FILE NAME: Drywall Spackling Compounds (DWSC)

DATE: 1972 July

DOC#: DWSC045

DOCUMENT DESCRIPTION: US Gypsum Company Asbestos Study Reports

ASBESTOS STUDY

FOR

RESEARCH CENTER

UNITED STATES GYPSUM COMPANY

DES PLAINES, ILLINOIS

STUDY PROCEDURES

The atmospheric samples were collected on open-faced Millipore filters using MSA Model G portable pumps. The filters were then analyzed in the MATLOCO Laboratory using standard phase contrast techniques. However, instead of counting the usual 20 fields per analysis, 40 fields were counted. All counting was done by the same person.

Prior to starting sampling in a particular area each day, "background counts" were obtained in the area where sampling was to be done. These locations correspond to positions 1, 3, and 4 on Figures A, B, and C respectively (See attached). These background counts have not been subtracted from the fiber concentrations shown on the data sheets. Wet and dry bulb thermometer readings were obtained using a sling psychrometer, and air velocities in each sampling area were measured each day using an Alnor thermoanemometer; the velocities were between 10 and 15 feet per minute, with some peaks to 20 fpm. Ten feet per minute is the lower limit of the instrument.

The worker's breathing zone was monitored during all operations by using two filters and pumps simultaneously.

DAILY PROCEDURES

July 21

After obtaining background samples from the north and south rooms, one bag of Durabond 90 was mixed by hand in the northeast room. This was followed by drill mixing another bag in the southeast room. The Durabond 90 was then applied to all joints in the four rooms and was allowed to dry. About an hour later one bag of joint compound was hand mixed in the southeast room, and application of the compound was started approximately 15 minutes later. Hand mix compound was applied in the two north rooms. All four rooms were also taped at the same time.

600110129

July 24

After obtaining background samples for the north and south rooms, one bag of topping compound was hand mixed in the southeast room. Eight minutes later, application of this compound was started in the south rooms. Redi-mix was applied in the north rooms.

Sample #13 had visible pieces of loose dust on it. This was undoubtedly caused by the scraping of the walls while the background sampling was being done.

July 26

A background sample was obtained in the area where 10 bags of topping compound were to be hand mixed (location #3, Figure B). Although the mixing of the 10 bags was done consecutively and continuously, the sampling period was broken into two 5 bag periods. However, during the mixing of all 10 bags a continuous sample was taken at location #3 (Sample #22).

The operation switched back to the four rooms in the other building, where background samples were taken in the north and south rooms. After the background sampling, all four rooms were sanded. In addition to the filters worn by the worker, a filter was also placed in the center of each room being sanded (Location #2, Figure A). When the worker shifted from one room to another, this sample was moved with him. However, separate "area" samples were obtained for the north and south rooms, as different materials were applied to the walls in the north and south rooms.

Samples #28, 30, 31, and 32 all contained visible loose dust. This was due to the amount of dust being generated by the sanding process. Also, the physical motions of the worker tended to expose the open filter faces to the dust falling from the walls and ceiling. In analyzing these particular filters, the dust was distributed evely over the filters, not shaken to one side or disposed of. Only when the particles were so bunched together that a count in the particular microscope field could not be obtained was another field selected. Therefore, the asbestos present in this loose dust was accounted for.

After the sanding, an additional coat of the topping compound (one of the bags mixed in house A) was applied to the south rooms. Redi-mix was applied to the north rooms.

G0031 0730

July 28

After sampling for background levels, sampling was done while the worker touch sanded in all four rooms. Area samples were obtained at location #2, Figure A, using the same procedure used on July 26. However, the filters worn by the employees were switched when he finished sanding in a particular room, not just when moving from the south to north rooms. This eliminated the loose material on the filters.

The operation moved to house A, where a background sample was taken at the position #3. This time the filters were not switched at the conclusion of 5 bags. Rather, the filters remained on the worker while he drill mixed 10 bags of topping compound. A sample was also obtained at position #3 while the mixing was being done.

