ESIS, Inc.
a CIGNA company

1341 W. Mockingbird Lane
Suite 903E
Dallas, TX 75247
(214) 631-4919

April 17, 1985

Mr. Terry Lohman
Plant Manager
J-M MANUFACTURING
Denison, TX 75020

Re: ESIS 51-180

Dear Mr. Lohman:

On March 18 and 19, 1985, I visited your plant to conduct an Environmental Health Survey. As a result of this visit, I am submitting the attached recommendation which I discussed with you. This recommendation should receive your immediate attention and consideration.

You will also find the results of the Environmental Health Report attached. This report contains the results of our survey and is an indication of the environmental health conditions that existed at that time.

I wish to thank you and your staff for the cooperation that was extended during the course of this visit.

Will you please advise us or confirm the actions you plan to take regarding these recommendations.

Very truly yours,

Aileen Teng

Aileen Teng
Certified Industrial Hygienist

AT/sh

cc: Dr. E. Edward Wang, Ph.D.
J-M Manufacturing Co., Inc.
A/C Pipe Corp.
1051 Sperry Rd.
Stockton, CA 95206

Ms. Beth Ingleston
Alexander & Alexander of New York
1185 Avenue of the Americas
New York City, NY 10013

APR. 19 1985

D 002244

CIGNA

NAME:	LOCATION:
J-M Manufacturing	Denison, Texas

85-1 The asbestos exposure levels were all within the current OSHA eight hour permissible exposure limit of two fibers/cc. OSHA issued a proposed standard for asbestos in April 1984 to lower the permissible exposure limit to either 0.2 fibers/cc or 0.5 fibers/cc. It is expected that a new standard will be promulgated in the summer of 1985.

It is recommended that the OSHA proposed standard be used as a guideline to evaluate the worker's exposure. The sample results indicated that ten employees were exposed to asbestos levels over 0.2 fibers/cc. Of the ten, three were exposed to levels over 0.5 fibers/cc.

The elevated dust concentrations may be caused by inefficient dust collecting systems, poor housekeeping and poor work practices. To assure that the dust collecting systems are functioning properly, scheduled inspections should be conducted. If a marked reduction in performance is noted, the cause of the reduction should be identified and corrected. An industrial type vacuum cleaner equipped with a high efficiency filter system should be used to keep the workplace as free from asbestos dust accumulation as possible.

Before the exposure levels can be reduced to within OSHA proposed permissible exposure limit, NIOSH approved dust masks should be worn by the workers whose exposure levels were over the proposed limit.

CP-1A98a Pld. in U.S.A.

ENVIRONMENTAL HEALTH REPORT

PREPARED FOR:

J-M Manufacturing
Denison, Texas

CONTRACT NUMBER:

ESIS 51-180

PREPARED BY:

Aileen Teng
Certified Industrial Hygienist
Loss Control Services, Inc.

ACCOMPANIED BY:

Terry Lohman, Plant Manager

DATES OF SURVEY:

March 18 and 19, 1985

ENVIRONMENTAL HEALTH REPORT

INTRODUCTION

On March 18 and 19, 1985, an industrial hygiene survey was conducted at J-M Manufacturing, Denison, Texas to evaluate the employee exposure to asbestos fibers associated with the manufacture of asbestos cement pipes. The survey was conducted at the request of J-M Manufacturing as part of an on-going asbestos monitoring program.

The standards, guidelines, methods, results, and discussion pertinent to this report follow.

STANDARDS & GUIDELINES

The results of this report are based on current OSHA standards and/or accepted state of the art industrial hygiene practices to give reasonable protection to the health and well being of your employees.

METHODS

Air sampling and analyses were conducted, using the following methods:

Air Contaminant	Vacuum Source	Flow Rate	Collection Medium	Sampling & Analyses Methods
Asbestos	Du-Pont P-2500 Sampling Pumps, MSA Model G Sampling Pumps, & Gilian Model HFS-113A Sampling Pumps	1.4 1.6 lpm	Open face AA filters	NIOSH P & CAM 239; PCM

lpm: liters per minute
PCM: Phase Contrast Microscopy, Porton Reticle; 450 x magnification.

Samples were collected in the workers' breathing zones to obtain samples indicative of actual employee exposure. Sampling pumps were calibrated prior to and after the sampling period.

All analyses were performed by Environmental Health Laboratory which is accredited by the American Industrial Hygiene Association.

RESULTS

Results of asbestos sampling are presented in Table I.

