IN RE: ABRAMS November 1992

INDUSTRIAL HYGIENE AND TOXICOLOGY

GULF OIL CORPORATION
MEDICAL DEPARTMENT
PITTSBURGH, PA.

JUNE 1974

BULLETIN

INDUSTRIAL HYGIENE STANDARD NO. 25A

OCCUPATIONAL SAFETY AND HEALTH ACT - STANDARD FOR EXPOSURE TO ASBESTOS DUST

Attached is a copy of the OSHA Standard 1910.93a for Exposure to Asbestos Dust as printed in the Federal Register on October 18, 1972. Some of the most important aspects of this regulation are highlighted below:

1. AIR SAMPLING

   (a) Employee exposures (see Table I) must have been monitored at all locations where asbestos fibers are released to the atmosphere to determine whether exposures are within limits.

   (b) At intervals no greater than 6 months, employees whose exposure to asbestos may reasonably be foreseen to exceed the criteria, must be re-monitored.

   (c) The following types of air samples should be collected:

      (1) Personnel monitoring - 15 to 30 minute samples to determine peak concentrations (not to exceed 10 fibers/cc).

      (2) Long-term samples from 90 to 480 minutes to determine the 8-hour time weighted average (TWA) (not to exceed 5 fibers/cc) concentrations.

      (3) Environmental monitoring in the general work area to determine the 8-hour TWA concentrations.

Replacement for Industrial Hygiene Standard No. 25A, dated December 1972

03114727

PLAINTIFF'S EXHIBIT WH-519

November 1992
IN RE: ASBESTOS

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5. ASBESTOS SUBSTITUTES

No asbestos-bearing insulation materials (except mastic or asphalt base materials) should be used in new installations or as replacement material in existing plants.

Please see the attached list of substitute materials (Table II) and asbestos-free products in use by Gulf (Table III).

6. ATTACHMENTS

(a) Table I -- Typical Asbestos Handling Practices

(b) Table II -- Asbestos-Free Substitutes

(c) Table III -- Asbestos-Free Products Currently In Use By Gulf

(d) Table IV -- OSHA Standard for Exposure to Asbestos Dust 1910.93a

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IN USE AS OF November 1992

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GULF OIL CORPORATION
MEDICAL DEPARTMENT
PITTSBURGH. PA.

June, 1974

INDUSTRIAL HYGIENE STANDARD NO. 25

BULLETIN

THERMAL INSULATING MATERIALS PRODUCTS CONTAINING ASBESTOS

INTRODUCTION

The modern mass production of hundreds of natural and synthetic materials, such as asbestos, has brought the need to protect workers from certain health risks, known or suspected.

Manufacturers of Thermal Insulation Products containing asbestos have for years been taking protective measures to eliminate excessive exposures to inhalation of dusts that may be injurious.

The OSHA Asbestos Exposure Standard now in effect states that the 8-hour time-weighted average (TWA) airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed 5 fibers longer than 5µm per cc of air. In addition, the ceiling concentration above which no employee shall be exposed at any time is 10 fibers longer than 5µm per cc of air.

Note that effective July 1, 1976, the TWA concentration is reduced to 2 fibers from the current 5 fibers longer than 5µm per cc of air.

(See OSHA 9310.93a, section (a) Definitions, (b) Permissible Exposure to Airborne Concentrations of Asbestos Fibers).

Based on the fact that all materials can be handled safely, the National Insulation Manufacturers Association recommends the following practices for handling and applying Thermal Insulation Products containing asbestos and/or other potentially injurious materials to protect the worker. A section on demolition has been added, taken from Environment Protection Agency Asbestos Emission Standard 40 CFR 61, dated May 1974.

CONTRACTORS

Insulation contractors and applicators are urged to study these recommended practices carefully and to see that they are observed by all workers handling insulation materials. As with Safety Regulations, it is in the interest of both contract employer and contract employee to see that health protection practices are strictly observed.

GULF 6209

Replacement for Industrial Hygiene Standard No. 25, dated February 1969

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debris off cartons. Repack odd lot pieces. Close cartons.

Fabrication in Warehouse and Job Site Shops

(See OSHA 1910.93a, Section (c) Methods of Compliance, (2) Work Practices, i) Wet Methods.