August 16

After discussing the results of the previous sampling, it was decided that additional sampling of the hand mixing operations was necessary. Therefore, after obtaining background samples at position #4, Figure C in the southeast and northeast rooms, the worker hand mixed 10 bags of Durabond 90 in the southeast room and then 10 bags of taping compound in the northeast room. In addition to the filters worn by the worker, area samples were also taken at position #4. It should also be noted that while the mixing of one bag on July 21 (Samples #3 and #4) took 1.5 minutes, the average time per bag this time was about 2 minutes. Obviously, the speed at which a single bag is mixed will influence the amount of dust generated.

International Loss Control Service Corporation
LONG GROVE, ILLINOIS 60049, TEL 312-540-2160

LOSS CONTROL SURVEY

The objective of this service is to assist you in controlling accidents and costs.

DATE July 21, 1972

PREPARED FOR: Research Center
United States Gypsum Company
Des Plaines, Illinois 60016

BY Norman E. Dotti
NAME
Environmental Consultant
TITLE

CONTRACT NO. MSC 007371

LOCATION CODE NO. _____

NO. OF EMPLOYEES _____

ASBESTOS EXPOSURES

Sample Number	Sample Location	Sample Time (Min)	Concentration (Fibers/ml)
1.	Doorway between south rooms (Background)	30	0.5
2.	Doorway between north rooms (Background)	29	0.1
3.	Breathing zone, hand mix one bag Durabond 90, (N.E.)	1.5	42.0
4.	Same	1.5	55.7
5.	Breathing zone, drill mix one bag Durabond 90 (S.E.)	1.5	10.1
6.	Same	1.5	6.7
7.	Breathing zone, applying Durabond 90 (S.)	30	0.9
8.	Same	30	0.3
9.	Breathing zone, hand mixing one bag joint compound (S.E.)	2	15.1
10.	Same	2	13.3
11.	Breathing zone, applying joint compound and tape (S.)	21	1.6
12.	Same	21	0.9

Dry bulb temperature [illegible]
Wet bulb temperature [illegible]

GP011 0737

National Loss Control Service Corporation

LONG GROVE, ILLINOIS 60049, TEL. 312-540-2400

LOSS CONTROL SURVEY

The objective of this service is to assist you in controlling accidents and losses.

DATE July 24, 1972

BY Norman R. Dotti
NAME
Environmental Consultant
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CONTRACT NO. NSC 007371

LOCATION CODE NO. _____

NO. OF EMPLOYEES _____

PREPARED FOR: Research Center
United States Gypsum Company
Des Plaines, Illinois 60016

ASBESTOS EXPOSURES

Sample Number	Sample Location	Sample Time (Min)	Concentration (Fibers/ml)
13.	Doorway between north rooms (Background)	34	0.1
14	Doorway between south rooms (Background)	34	0.0
15.	Breathing zone, hand mixing topping compound (S.E.)	2	15.1
16.	Same	2	5.7
17.	Breathing zone, applying topping compound (S.)	33	0.5
18.	Same	33	0.1

Dry bulb temperature 74°F
Wet bulb temperature 62°F > ~51% RH

GP011 0733

National Loss Control Service Corporation

LONG GROVE, ILLINOIS 60049, TEL. 312 - 540-2400

LOSS CONTROL SURVEY

The objective of this service is to assist you in controlling accidents and losses

DATE July 26, 1972

PREPARED FOR: Research Center
United States Gypsum Company
Des Plaines, Illinois 60016

BY Norman R. Dotti
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Environmental Consultant
TITLE

CONTRACT NO. NSC 007371

LOCATION CODE NO. _____

NO. OF EMPLOYEES _____

ASBESTOS EXPOSURES

Sample Number	Sample Location	Sample Time (Min)	Concentration (Fibers/ml)
19.	Center of mixing area, House A (Background)	30	0.3
20.	Breathing zone, hand mixing 10 bags topping compound, 1st 5 bags	13	3.1
21.	Same	13	4.1
22.	Center of semi-circle during hand mixing 10 bags	23	2.4
23.	Breathing zone, hand mixing 10 bags topping compound, 2nd 5 bags	11	3.3
24.	Same	11	5.9
	Dry bulb temperature 73°F Wet bulb temperature 61°F		
25.	Doorway between south rooms (Background)	30	0.0
26.	Doorway between north rooms (Background)	31	0.1
27.	Breathing zone, sanding south rooms (Hand mixing compound)	20	0.8
28.	Same	20	0.6 *