J-M MANUFACTURING, DENISON, TEXAS

ASBESTOS AIR SAMPLING DATA

JOB DESCRIPTION (J-M NO.)	EMPLOYEE NAME	DATE SAMPLED	AIR CONC. (fibers/cc)	TWA (1) (fibers/cc)	SAMPLE TIME (MIN.)	SAMPLE VOLUME (LITERS)	COMMENTS
13' Control Operator (D-2WE)	Jim Lang	3/18/85	0.087	0.087	223	334.5	
13' Utility Operator (D-8WE)	Paul Morrison	3/18/85	0.12	0.12	226	316.4	
13' Tender (D-1WE)	Philip French	3/18/85	0.22 0.22	0.22	114 106	175.56 159	
13' Head Curer (D-3WE)	Arthur Dawson	3/18/85	0.15 0.14	0.14	233 238	349.5 357	
13' Curer (D-3WE)	Betty Morrow	3/19/85	0.18	0.18	226	339	

(1) T.W.A. - The Time Weighted Average concentration for a normal 8 hour workday. This determination is based on the assumption that the air concentration during sampling period is representative of the exposure level for the entire shift.

J-M MANUFACTURING, DENISON, TEXAS

ASBESTOS AIR SAMPLING DATA

JOB DESCRIPTION (J-M NO.)	EMPLOYEE NAME	DATE SAMPLED	AIR CONC. (fibers/cc)	TWA (1) (fibers/cc)	SAMPLE TIME (MIN.)	SAMPLE VOLUME (LITERS)	COMMENTS
Salvage Truck Driver (D-10S)	Johnny Crain	3/18/85	0.085	0.085	243	364.5	
Willow Operator (D-7WE)	Danny Hunt	3/18/85	0.15	0.15	233	358.82	
Gen. Service Man Operating Salvage Grinder (D-8WE)	Gary Nell	3/19/85	0.24 0.29	0.27	123 114	189.42 175.56	
Steam Tank Operator	Emmett Morrison	3/19/85	0.055	0.055	239	334.6	
In-Process Inspector (D-13S)	Kevin Hannan	3/19/85	0.14	0.14	218	335.72	

(1) T.W.A. - The Time Weighted Average concentration for a normal 8 hour workday. This determination is based on the assumption that the air concentration during sampling period is representative of the exposure level for the entire shift.

J-M MANUFACTURING, DENISON, TEXAS

ASBESTOS AIR SAMPLING DATA

JOB DESCRIPTION (J-M NO.)	EMPLOYEE NAME	DATE SAMPLED	AIR CONC. (fibers/cc)	TWA (1) (fibers/cc)	SAMPLE TIME (MIN.)	SAMPLE VOLUME (LITERS)	COMMENTS
Large Coupling Cut Off Operator (D-15F)	Bill Barnes	3/19/85	1.3 1.5	1.4	223 227	343.42 364.98	
Small Coupling Cut Off Operator (D-23F)	Larry Lewis	3/18/85	1.2	1.2	252	378	
PVC Fitting Assembly Molder (D-11F)	Paul Franks	3/18/85	0.3	0.3	190	266	
PVC Fitting Assembly - Molding Swing Saw Operator (D-12F)	Donna Simpson	3/19/85	1.2	1.2	206	288.4	
Finishing Area Crew Leader	Bob Reynolds	3/19/85	0.081	0.081	226	339	

(1) T.W.A. - The Time Weighted Average concentration for a normal 8 hour workday. This determination is based on the assumption that the air concentration during sampling period is representative of the exposure level for the entire shift.

J-M MANUFACTURING, DENISON, TEXAS

ASBESTOS AIR SAMPLING DATA

JOB DESCRIPTION (J-M NO.)	EMPLOYEE NAME	DATE SAMPLED	AIR CONC. (fibers/cc)	TWA (1) (fibers/cc)	SAMPLE TIME (MIN.)	SAMPLE VOLUME (LITERS)	COMMENTS
MOA Operator (D-6F)	Gary Templeton	3/18/85	0.28 0.56	0.4	131 92	201.74 141.68	
UPL #1 Unit Loader (D-3F)	Benny Stanley	3/18/85	0.16	0.16	222	333	Handling 6" class 150 pipes
UPL #2 Operator (D-2F)	Billy Gordon	3/18/85	0.15	0.15	224	336	Handling 12" class 150 pipes
UPL #2 Helper	Glen Weger	3/19/85	0.13 0.13	0.12	232 236	357.28 363.44	Handling 12" class 150 pipes Handling 6" class 200 pipes on UPL #1
UPL #2 Inspector (D-11S)	Billy Sexton	3/19/85	0.42	0.42	231	346.5	Handling 12" class 200 pipes

(1) T.W.A. - The Time Weighted Average concentration for a normal 8 hour workday. This determination is based on the assumption that the air concentration during sampling period is representative of the exposure level for the entire shift.