1. Open and remove the material from cartons with care.

2. Handle and stack pieces of material in a manner that will avoid generating dust and breakage.

3. Mechanical dust collecting systems adequately designed to remove dust at the source should be installed on power-operated, fixed and portable equipment in the warehouse shop and/or in the job site shop.

4. All machines should be furnished with suitable waste containing equipment for the collection of scrap and waste to prevent the material from falling on the floor and generating dust.

5. Shop-fabricated pieces of Thermal Insulation such as fittings, segments, etc., should be placed in containers. Care should be taken when handling these pieces during piling, stacking, and packing.

6. Containers should be closed after packing and remain closed until the material is used.

Application Procedures

1. Unpacking and application of the material should be done in a manner that will minimize airborne dust.

2. Avoid dropping, throwing, or unnecessary rough handling of insulation materials.

3. Keep floors and surfaces clean of scrap, shavings, and debris. Put unusable material into waste containers immediately.

4. Hand sawing, cutting, jacket stripping, etc., should be done in a manner that will create minimal airborne dust. Use of proper methods and tools will help considerably towards dust abatement.

5. When working in confined spaces, portable dust collectors or exhaust blowers should be provided to remove dust from the source.

6. If conditions prevent collecting or exhausting dust from the source, use exhaust blowers to provide general air changes in the room.

7. Avoid exhausting into other working areas.

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7. Wet the material and mix into a slurry as quickly as possible.

8. When mixing cement in a confined space where proper ventilation is inadequate, respirators should be worn.

Cleaning

1. Bag breakage, cleaning up dry cement and discarding bags at the mixing area should be done in the same manner as recommended under Warehousing, Storage, and Handling.

2. Wet down tools, mortar boxes, wheelbarrows, mixing containers, and any spillage before scraping and cleaning.

3. Cements should be handled wet whenever possible. Wet material will create no dust problem.

SPRAYING OF THERMAL INSULATION

(See OSHA 9310.93a Section (c) Methods of Compliance, (2) Work Practices ii) Spraying Demolition or Removal.

Spraying Areas

Spraying of Thermal Insulation Products containing asbestos requires special precautionary measures. Refer to the Sprayed Mineral Fiber Manufacturers Association for Sprayed Fiber Application Practices.

1. The equipment and machinery to be sprayed should be shielded by adequate wind breaks and, where practicable, drop cloths to prevent excessive dust and contamination in adjacent areas.

2. Workers not engaged in the spraying operations should wear respirators when entering an area within 15 feet of the spraying machine, nozzle or equipment.

3. Where Sprayed Fiber Application Practices cannot be followed and excessive airborne dust is generated, it is recommended that portable mechanical exhaust ventilation be used to remove airborne dust. Exhaust must be located to avoid contamination of other occupied areas.

Application

1. All personnel in the immediate area engaged in the machine feeding and spraying operation should wear respirators, whether in confined or open areas, ventilated or not ventilated.

2. Respirators should be worn after the spraying operation has been concluded and until the generated dust concentration has cleared.

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3. Where applicable, portable mechanical exhaust ventilation should be used to remove airborne dust.

4. Avoid unnecassary rehandling of scrap.

5. Locate truck, dumpster bucket or final disposal equipment as close to stripping site as possible.

6. Wet down scrap material before shoveling, hauling, or dumping.

7. Do not permit accumulation of scrap and debris on floor and other surfaces.

8. Vacuum equipment is recommended for cleaning up during and after stripping.

Other Workmen

1. Personnel not involved in the stripping and tearing off operation should not be permitted in the stripping area.

2. If it is essential for other workmen to be in the work area, respirators should be worn by them.

DEMOLITION

The following is quoted from the EPA Asbestos Emission Standard 40 CFR 61 as revised May 1974.

61.21j "Demolition" means the wrecking or removal of any load-supporting structural member.

61.22c 2 i Friable asbestos materials, used to insulate or fireproof any boiler, pipe, or load-supporting structural member, shall be wetted and removed from any building, structure, facility, or installation subject to this paragraph before wrecking of load-supporting structural members is commenced. Boilers, pipe, or load-supporting structural members that are insulated or fireproofed with friable asbestos materials may be removed as units or in sections without stripping or wetting, except that where the boiler, pipe, or load-supporting structural member is cut or disjointed, the exposed friable asbestos materials shall be wetted. Friable asbestos debris shall be wetted adequately to insure that such debris remains wet during all stages of demolition and related handling operations.