G2031 0134

National Loss Control Service Corporation

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LOSS CONTROL SURVEY

The objective of this service is to assist you in controlling accidents and losses

DATE July 26, 1972

BY Norman R. Dotti
NAME

Environmental Consultant
TITLE

CONTRACT NO. NSC 007371

LOCATION CODE NO. _____

NO. OF EMPLOYEES _____

PREPARED FOR: Research Center
United States Gypsum Company
Des Plaines, Illinois 60016

ASBESTOS EXPOSURES

Sample Number	Sample Location	Sample Time (Min)	Concentration (Fibers/ml)
29.	Center of south rooms during sanding	20	0.6
30.	Breathing zone, sanding north rooms (Redi-mix)	20	0.5 *
31.	Same	20	0.4 *
32.	Center of North rooms during sanding	20	0.4 *

Dry bulb temperature 72°F
Wet bulb temperature 61°F > ~ 54% RH

* probably overloaded

GP031 0735

National Loss Control Service Corporation
LONG GROVE, ILLINOIS (60049), TEL 312-540-2100

LOSS CONTROL SURVEY

The objective of this service is to assist you in controlling accidents and losses.

DATE July 28, 1972

PREPARED FOR: Research Center
United States Gypsum Company
Des Plaines, Illinois 60016

BY Norman R. Dotti
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Environmental Consultan
TITLE

CONTRACT NO. NSC 007371

LOCATION CODE NO. _____

NO. OF EMPLOYEES _____

ASBESTOS EXPOSURES

Sample Number	Sample Location	Sample Time (Min)	Concentration (Fibers/ml)
33.	Doorway between south rooms	31	0.1
34.	Doorway between north rooms	31	0.1
35.	Center of south rooms during touch sanding	16	0.1
36.	Breathing zone, touch sanding (S.E.)	8	2.5
37.	Same	8	3.1
38.	Breathing zone, touch sanding (S.W.)	8	1.5
39.	Same	8	2.6
40.	Center of north rooms during touch sanding	15	0.0
41.	Breathing zone, touch sanding (N.E.)	6	1.3
42.	Same	6	2.0
43.	Breathing zone, touch sanding (N.W.)	9	1.3
44.	Same	9	2.3

Dry bulb temperature 69°F
Wet bulb temperature 60°F

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National Loss Control Service Corporation

LONG GROVE, ILLINOIS 60049, TEL. 312 - 540-2400

LOSS CONTROL SURVEY

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DATE July 28, 1972

PREPARED FOR: Research Center
United States Gypsum Company
Des Plaines, Illinois 60016

BY Norman R. Dotti
NAME
Environmental Consultant
TITLE

CONTRACT NO. NSC 007371

LOCATION CODE NO. _____

NO. OF EMPLOYEES _____

ASBESTOS EXPOSURES

Sample Number	Sample Location	Sample Time (Min)	Concentration (Fibers/ml)
45.	Center of mixing area, House "A" (background)	16	0.0
46.	Center of semi-circle during drill mixing 10 bags topping compound	10	1.2
47.	Breathing zone, mixing 10 bags topping compound	10	1.1
48.	Breathing zone, mixing 10 bags topping compound	10	1.7

Dry bulb temperature 70°F
Wet bulb temperature 61°F > 10% RH

USG 1500 0121

National Loss Control Service Corporation

LONG GROVE, ILLINOIS 60049, TEL. 312 - 540-2400

LOSS CONTROL SURVEY

The objective of this service is to assist you in controlling accidents and losses.