J-M MANUFACTURING, DENISON, TEXAS

ASBESTOS AIR SAMPLING DATA

JOB DESCRIPTION (J-M NO.)	EMPLOYEE NAME	DATE SAMPLED	AIR CONC. (fibers/cc)	TWA (1) (fibers/cc)	SAMPLE TIME (MIN.)	SAMPLE VOLUME (LITERS)	COMMENTS
UPL #2 Hydrotester Operator	Lee Crain	3/18/85	0.23	0.23	229	343.5	Handling 12" class 150 pipes
UPL #2 Unit Loader (D-5F)	Ellis Pittman	3/19/85	0.19	0.19	226	348.04	Handling 12" class 150 pipes
UCL #1 Operator (D-16F)	Jim Melvin	3/18/85	0.14	0.14	200	300	
Large Coupling Lathe #347	Larry Hallmark	3/18/85	0.10	0.10	266	404.64	
Slash Saw Operator (D-1F)	Dock Dill	3/19/85	0.3	0.3	208	312	

(1) T.W.A. - The Time Weighted Average concentration for a normal 8 hour workday. This determination is based on the assumption that the air concentration during sampling period is representative of the exposure level for the entire shift.

J-M MANUFACTURING, DENISON, TEXAS

ASBESTOS AIR SAMPLING DATA

JOB DESCRIPTION (J-M NO.)	EMPLOYEE NAME	DATE SAMPLED	AIR CONC. (fibers/cc)	TWA (1) (fibers/cc)	SAMPLE TIME (MIN.)	SAMPLE VOLUME (LITERS)	COMMENTS
Finishing Area Platform Driver (D-30F)	Jerry Bruce	3/19/85	0.16	0.16	237	379.2	
Coupling Testing Area Inspector	James Bush	3/19/85	0.17	0.17	218	327	
Sweeper Operator (D-6S)	Jack Bartley	3/19/85	0.18	0.18	238	357	
Mechanic (D-26S)	M.E. Abernathy	3/19/85	0.12	0.12	224	336	
Electrician (D-15S)	W.L. McCleskey	3/19/85	0.10	0.10	230	345	

(1) T.W.A. - The Time Weighted Average concentration for a normal 8 hour workday. This determination is based on the assumption that the air concentration during sampling period is representative of the exposure level for the entire shift.

DISCUSSION

The production line for 10 foot pipes was shut down permanently in November 1984. As a result, mono saw, fitting lathe, mono lathe, radial drill, nipple lathe, perforator drill, and K & C lathe are no longer in operation.

As can be seen from the sample results presented in the Results section, all the exposure levels were within current OSHA eight hour permissible exposure limit of two fibers per cubic centimeter of air (fibers/cc). OSHA issued an emergency temporary standard on asbestos in November 1983 which lowered the permissible exposure limit to 0.5 fibers/cc. The emergency temporary standard was declared invalid by court in March 1984. Subsequently, OSHA issued a proposed standard for asbestos in April 1984 to lower the permissible exposure limit to either 0.2 fibers/cc or 0.5 fibers/cc. It is expected that a new standard will be promulgated in the summer of 1985 to lower exposure limit to asbestos to 0.2 fibers/cc or 0.5 fibers/cc.

It is recommended that the OSHA proposed standard be used as a guideline to evaluate the workers' exposure. The sample results indicated that ten employees were exposed to asbestos levels over 0.2 fibers/cc. Of the ten, three (large coupling cut-off operator, small cut-off operator, and molding swing saw operator) were exposed to levels over 0.5 fibers/cc.

In finishing area, asbestos level of each location sampled was higher than the levels found in the previous industrial hygiene surveys. The elevated dust concentrations may be caused by ineffective dust collecting systems, poor housekeeping, and poor work practices.

To assure that the dust collecting systems are functioning properly, scheduled inspections should be conducted. If a marked reduction is noted, the cause of the reduction should be identified and corrected. The reduction in performance can often be traced to one or more of the following items:

A. Reduced performance by the exhaust fan caused by reduced speed due to belt slippage, reversed rotation, wear on rotor or casing, or accumulation on rotor or casing that would obstruct air flow.

