RESULTS OF U.S.P.H.S. SURVEY

WORLD - BESTOS, FIRESTONE
Friction Plant
New Castle, Indiana

IWS-32.35c

Report Prepared By:
John M. Dement

January, 1972

National Institute for Occupational Safety and Health
550 Main Street Room 7017 FOB Cincinnati, Ohio 45202

January 18, 1972

Mr. George Miller
Plant Manager
Work - Bostes
The Firestone Tire and Rubber Company
New Castle, Indiana 47362

Dear Mr. Miller:

Enclosed are the final results of the survey conducted in your plant in September, 1971. The results are listed by operation and job, our sample number and asbestos concentration of fibers per milliliter greater than 5u in length. A summary table by operation is also enclosed.

An emergency temporary standard for asbestos dust took effect upon the publication in the Federal Register on December 7, 1971. The standard states: "The 8-hour time-weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed five fibers per milliliter greater than five microns in length, as determined by the membrane filter method at 400-450X magnification (4 millimeter objective) phase contrast illumination. Concentrations above five fibers per milliliter but, not to exceed ten fibers per milliliter, may be permitted up to a total of 15 minutes in an hour for up to five hours in an 8-hour day."

From our survey results we found average exposures in the following jobs exceeded the average standard:

1. Dry Mixing
2. Wet Mixing
3. Block Preforming
4. Sheet Preforming
5. Mercury Clutch Preforming
6. Finish Grinding
7. Sanding
8. Multiple Drill Operator
9. Transmission Band Inspector
10. Dry Mix Inspecting

Mr. George Miller
World-Bestos
January 18, 1972

In addition, there were 30 samples which exceeded the 15 minute level of 10 fibers per milliliter in the above stated jobs. Sampling times varied from approximately 15 minutes in the mixing operations to 30 minutes in some finishing operations. Even though sample times were cut short in mixing operations, many samples were not countable due to excessive dust levels. These samples are noted in the report.

The results of the survey indicate that there were some definite problem areas associated with the operations and jobs mentioned above. In the event that conditions in the plant at the present time are similar to conditions when the survey was conducted, it would appear that a serious and persistent health hazard probably exist. Corrective industrial hygiene practices are indicated in the areas where excessive concentrations were found. More specific conclusions and recommendations may be found in the report sent you December 17, 1971 entitled: "Asbestos Dust and Preliminary Industrial Hygiene Survey".

If you have any questions, please feel free to contact me.

Very truly yours,

John H. Dement
Assistant Sanitary Engineer
Environmental Investigations Branch
Division of Field Studies and
Clinical Investigations

Enclosure

cc: Director, DFSCI
Acting Deputy Director, DFSCI
Regional Program Director, NIOSH, Region V
Indiana State Board of Health
Acting Chief, EIB
Dictator's file
Plant File
Region file ✓
Reader's file
Divison file
Central files (Cincinnati)
George L. Wilson, Firestone Tire & Rubber Co.

World-Bestos, Firestone
New Castle, Indiana
Friction Plant

Results of U.S.P.H.S. Survey
September 1971
Personal Samples

OPERATION and JOB	*SAMPLE #*	*PERSONAL SAMPLE CONC. FIBERS >5μ/ml*
210 - Mixing, Coating & Extruding		
Dry Mixer	25	----[1]
Dry Mixer	27	6.6[2]
Dry Mixer	98	----[1]
Dry Mixer	100	15.5[2]
Dry Mixer	101	32.4[2]
Dry Mixer	188	17.7[2]
Dry Mixer	191	----[1]
Dry Mixer	192	----[1]
Weigher - Dry Mixing	26	----[1]
Weigher - Dry Mixing	99	----[1]
Wet Mixer	4	10.1[2]
Wet Mixer	5	1.1[2]
Wet Mixer	6	3.3
Wet Mixer	102	9.6[2]
Wet Mixer	103	7.3[2]
Wet Mixer	144	6.9[2]
Wet Mixer	166	3.2[2]
Wet Mixer	167	3.9[2]
Block Preformer	1	10.7[2]
Block Preformer	2	3.4[2]
Block Preformer	17	18.4[2,3]
Block Preformer	35	4.4[2]
Block Preformer	47	5.7[2]
Block Preformer	48	10.2[2]
Block Preformer	72	3.6[2]
Block Preformer	79	2.3[2]
Block Preformer	97	43.4[2,3]