61.22c 2 ii No pipe or load-supporting structural member that is covered with friable asbestos insulating or fireproofing material shall be dropped or thrown to the ground from any building, structure, facility, or installation subject to this paragraph, but shall be carefully lowered or taken to ground level.

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TABLE I

ASBESTOS-FREE SUBSTITUTES

Product & Manufacturer	Thermal Conductivity Btu/hr/ft²/F/in.	Composition	Limits F	Price ¢/Board
A.F. Uniblock, Holmes Insulations, Ltd.	0.50 @ 400 F 0.84 @ 1 000 F	Mineral Wool and Glass Fibers	1,900	37 CL
Carey Temp 2000	0.70 @ 500 F 0.76 @ 750 F 0.84 @ 1,000 F	Calcined Diatomaceous Silica with Glass Fibers as Binders	2 000	39.3 LCL 34.8 CL
H.T. Block - 48 Forty Eight Insulations, Inc.	0.42 @ 400 F 0.90 @ 1,200 F	Mineral Fibers	1,900	36 LCL 28 CL
MF Pipe - 48 Forty Eight Insulations, Inc.	0.30 @ 300 F 0.50 @ 700 F	Mineral Fibers	1,200	88¢/lin ft-6" p
New Carey Temp 1500	0.42 @ 300 F 0.64 @ 700 F	Expanded Perlite	1,500	40.2 LC 35.7 CL
1200 Block - 48 Forty Eight Insulations, Inc.	0.30 @ 300 F 0.52 @ 700 F	Mineral Fibers	1,200	20 LC 15 C
Super Cal Temp. NA (Pabco Industrial Products)	0.40 @ 300 F 0.67 @ 800 F	Uncalcined Diatomaceous Earth & Mineral Fibers	1 200	28 CL
Unibest Pittsburgh Corning Corp.	0.41 @ 300 F 0.65 @ 700 F	Mineral Fibers	1 500	40 LC 32 CL

LCL - Less than Car Load Lts.
CL - Car Load Lots

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TABLE II

ASBESTOS-FREE PRODUCTS

Material Designation	Manufacturer	Max. Temp. F	Composition
J-M Microlite	Johns Manville	350	Fibrous Glass
J-M Microtex	Johns Manville	350	Fibrous Glass
J-M Microlok	Johns Manville	500	Fibrous Glass
J-M 1000° Spin-Glas	Johns Manville	1,000	Fibrous Glass
J-M Cerafelt	Johns Manville	2,300	Fibrous Glass
J-M Zelie LW	Johns Manville	2,000	Kaolin - 70%
Aerotube (Armstrong Cork)	Johns Manville	220	Expanded rubber
57 Adhesive (Armstrong Cork)	Johns Manville		Synthetic rubber, phenolic resin, toluene, naphtha
Banroc (Keene)	Johns Manville	1,000	Mineral wool and metal
Monobloc (Keene)	Johns Manville	1,700	Mineral wool and clay
Fiberglas Aerocor	Fiberglas Canada, Ltd.	450	
Fiberglas Boards AF-530	Fiberglas Canada, Ltd.	450	
Fiberglas Pipe Covering	Fiberglas Canada, Ltd.	600	Glass fibers with
Fiberglas Blanket	Fiberglas Canada, Ltd.	950	phenol formaldehy
Fiberglas AF-530	Fiberglas Canada, Ltd.	450	binder
Carey Temp	Philip Carey	1,500	Expanded perlite glass
Carey Temp 2,000	Philip Carey	2,000	Fibers, clay and phenolic
Thermoglas Pipe Covering	Philip Carey	350	Binders
Careytemp Adhesive	Philip Carey		Fibrous adhesive
Foamglas	Pittsburgh Corning	800	Cellular Glass
Foamthane	Pittsburgh Corning	(-300 to 200)	Rigid Polyurethar
Tab-lok	Eagle Picher	1,400	Mineral wool with phenolic binder
Sauereisen No. 31	Sauereisen Cements	2,000	Silica base and sodium silicate
Lumnite	Universal Atlas	2,600	Alumina, titania silica and calci oxide
Resco AA-22	Resco Products	3,400	Alumina and P_2O_5
Resco RS-5A	Resco Products	2,700	Alumina, silica and CaO
Resco RS-7	Resco Products	2,100	Alumina, silica and CaO
Resco RS-17-A	Resco Products	3,400	Alumina and CaO