B. Reduced performance caused by defects in the exhaust piping, such as accumulations in branch or main ducts due to insufficient conveying velocities, condensation of oil or water vapors on duct walls, adhesive characteristics of material exhausted or leakage losses caused by loose clean-out doors, broken joints, holes worn in duct, poor connection to exhauster inlet, accumulations in ducts or on fan blades.

C. Losses in suction velocity can also be charged to additional exhaust points added to the system and change of setting of blast gates in branch lines.

DISCUSSION (Continued)

D. Reduced performance may be caused by increased pressure loss through dust collector due to lack of maintenance, improper operation, wear, etc.

In addition to the dust collecting systems, a wet method can be used effectively to control asbestos dust. Flooding or spraying at the point of dust generation (e.g., large coupling cut-off, small coupling cut-off, molding swing saw) is a typical method. The sprays, nozzles, and runoff controls need to be precisely designed for compatibility with the machine.

A mobile floor sweeper is used to prevent workplace from asbestos dust accumulation. However, the sweeper can only clean aisles and open floors. Dusts accumulated under and between machines and on the surface of the machines and workbenches cannot be removed. It is recommended that an industrial type vacuum cleaner equipped with a high efficiency filter system (99% efficienty for 0.3 μm diameter aerosols) be used to keep the workplace as free from asbestos accumulation as possible. Appendix I contains literature on one of the asbestos vacuum cleaners on the market.

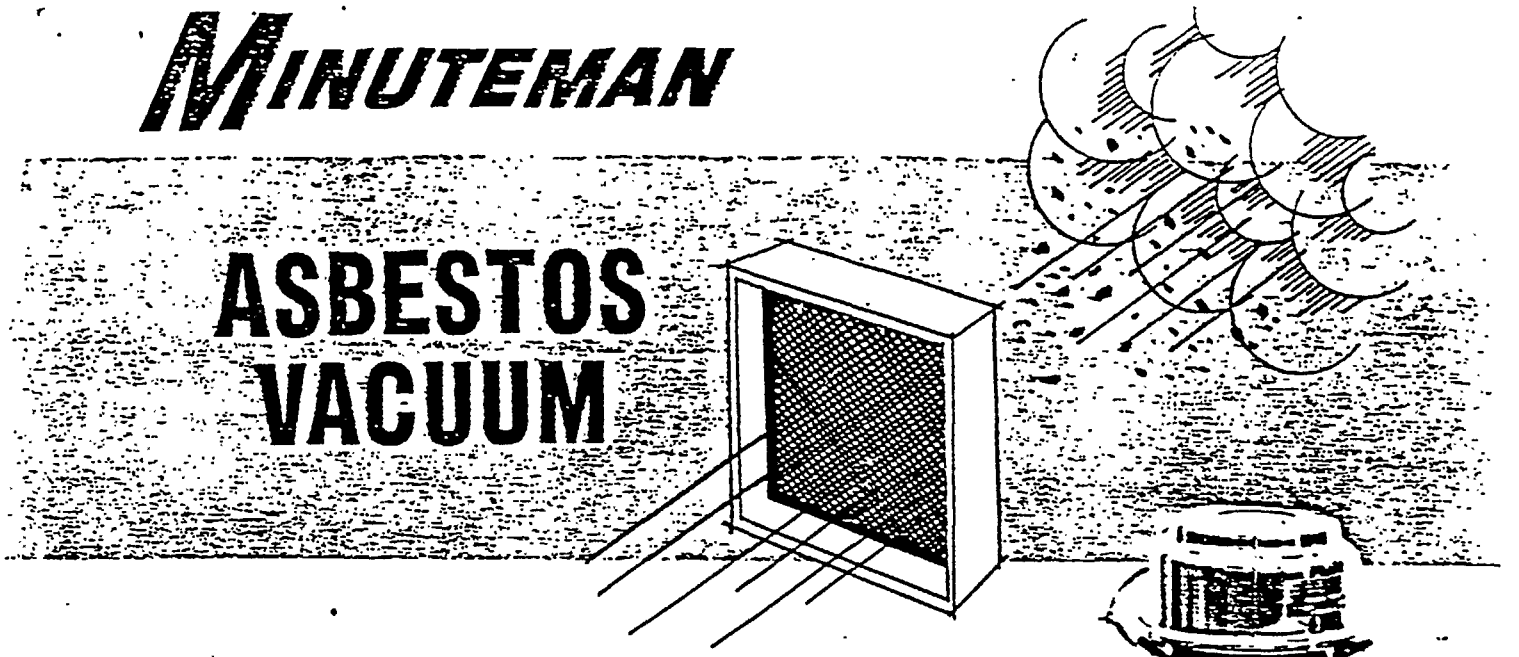
NIOSH approved dust masks should be made available to the workers and the use of the dust masks encouraged. The workers whose exposure levels were over OSHA proposed permissible exposure limit should be required to wear the dust masks until the exposure levels are reduced to within the acceptable limit.