World-Bestos, Firestone
New Castle, Indiana - September, 1971
January 14, 1972

OPERATION and JOB	*SAMPLE #*	*PERSONAL SAMPLE CONC. FIBERS >5μ/ml*
210 - Mixing, Coating & Extruding (continued)		
Block Preformer	121	18.4
Block Preformer	122	57.3
Block Preformer	186	5.8[2]
Sheet Preformer	29	10.8
Sheet Preformer	30	11.1
Sheet Preformer	45	20.9
Sheet Preformer	46	10.5
Sheet Preformer	76	7.0
Sheet Preformer	182	9.4
Sheet Preformer	185	12.2
Mercury Clutch Forming	126	4.3
Mercury Clutch Forming	189	10.2
220 - Forming		
Auto Roller Operator (convexor)	3	1.9
Auto Roller Operator (convexor)	7	1.7
Auto Roller Operator (convexor)	8	1.5
Auto Roller Operator (convexor)	71	9.2
Auto Roller Operator (convexor)	104	3.1
Auto Roller Operator (convexor)	105	5.4
Auto Roller Operator (convexor)	106	5.0
Auto Roller Operator (convexor)	143	0.8
Auto Roller Operator (convexor)	168	1.2
230 - Hot Pressing		
Hot Press Operator	16	2.7
Hot Press Operator	28	5.6
Hot Press Operator	31	7.3
Hot Press Operator	34	2.9
Hot Press Operator	39	4.0
Hot Press Operator	73	6.0
Hot Press Operator	74	5.5
Hot Press Operator	75	2.8
Hot Press Operator	123	1.4
Hot Press Operator	125	5.1
Hot Press Operator	184	4.0
Hot Press Operator	187	10.9[3]
Hot Press Operator	190	2.8

World-Bestos, Firestone
New Castle, Indiana - September, 1971
January 14, 1972

OPERATION and JOB	*SAMPLE #*	*PERSONAL SAMPLE CONC. FIBERS >5μ/ml*
240 - Baking (curing)		
Dregg Curer	64	3.1
Dregg Curer	65	5.5
Dregg Curer	66	7.4
Dregg Curer	67	7.3
Dregg Curer	88	2.1
Dregg Curer	89	1.5
Dregg Curer	90	0.6
Dregg Curer	110	2.3
Dregg Curer	111	3.2
Dregg Curer	120	4.4
Dregg Curer	135	1.6
Dregg Curer	136	3.1
Dregg Curer	137	0.9
Dregg Curer	161	3.1
Dregg Curer	162	2.8
250 - Grinding & Sanding		
Surface Grinder	10	1.7
Surface Grinder	20	2.9
Surface Grinder	43	7.8
Surface Grinder	44	10.0[3]
Surface Grinder	59	6.1
Surface Grinder	60	5.9
Surface Grinder	83	5.5
Surface Grinder	108	3.8
Surface Grinder	115	4.7
Surface Grinder	118	3.6
Surface Grinder	128	3.2
Surface Grinder	130	2.8
Surface Grinder	131	3.8
Surface Grinder	132	3.7
Surface Grinder	133	2.7
Surface Grinder	140	1.4
Surface Grinder	155	3.5
Surface Grinder	156	7.9
Surface Grinder	159	1.6
Surface Grinder	160	4.6
Surface Grinder	175	7.7

New Castle, Indiana September, 1971
January 14, 1972

OPERATION and JOB	SAMPLE #	PERSONAL SAMPLE CONC. FIBERS >5μ/ml
250 - Grinding & Sanding (continued)		
Edge and Bevel Grinder	50	1.7
Edge and Bevel Grinder	56	1.2
Edge and Bevel Grinder	68	5.4
Edge and Bevel Grinder	96	2.3
Edge and Bevel Grinder	138	3.3
Edge and Bevel Grinder	160	2.0
Finish Grinder	52	2.1
Finish Grinder	129	16.6
Finish Grinder	169	3.6
Finish Grinder	170	6.5
Sander	15	7.9
Sander	33	3.2
Sander	42	3.3
Sander	179	7.3
260 - Cutting and Drilling		
Transmission Band Cutter	124	10.8
Abrasive Cut-Off Operator	19	10.9
Abrasive Cut-Off Operator	37	11.8
Abrasive Cut-Off Operator	41	3.4
Abrasive Cut-Off Operator	78	9.0
Abrasive Cut-Off Operator	82	2.4
Abrasive Cut-Off Operator	127	7.2
Abrasive Cut-Off Operator	178	7.6
Slab Trimmer	18	11.1
Slab Trimmer	38	12.6
Slab Trimmer	51	14.4
Slab Trimmer	81	1.2
Slab Trimmer	158	11.0
Slab Trimmer	176	9.0[3]
Slab Trimmer	177	----[1]
Multiple Drill Operator	21	15.3
Multiple Drill Operator	22	5.2
Multiple Drill Operator	49	12.3[3]
Multiple Drill Operator	58	5.5
Multiple Drill Operator	116	5.0
Multiple Drill Operator	134	1.6
Multiple Drill Operator	173	4.2[3]
Multiple Drill Operator	225	6.3