PREPARED FOR: Research Center
United States Gypsum Company
Des Plaines, Illinois 60016

DATE August 16, 1972

BY Norman R. Dotti
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Environmental Consultant
TITLE

CONTRACT NUMBER NSC 007371

LOCATION CODE NO. _____

ASBESTOS EXPOSURES

Sample Number	Sample Location	Sample Time (Min)	Concentration (Fibers/ml)
49.	Center of S. E. room (Background)	30	0.1
50.	Center of semi-circle during mixing	20	6.4
51.	Breathing zone, hand mixing 10 bags Durabond 90	20	2.8
52.	Same	20	3.4
53.	Center of N.E. room (Background)	33	0.1
54.	Center of semi-circle during mixing	23	1.5
55.	Breathing zone, hand mixing 10 bags taping compound	23	0.6
56.	Same	23	1.0

Dry bulb temperature 72°F
Wet bulb temperature 61°F > ~69% RH

C0011 0733

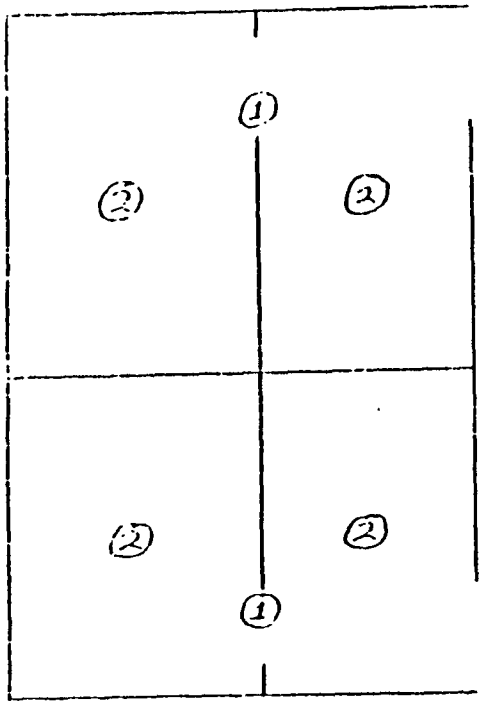


FIG. A

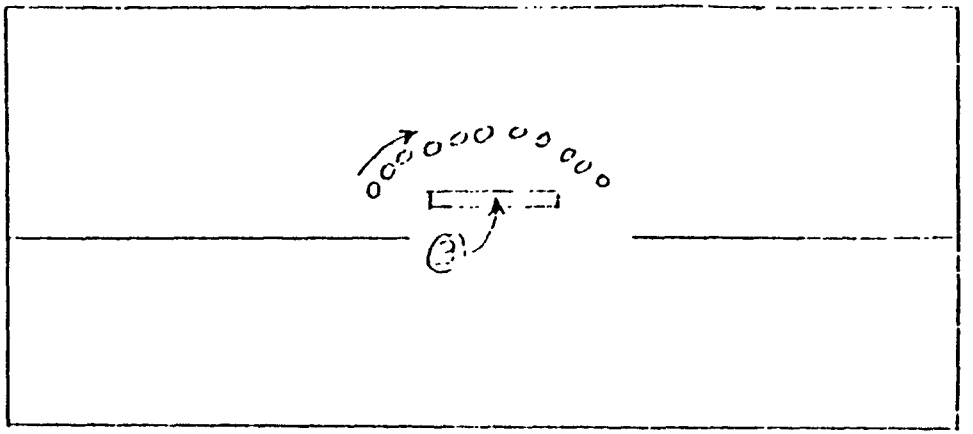


FIG. B

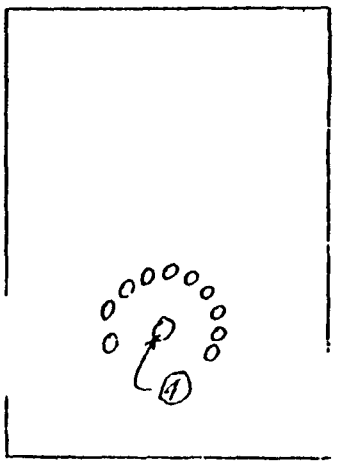


FIG. C

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