CONCLUSION

Implementation of the above mentioned recommendations should assist you in providing a more healthful working environment and reduce the potential for occupational disease.

MINUTEMAN

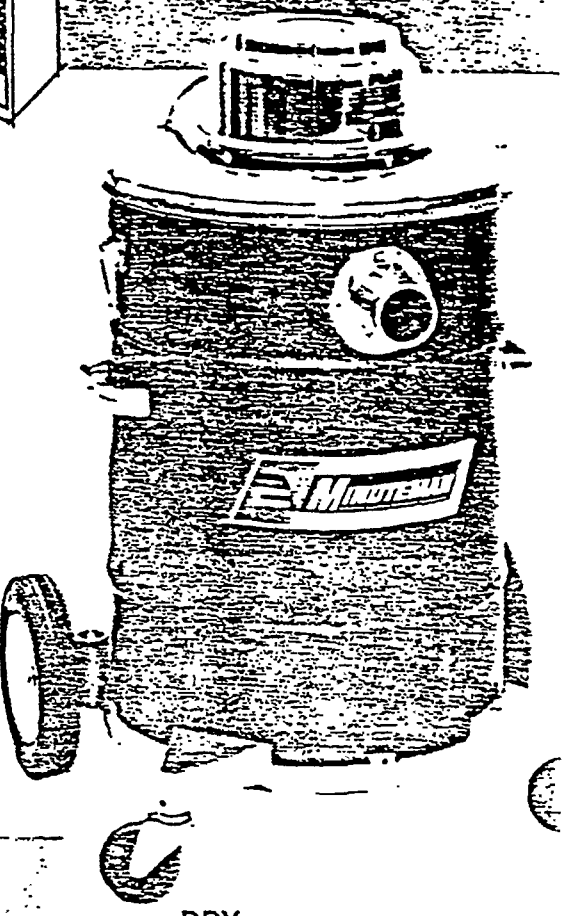
ASBESTOS VACUUM

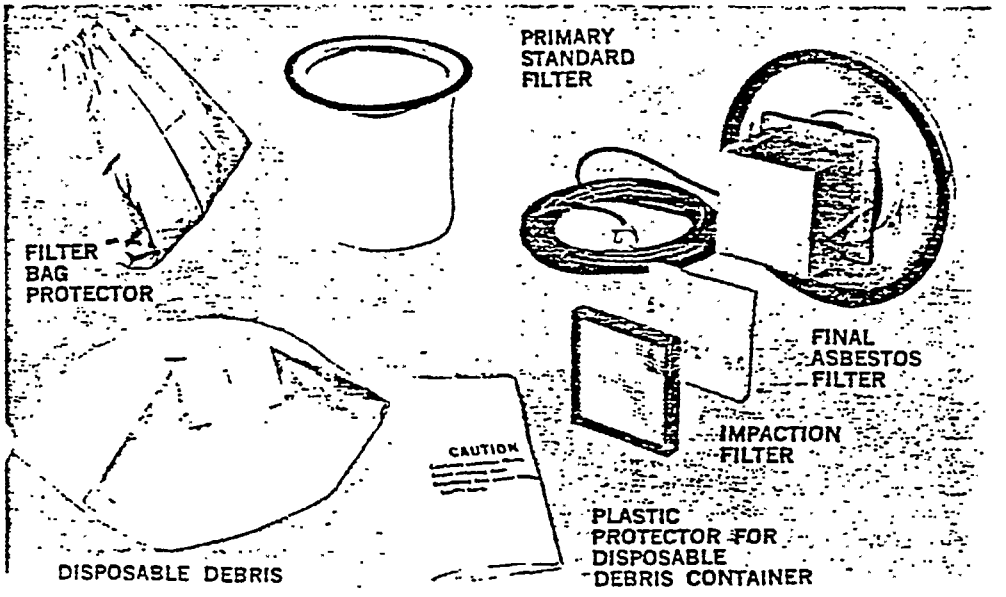


MEETS OR EXCEEDS OSHA REQUIREMENTS FOR REMOVING AND TRAPPING DANGEROUS

ASBESTOS DUST AND FIBERS

AND OTHER HAZARDOUS DUST





DRY USE ONLY

UL

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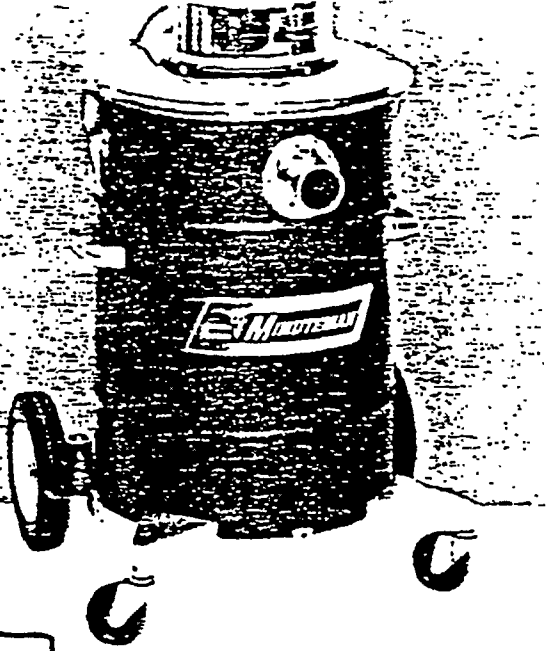
Specially engineered to provide efficient and dependable protection against the serious hazard of asbestos dust and other health endangering airborne pollutants.

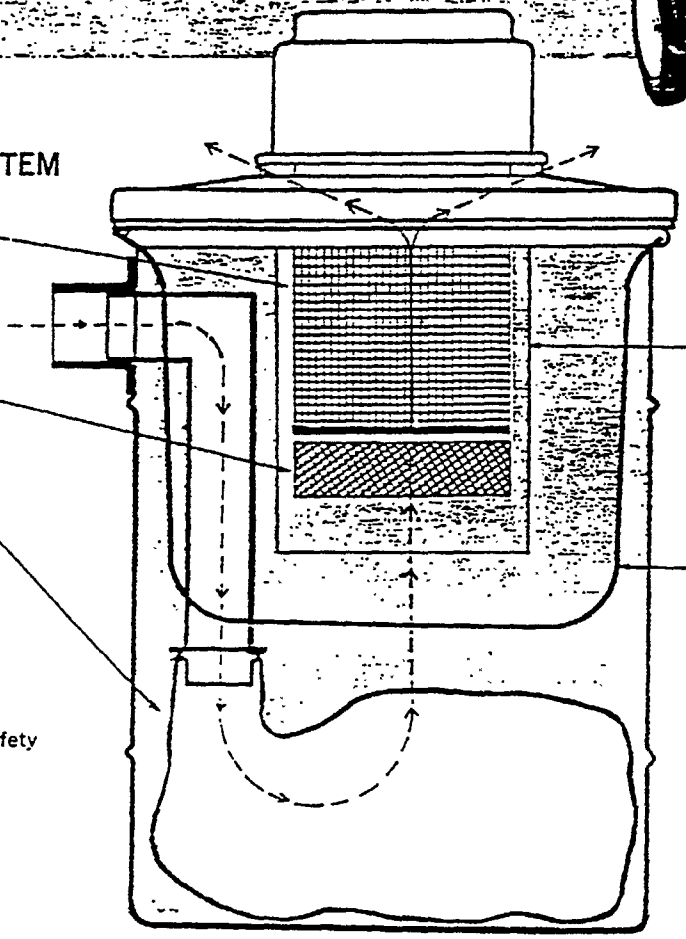
SEE OTHER SIDE

MINUTEMAN

ASBESTOS VACUUM



5 STAGE FILTRATION SYSTEM



The well established hazards of asbestos dust have resulted in strict safety regulations by OSHA and Federal Register, Volume 39, No. 125 dated June 27, 1974 Section No. 1910. 3a (b2) states that, effective July 1, 1976, "The 8-hour time weighted average airborne concentrations of asbestos fibers to which an employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in Paragraph (e) of this section"

The Minuteman ASBESTOS and irritant dust vacuum has been specially designed to aid in complying with these Federal regulations. A certified three stage filtering system provides an efficiency rating of 99.999% on particles of 5 micrometers in size — exceeding OSHA requirements.