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TABLE II

ASBESTOS-FREE PRODUCTS

(cont'd)

Material Designation	Manufacturer	Max. Temp F	Composition
Plicast KL Mix	Plibrico Canada, Ltd.	2,900	
L.W.I. - 20	Plibrico Canada, Ltd.	2,000	Alumina Silica,
L.W.I. - 24	Plibrico Canada, Ltd.	2,450	CaO, TiO_2, Na_2O
Super Air Bond	Plibrico Canada, Ltd.	3,200	Fe_2O_3 and MgO
Super "F"	Plibrico Canada, Ltd.	2,800	
Narcospar	North American Refractories	3,100	SiO_2, Al_2O_3, CaO
Narcocrete	North American Refractories	2,450	
Narcocast ES	North American Refractories	2,400	Fe_2O_3, TiO_2, MgO,
Anti Erode	North American Refractories	2,500	in varying amounts
TIW Insulation Type 1	Owens Corning	1,000	Fiberglas
Fiberglas IS-Board	Owens Corning	850	Fiberglas
Aircor 75P	Owens Corning	250	Fiberglas
Kast-O-Lite 2,500 F	A. P. Green	2,500	SiO_2, Al_2O, Fe_2O_3, CaO
Castable 20 2,000 F	A.P. Green	2,000	TiO_2, MgO
Fireclay - Mortar	A. P. Green	1,000	
Greencote	A. P. Green	3,000	SiO_2, Al_2O_3
Greencast 12	A. P. Green	2,200	SiO_2, Al_2O_3, CaO
KS-4V	A. P. Green	2,600	SiO_2, Al_2O_3, CaO
SK-7	A. P. Green	1,800	
Gilso-Therm 70	American Gilsonite	460	Powdered bituminous coal
Style 4801 Blanket	Forty-Eight Insulation	1,600	Fiberglas
Super 48 Cement	Forty-Eight Insulation	1,900	Mineral Fibers and binders
No. 10 Insulation	Forty-Eight Insulation	1,200	Mineral fibers and binders
Super Powerhouse Cement	Keene Corporation	1,200	Mineral wool and Portland cement
Perlite	Perlite Industries	2,350	Expanded perlite
Durolite 22	Canadian Refractories	2,200	Fireclay, perlite and calcium aluminate
Duracrete G-ES	Canadian Refractories	2,600	Fireclay, calcium and aluminate
Kaowool	Babcock & Wilcox	2,300	Alumina-silica ceramic fiber calcined alumina-silica
Kaocrete - B	Babcock & Wilcox	2,300	Aggregate and calcium
Kaocrete 2800 LI	Babcock & Wilcox	2,800	Aluminate

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TABLE II

ASBESTOS-FREE PRODUCTS

(cont'd)

Material Designation	Manufacturer	Max. Temp F	Composition
Speed Crete, Blue Line	Cement Materials Corporation	85	Cement based silic
Light Weight Castable - 22	Harbison-Walker Refractories	2,200	SiO_2, Al_2O_3, CaO
Harchrome G	Harbison-Walker Refractories	2,600	
Harwaco Bond	Harbison-Walker Refractories	2,900	Fe_2O_3, Cr_2O_3
Superplastic Firebrick	Harbison-Walker Refractories	3,000	TiO_2 and MgO
Thermolith	Harbison-Walker Refractories	3,000	
Moldit 45	R&I Ramtite Canada, Ltd.	2,200	SiO_2, Al_2O_3, CaO,
Moldit 58	R&I Ramtite Canada, Ltd.	2,200	Fe_2O_3, Cr_2O_3,
Moldit 80	R&I Ramtite Canada, Ltd.	2,500	TiO_2 and MgO
R&I 1199	R&I Ramtite Canada, Ltd.	1,800	
Foster Lagtone Coatings	Benjamin Foster Company	180	Polyvinyl acetate and plasticizer and ethylene glycc glycol ether acetate, water
Thermo-12	Johns Manville Corp.	1,500	asbestos free calcium silicate

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