World-Bestos, Firestone
New Castle, Indiana September, 1971
January 14, 1972

OPERATION and JOB	*SAMPLE #*	*PERSONAL SAMPLE CONC. FIBERS >5μ/ml*
260 - Cutting and Drilling (continued)		
Chop Saw Operator	9	1.9
Chop Saw Operator	12	2.7
Chop Saw Operator	13	2.9
Chop Saw Operator	14	3.3
Chop Saw Operator	63	1.3
Chop Saw Operator	69	6.9
Chop Saw Operator	92	3.6
Chop Saw Operator	107	3.0
Chop Saw Operator	109	2.7
Chop Saw Operator	139	0.6
Chop Saw Operator	141	3.0
Chop Saw Operator	142	2.3
Chop Saw Operator	163	2.8
Chop Saw Operator	164	1.7
Chop Saw Operator	165	7.6
Ridgeway Drill Operator	146	2.7
Ridgeway Drill Operator	151	5.4
Ridgeway Drill Operator	152	3.7
Ridgeway Drill Operator	153	2.3
Ridgeway Drill Operator	172	1.7
Drill Press Operator	23	2.5
Drill Press Operator	54	2.1
Drill Press Operator	84	0.6
Drill Press Operator	85	2.9
Drill Press Operator	117	4.4
Drill Press Operator	147	2.4
Drill Press Operator	154	2.3
Do-All Saw Operator	24	5.7
Do-All Saw Operator	40	5.2
Table Saw Operator	183	2.2
280 - Inspection and Packing		
Brake Lining Inspector	55	1.6
Brake Lining Inspector	57	1.1
Brake Lining Inspector	80	8.2
Brake Lining Inspector	91	0.3

World-Bestos, Firestone
New Castle, Indiana September, 1971
January 14, 1972

OPERATION and JOB	*SAMPLE #*	*PERSONAL SAMPLE CONC. FIBERS >5μ/ml*
280 - Inspection and Packing (continued)		
Brake Lining Inspector	93	0.6
Brake Lining Inspector	94	1.3
Brake Lining Inspector	95	1.0
Brake Lining Inspector	113	3.1
Brake Lining Inspector	114	2.0
Brake Lining Inspector	145	3.1
Brake Lining Inspector	148	0.3
Brake Lining Inspector	149	0.7
Brake Lining Inspector	150	1.3
Brake Lining Inspector	171	8.9
Transmission Band Inspector	181	22.8
Dry Mix Inspector	53	11.1
290 - Miscellaneous		
Maintenance - Mechanic	32	1.8
Maintenance - Mechanic	36	3.3[3]
Maintenance - Mechanic	61	2.2
Maintenance - Mechanic	62	0.4
Maintenance - Mechanic	70	3.3
Maintenance - Mechanic	86	0.9
Maintenance - Mechanic	119	2.2
Serviceman	11	3.6
Serviceman	12	1.8
Serviceman	87	0.7

1 *Background dust too heavy to allow a count to be made*

2 *Worker wears a respirator*

3 *Background dust heavy but was able to make a fiber count*

SUMMARY TABLE

World-Bestos Firestone

New Castle Indiana

Survey: September, 1971

OPERATION (# Samples)	SAMPLE CONCENTRATION, FIBERS >5μ/ml Low	High	Mean	% Conc. >2	% Conc. >5	% Conc. >10
Mixing, Coating & Extruding (33)	1.1	57.3	12.1	97	72.7	48.5
Forming (9)	0.8	9.2	3.3	33.3	33.3	0.0
Hot Pressing (13)	1.4	10.9	4.9	92.3	46.2	8.3
Baking (Curing) (15)	0.6	7.4	3.3	80.0	20.0	0.0
Grinding & Sanding (35)	1.2	16.6	4.6	85.7	34.3	5.7
Cutting & Drilling (52)	0.6	15.3	5.2	88.5	42.3	17.3
Inspection & Packing (16)	0.3	22.8	4.2	43.8	25.0	12.5
Miscellaneous (10)	0.4	3.6	2.0	50.0	0.0	0.0