While control of asbestos dust has come under closest government scrutiny, this specially filtered vacuum is also highly beneficial in the filtering of other toxic airborne pollutants such as: petroleum catalyst dust, cement dust, foundry dusts, lime kiln dusts, insecticide dusts, fertilizer plant dusts and fumes, pulverized coal dust, ground limestone dust, asphalt paving dusts and others.

SPECIFICATIONS

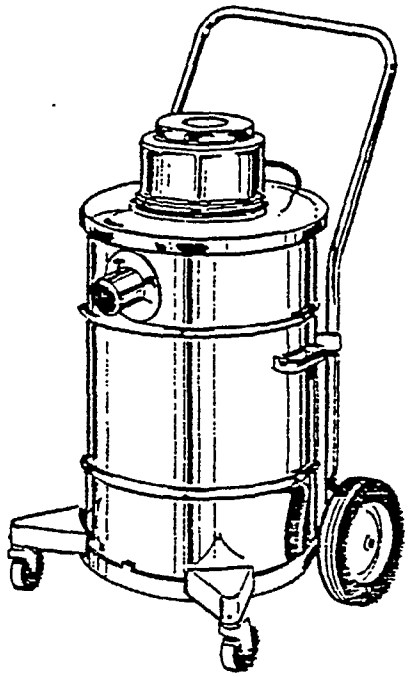
Tank	AMPS 115V	Static Lift	Air Volume	Height	Cord
15 gal.	7	75"	91 CFM	32"	50' 16-3

Specifications According To Manufacturer's Ratings

AMERICAN CLEANING EQUIPMENT CORPORATION
111 South Route 53, Addison, Illinois 60101 (312) 627 6900

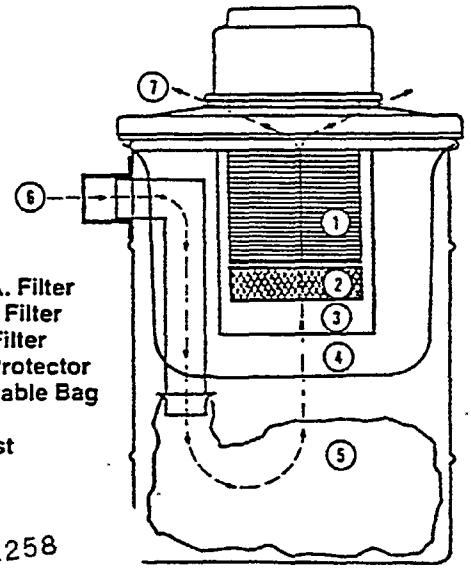
Series 800 Critical Filter Vacuums

		Price
C-80315-01	**Minuteman Asbestos Vac — H.E.P.A. Filter Vacuum** (115V, 15 Gal., Stainless Steel, Dry Only) Includes: 75021-90 — Lid Assembly (115V) w/H.E.P.A. Filter $483.00 80501-50 — Cloth Filter $ 36.50 75022-01 — Tank Assembly Stainless Steel, 15 gal. $368.70 38004-90 — Bag frame $ 7.70 76059-90 — Impact filters (10) $ 23.35 80503-80 — Filter Protectors (10) $ 16.80 76059-80 — Disposable Bags (10) $ 23.35 76104-20 — Plastic Bags (50) $ 18.65 76059-60 — H.E.P.A. (Replacement) $194.00	$786.00
C-80315-02	**Minuteman Asbestos Vac — H.E.P.A. Filter Vacuum** (220V, 15 Gal., Stainless Steel, Dry Only) Same as (C-80315-01) except 75021-91 lid assembly (220V) $493.00	$796.00
C-80315-03	**Minuteman Asbestos Vac — H.E.P.A. Filter Vacuum** (115V, 15 Gal., Painted, Dry Only) Includes: 75021-90 — Lid Assembly (115V) w/H.E.P.A. Filter $483.00 80501-50 — Cloth Filter $ 36.50 75022-00 — Tank Assembly Painted, 15 gal. $229.00 38004-90 — Bag Frame $ 7.70 76059-90 — Impact filter (10) $ 23.35 80503-80 — Filter Protectors (10) $ 16.80 76059-80 — Disposable Bags (10) $ 23.35 76104-20 — Plastic Bags (50) $ 18.65 76059-60 — H.E.P.A. (Replacement) $194.00	$696.00
C-80315-04	**Minuteman Asbestos Vac — H.E.P.A. Filter Vacuum** (220V, 15 Gal., Painted, Dry Only) Same as (C-80315-03) except 75021-91 lid assembly (220V) $493.00	$706.00



