling texture mixer, dry texture mixer, and ready-mix mixer should wear the appropriate dust masks that have been provided for them whenever they are dumping bags of asbestos. Even though local exhaust ventilation has been provided at these dumping stations (150 linear feet per minute) the actual dumping of asbestos does create turbulence and dust which oftens billows into the operator's face before being exhausted.

KM BB 5648

DISCUSSION

This survey is the third that has been completed for asbestos. It is a re-evaluation to measure some of the engineering controls that were instituted (such as exhaust ventilation re-designed around the ceiling texture bager (and the reduction of asbestos primarily along the ceiling texture line which has dropped from approximately 150 pounds of asbestos per batch to 15 pounds of asbestos per batch.

Survey Method - Air samples were collected on membrane filters (0.8 micron porosity) with air being pulled through them via personal sampling pumps at approximately two liters per minute. Air samples were collected in both the employees breathing zone (filter cassettes attached to operator's shirt lapel and pump attached to their belt) and air samples were collected in various areas of the plant to determine background air concentrations. All samples were analyzed at our Hopkinton, Massachusetts laboratory via the phase contrast microscope method.

Toxicity - As you are probably now well aware, asbestos is a health hazard which when inhaled, may cause a lung disease called asbestosis. This takes 10 to 20 years to develop after exposure. In addition, it may also cause cancer of the chest or abdominal lining referred to as mesothelioma. This may be fatal within one year after the first symptom.

Health Standards - The current health standard for exposure to airborne asbestos fibers is five fibers per milliliter of air. This is an eight hour time weighted value which will drop to two fibers per milliliter of air July 1, 1976. Health standards are guidelines below which most workers would not be expected to experience any biological discomfort. Pre-existing conditions or individual susceptibility may be exceptions to this.

Paco Textures Manufacturing Department - Our data indicates that most of the employees working within the Paco texture area are exposed to one fiber per milliliter of air or less. The exception to this is the dry texture filler operator. Our data indicated that all the air samples taken in his breathing zone indicated three fibers per milliliter of air. These readings are very similar to those taken back in March 1973. This current air concentration of asbestos is acceptable only until July 1, 1976; however, from a standpoint of health and exposing an employee to unnecessary asbestos fibers in the air, this level is unacceptable.

The reason that this level is so high is the exhaust ventilation for the dry texture bagging machine is ineffective. The exhaust ventilation duct is directly behind the bagging slot and machine supports. The duct is so far back that it's completely ineffective just from a standpoint of distance let alone being obstructed by some of the parts to the machine. It is suggested that this local exhaust ventilation system be re-designed and

KM BB 5649

DATA

RESULTS OF: Asbestos in air

DATE OF SURVEY: June 30, 1975

SURVEY METHOD: Membrane filter

METHOD OF ANALYSIS: Phase contrast microscope

HEALTH STANDARD:

Eight Hour Time Weighted
Fibers per Milliliter of Air

Current
Effective July 1, 1976

5
2

SAMPLE #	LOCATION	TIME OF DAY	SAMPLING TIME MINUTES	AIR VOLUME LITERS	RESULTS ASBESTOS FIBERS/ml
1	Operator's Breathing Zone (OBZ), ceiling texture mixer.	8:00	53.5	107	1
2	OBZ, ceiling texture filler.	8:00	44.5	89	*
3	OBZ, dry texture mixer.	8:15	52.0	104	<0.7
4	OBZ, dry texture filler.	8:15	50.5	101	3
5	OBZ, ceiling texture mixer.	9:30	45.0	90	2
6	OBZ, ceiling texture filler.	9:30	47.0	94	*
7	OBZ, dry texture mixer.	9:30	50.5	101	<0.9
8	OBZ, dry texture filler.	9:30	50.5	101	3