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October 25, 1967

Pittsburgh Corning Corporation
Box 37
Fort Allegheny, Pennsylvania 15743

Attention: Mr. L. O. Griffith
Plant Manager

Gentlemen:

Surveys were conducted on September 19 and 20, 1967 to evaluate asbestos dust exposures to employees manufacturing asbestos pipe insulation and to heat in the Glass Block and Rockglass plants. Mr. H. J. Suter, personnel manager, accompanied.

Air samples for dust containing asbestos were collected in midge impingers containing distilled water. A standardized light-microscopic technique was used to count dust. Results indicate that exposures in all areas except Number 2 building machine (24 x 1 inch pipe insulation) are less than the threshold limit value of 5 million particles per cubic foot of air based on an 8-hour daily exposure.

Based on the results of this survey the following recommendations are made:

1. Check building machine number 2 convective conveying and local exhaust ventilation systems to insure proper operation. There is a positive pressure in the building machine enclosure.
2. Check the pressure of the sodium silicate spraying apparatus.
3. Consider lowering the hood located at building machine number 2 to a point where it will effectively control dust. Presently it is located much too high for any control.
4. Proceed with your plans to redesign the mixing area.
5. Turn the convective heater located at the southeast corner of the core storage bin so that the air blast is directed away from the bin entrance. This air blast is now directed into the bin and blower local exhaust ventilation system.
6. Continue your program of periodic dust and asbestos examinations for workers exposed to dust.

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To evaluate heat exposures, sling psychrometers were used to measure dry (DB) and wet bulb (WB) temperatures. A black globe thermometer was used to measure radiant heat and Anemometer and Velometer Juniors were used to measure air velocities. All air velocities were measured at the man's position and not in the duct. These measurements and pertinent calculations are included in the attached table.

At the onset of this survey the outside temperature was 77°F with a relative humidity of 48 percent. Measurements were first made in the Glass Block plant. Air temperatures measured in the man cooling ducts were about 100°F hotter than the outside temperature indicating that the ductwork was acting like a furnace. Should the outside air temperature rise above 85°F, the air delivered by the man cooling ducts would impose a heat load on the men rather than cool them. Heat exposures are now considered severe with an outside temperature of 77°F.

Heat Stress Indices of 70 to 90 based on an 8-hour daily exposure are considered conditions that may result in severe heat strain. All employees at operations evaluated except the number 4 press operator, are exposed to situations that can lead to severe heat strain. This is taking into consideration rotation of job and rest periods.

Based on the findings in this survey the following recommendations are made:

Glass Block Plant:

7. Provide evaporative cooling or air conditioning for the man cooling air system.
8. Paint the man cooling duct system with aluminum paint.
9. Install reflective shielding immediately below the man cooling air ducts where it crosses infrared heat sources.
10. Interpose reflective shielding between men and infrared sources. Examples are the molding machines and conveyors. Polished aluminum will reflect about 95 percent of the radiant heat.

Fourglass Plant:

11. Operate evaporative coolers when outdoor temperatures exceed 50°F.
12. Interpose reflective shielding between men and infrared sources.

In Regard to Heat Exposed Personnel:

13. Continue to provide salt tablets and encourage workers to drink water even if not thirsty. Encourage workers to salt food heavily.

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14. Provide preplacement and periodic physical examinations. Personnel with circulatory or other physiological deficiencies, such as respiratory infections and digestive disturbances, should not be permitted to remain in occupations requiring excessive heat exposures.

Please let us know within 30 days of the steps taken to comply with the above recommendations and their approximate dates of completion.

Enclosed are our Hygiene Information Guides entitled "Asbestos", "Heat" and Regulation 432, as amended.

Sincerely,

Jan Lieben, M.D., Director
Division of Occupational Health

Enclosures

JL:EJB:gn

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Commonwealth of Pennsylvania
Department of Health
DIVISION OF OCCUPATIONAL HEALTH

Heat Stress Calculations

Location	Air Velocity fpm	DB	Man's Position of WB	Globe	Convective Heat Gain (C) BTU/hr	Radiant Heat Gain (R) BTU/hr	Metabolism (M) BTU/hr	Required (M+R+C) BTU/hr	Maximum (2400 BT/hr maximum) BTU/hr	Heat Stress Index (H.S.I.) Freq Emax
<u>Glass Block Plant (continued)</u>										
Press #1 (at press)	75	94	73	118	-90	1015	700	1705	1035	
Press #1 (at window)	750	99	72	119	-224	2870	700	2146	2400	154
Press #1 (at weigh scale)	300	95	74	135	0	2770	700	3770	2315	
Press #1 (at mold)	150	108	80	144	+197	2190	700	3367	1900	

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Survey by:

Paul A. Crooks
Regional Industrial Hygienist

George J. Tonnick
Industrial Hygienist

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Table 1

Commonwealth of Pennsylvania
Department of Health
DIVISION OF OCCUPATIONAL HEALTH

Heat Stress Calculations
Pittsburgh Corning Corporation
Port Allegany, Pennsylvania

Location	Air Velocity fpm	DB	Man's Position WB	Globe	Convective Heat Gain (C) BTU/hr	Radiant Heat Gain (R) BTU/hr	Metabolism (M) BTU/hr	Erequired (M+R+C) BTU/hr	Maximum (2400 BT/hr maximum) BTU/hr	Heat Stress Index (H.S.I.) Ereq Emax
General Room										
#1	1350	68	63	104	-1240	4090	1000	3550	2400	
#2	1200	64	61	100	-1650	3800	1000	2150	2400	177
#3	2700	62	59	120	-2840	9530	1000	7660	2400	
Lunch room	10	71	64	-	-72	-	400	-92	312	
Furnace										
#4	1350	62	59	131	-1940	6170	1000	7230	2400	
#5	1200	62	59	123	-1730	4600	1000	6050	2400	282
#6	1600	74	66	138	-1330	6330	1000	8030	2400	
Along Floor										
Sealer #4	1400	90	70	134	-403	5470	1000	6067	2400	
Filler Feed	700	805	77	135	+385	3062	700	4147	2400	189
Sealer #1	2800	90	73	122	-363	4925	1000	5662	2400	
Lunch room	100	74	66	-	-240	-	400	160	1255	
Press #4 (at press)	150	100	77	128	+24	1230	700	1954	1990	24
Press #4 (at bench)	360			93	-301	-35	400		2400	

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Commonwealth of Pennsylvania
Department of Health
DIVISION OF OCCUPATIONAL HEALTH

Table 2

Dust Concentrations

Pittsburgh Corning Corporation
Fort Allegany, Pennsylvania

Location	Dust Concentrations* (millions of particles per cubic foot of air)	Remarks
Asbestos pipe insulation area	2.5	Operator's exposure, builder #1
	18.2	Operator's exposure, builder #2
	1.4	Operator's exposure at take off of 2 1/2 x 1 Unibestos
	1.9	Operator's exposure attending saw
	1.4	General air, ground storage bin area
	3.1 3.5	Operator's exposure at blender

*Threshold limit value for dust containing asbestos:
5 million particles per cubic foot of air based on an 8-hour daily
exposure

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Survey by:

Paul A. Gronka
Regional Industrial Hygienist

George J. Touchette
Industrial Hygienist

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