ASBESTOS VACUUMS

Because it meets or exceeds OSHA requirements for cleaning the air of asbestos and other toxic and noxious dusts, this dry-only vacuum can be used in offices, schools and industrial areas where daily or weekly removal of sub-micron particles is necessary. Each Minuteman Asbestos Vacuum contains 5 different filters: disposable paper bag coarse filter (standard in 15 gal. models) for the bulk of the particles, impact filter, H.E.P.A. filter, primary cloth filter and paper filter protector. Heavy-gauge plastic drum-liner bags may be used in the 30 and 55 gallon models to safely remove large-volume pick-ups. While specifically designed for asbestos particles, this vacuum is also effective in filtering other airborne pollutants such as cement, foundry and lime kiln dusts, insecticides, fertilizer dusts, coal dust, limestone dusts, and many others. With an efficiency rating of 99.999% on particles of 5 micrometers, the Asbestos Vacuum is particularly useful for cleaning up after insulation operations on pipes, in removing asbestos-covered ceiling dust to prevent "snowing" and for vehicle maintenance procedures involving brakes, clutches and other asbestos-loaded material. Each unit features a 2 stage by-pass motor, front casters, 8" rear wheels and a carriage handle. An optional starter tool kit is recommended for each unit.



① H.E.P.A. Filter
② Impact Filter
③ Cloth Filter
④ Filter Protector
⑤ Disposable Bag
⑥ Intake
⑦ Exhaust

D 002258

ies 800 Critical Filter Vacuums — Asbestos Vac 30/55

#	General Description		Price
30-01	**Minuteman Asbestos Vac — H.E.P.A. Filter Vacuum** (115V, 30 Gal., **Painted**, Dry Only) Includes: 75021-90 — Lid Assembly (115V) w/H.E.P.A. Filter — $483.00 80504-70 — Cloth Filter — $ 46.30 80601-70 — Adapter Ring (30 gal.) — $102.00 90007-80 — Tank Assembly Painted. 30 gal. — $126.00 90004-80 — Dolly Cart — $137.00 76059-90 — Impact filter (10) — $ 23.35 80503-80 — Filter Protectors (10) — $ 16.80 80503-70 — Plastic Drum liners (12) — $ 23.25 76059-60 — H.E.P.A. filter (Replacement) — $194.00		$957.00
30-02	**Minuteman Asbestos Vac — H.E.P.A. Filter Vacuum** (220V, 30 Gal., **Painted**, Dry Only) Same as (C-80330-01) except 75021-91 lid assembly (220V) — $493.00		$967.00
55-01	**Minuteman Asbestos Vac — H.E.P.A. Filter Vacuum** (115V, 55 Gal., Painted, Dry Only) Includes: 75021-90 — Lid Assembly (115V) w/H.E.P.A. filter — $483.00 80504-70 — Cloth Filter — $ 46.30 80601-80 — Adapter Ring (55 gal.) — $102.00 90001-50 — Tank Assembly Painted. 55 gal. — $ 92.00 90004-80 — Dolly Cart — $137.00 76059-90 — Impact filters (10) — $ 23.35 80503-80 — Filter Protectors (10) — $ 16.80 80504-60 — Plastic Drum liners (12) — $ 25.70 76059-60 — H.E.P.A. (Replacement) — $194.00		$926.00
55-02	**Minuteman Asbestos Vac — H.E.P.A. Filter Vacuum** (220V, 55 Gal., Painted, Dry Only) Same as (C-80355-01) except 75021-91 lid assembly (220V) — $493.00		$936.00
39-00	**#7a Tool Kit For Asbestos Vac** (1½", Dry only) Includes: a. 80101-00 — 10' x 1½" Hose — $ 40.40 b. 80001-50 — 1½" Wand (Operator's handle) — $ 28.75 c. 80007-00 — Gulper Tool — $ 38.00 d. 80002-40 — 3" Round Brush — $ 14.75 e. 80011-60 — 1½" x 8" Swivel Connector — $ 14.75 f. 76059-80 — 10 Disposable Paper Bags — $ 23.35 g. 76059-90 — 12 Impaction Pre-Filters — $ 23.35 h. 76104-20 — 50 Plastic Bags — $ 18.65 i. 80503-80 — 12 Filter Protectors — $ 16.80 *No substitution of tools.*		$218.00