RESULTS OF AIR SAMPLES

CERTAIN-TEED
St. Louis, Missouri

Report Prepared By:
Jeremiah R. Lynch

April, 1967

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plant #17

April 14, 1967

Mr. Daniel P. Maloney
Plant Manager
Certain-Teed Products Corp.
St. Louis, Missouri

Dear Mr. Maloney:

The analysis of the air samples collected in your plant during our survey in December 1965 has been completed and the results are attached. The impinger samples were counted during the survey using the American Conference of Governmental Industrial Hygienists' method. The membrane filters were rendered transparent with a 50-50 mixture of diethyl oxalate, dimethyl phthalate and counted at 430X magnification with phase contrast illumination.

All of the dust concentrations as measured by impinger were under the 5 million particles per cubic foot Threshold Limit Value currently in use. The membrane filter method is experimental and no standards have been set for its interpretation. Some relationships between the impinger and filter measurement are discussed in the enclosed reprint.

Your cooperation in this study is sincerely appreciated and the data gained from your plant is of considerable value.

Sincerely yours,

Jeremiah E. Lynch
Engineering Section
Occupational Health Program

cc: Dr. Fullgrabe, Missouri
Dr. Cralley

Results of Air Samples of December 1965
Certain-Teed, St. Louis, Missouri

Operation	Impinger		Membrane Filter			
				Fibers/cc		
	Sample #	mppcf	Sample #	Total	10 μ+	>5μ
Warehouse and Mixing						
Fiber Man--BZ	18	2.6				
Personal			106	5.3	2.1	3.0
			113	5.2	1.9	3.3
			121	120.8	37.8	6.2
Mixer Operator Personal			16	2.5	0.6	1.7
Grinder--BZ	112	3.7				
X-mas--Gen.	8	2.6				
	J9	1.4				
Pipe Forming						
Consol Operator Personal			110	1.2	0.2	0.7
			118	3.3	0.9	2.6
			122	2.8	0.7	2.4
						~~2.0~~
Pipe Machine Tender Personal			15	3.0	1.2	2.0
			17	5.0	1.3	3.5
			116	2.7	0.9	1.8
Floor Man Personal			38	0.9	0.2	0.6
			39	0.9	0.3	0.7
X-mas--Gen.	20	1.5	22	11.6	2.3	4.7
	J21	0.2	N23	13.0	3.4	8.0
	200	0.8	203	5.7	1.1	2.6
	J201	0.2	N202	5.5	0.5	1.8

NOTES:
"Personal" refers to personal samples on membrane filters
"BZ" refers to breathing zone samples by companion impingers and membrane filter
"Gen." refers to samples of general air in the particular department

Certain-Teed

Operation	Impinger		Membrane Filter			
				Fibers/cc		
	Sample #	mppcf	Sample #	Total	10 μ+	>5μ
Curing						
Mandrel Puller--BZ	27	0.9	28	1.0	0.2	0.6
	24	0.4	25	4.5	1.1	2.4
Personal			14	3.5	0.9	2.3
			107	0.7	0.4	0.7
			114	5.8	1.5	3.9
			117	0.7	0.1	0.3
			123	0.6	0.3	0.6
Fork lift						
Personal			108	1.9	0.4	1.1
			138	0.4	0.1	0.4
Pipe Finishing						
Lathe Operator--BZ	41	0.7	42	1.0	1.0	1.2
	43	0.6	44	0.8	0.6	1.2
	135	0.4	136	0.4	0.0	0.0
Personal			35	1.1	0.4	0.7
			36	0.9	0.3	0.6
			37	0.7	0.2	0.6
			120	0.9	0.4	1.0
			141	0.9	0.3	0.9
			144	0.8	0.3	0.6
			149	1.1	0.7	0.9
			150	1.1	0.3	0.9
			151	0.4	0.1	0.2
Hydro-flex Tester--BZ	166	0.5				
	48	0.5	49	0.5	0.1	0.3
Personal			40	0.8	0.2	0.7
			137	1.0	0.3	0.7
			139	1.9	0.7	1.5
			152	1.4	0.7	1.1
			153	0.9	0.3	0.7

Certain-Teed

Operation	Impinger		Membrane Filter			
				Fibers/cc		
	Sample #	mppcf	Sample #	Total	10 μ+	>5μ
Pipe Finishing (cont.)						
Pipe Handler						
Personal			142	1.4	0.3	1.1
X-mas—Gen.	204	0.1	206	0.2	0.0	0.0
	J205	0.1	M207	0.7	0.2	0.2
	147	0.8	146	1.1	0.5	0.5
	J148	0.6	M145	0.4	0.2	0.4
Beller						
Personal			45	1.5	0.5	1.4
			47	1.1	0.4	0.8
			140	1.1	0.5	1.0
Coupling Finishing						
Saw Operator—BZ	165	0.2	164	2.2	0.8	1.6
Personal			57	6.7	1.8	5.1
			64	4.2	1.5	3.5
			155	3.4	1.0	2.5
Lathe Operator						
Personal			67	3.9	1.8	3.6
			68	4.2	1.8	3.6
			69	3.1	1.1	2.4
			71	2.2	1.3	1.9
Boring Machine—BZ	169	0.5	168	2.3	0.8	1.6
	61	1.7	62	1.3	0.4	1.2
Personal			65	4.9	1.8	4.1
			72	4.4	2.0	3.9
			73	3.0	1.6	2.8
			143	1.9	0.7	1.5
Drill Press—BZ	170	0.7	171	1.3	0.7	0.9

Certain-Teed

Operation	Impinger		Membrane Filter			
				fibers/cc		
	Sample #	mppcf	Sample #	Total	10 μ+	>5μ
Coupling Finishing (cont.)						
PH Tester						
Personal			58	0.5	0.2	0.4
Checker						
Personal			66	11.7	4.0	9.0
X-mas--Gen.	208	0.7	210	0.7	0.0	0.4
	J209	0.4	N211	1.3	0.7	0.9
Epoxy						
Assembler						
Personal			70	1.3	0.4	1.0
Packing						
Stack Builder						
Personal			55	0.2	0.1	0.1
			60	2.4	1.0	1.8
Fork lift						
Personal			56	1.8	0.4	1.3
			59	0.4	0.1	0.3
			156	1.3	0.4	1.0
Miscellaneous						
Inspector						
Personal			46	1.3	0.4	0.9
			154	1.4	0.2	1.0
Mechanic						
Personal			109	6.9	1.7	3.9

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16. Abstract (Limit: 200 words)

Air samples were analyzed at Certain-Teed Products Corporation (SIC-3292) in the St. Louis, Missouri, in December, 1965. Personal samples were taken by membrane filter, and breathing zone and general air samples were taken by impinger. Impinger results ranged from 0.1 million particles of dust per cubic foot (mppcf) in the pipe finishing operation to 3.7mppcf at the grinder location in warehouse and mixing. Membrane filters concentrations ranged from a total of 0.2 fibers per cubic centimeter (f/cc) in pipe finishing to 120.8f/cc at a fiberman location in warehouse and mixing. Other operations monitored included pipe forming, curing, coupling finishing, expoxy, and miscellaneous. All dust concentrations measured by impinger were lower than the 5mppcf threshold limit value.

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