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SHIPBUILDERS COUNCIL OF AMERICA

WATERGATE SIX HUNDRED | WASHINGTON, D. C. 20037

February 4, 1972

To: ACCIDENT PREVENTION COMMITTEE

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Subject: NAVSHIPS Instruction on Asbestos Expsoure Hazards

The enclosed NAVSHIPS instruction dated 9 February 1971, is for your information as to Navy's approach on asbestos dusts on Navy work in private yards. We understand that some yards have already received their instruction directly from NAVSHIPS.

Note that on page 4, item paragraph (17) mentions the 5 fibers limit as in the December 7, 1971, OSHA Emergency Standard.

E. P. Ruddy

E. P. Ruddy
Secretary

cc: Thomas J. Defoe
Otho Haunschild
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Kent Savage

PLAINTIFF'S EXHIBIT
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DEPARTMENT OF THE NAVY
NAVAL SHIP SYSTEMS COMMAND
WASHINGTON, D.C. 20360

IN REPLY REFER TO
NAVSHIPSINST 5100
07D:JC:lb
Ser 70-07D
9 February 1971

NAVSHIPS INSTRUCTION 5100.26

From: Commander, Naval Ship Systems Command

Subj: Asbestos Exposure Hazards; control of

Ref: (a) MIL-STD 769C of 15 Nov 1969, Thermal Insulating Requirements for Machinery and Piping
(b) NAVSHIPS Technical Manual 9390 of Sep 1967
(c) NAVMAT P-5100 "Safety Precautions for Shore Activities"
(d) NAVMAT P-10470 "Safety Equipment Manual"

Encl: (1) Suggested Warning Signs

1. Purpose. To prescribe appropriate safety precautions during the use of asbestos.

2. Background.

a. Asbestos is a broad term applied to a group of fibrous minerals such as amosite, chrysotile, crocidolite, etc., composed of silicates of iron, sodium, calcium and/or magnesium.

b. The most critical use of asbestos in the Navy from a safety viewpoint is in the fabrication, installation, repair or removal of pipe and boiler insulation materials. Some workers sustain accidental contacts either while employed in various capacities where asbestos products are processed or when working in plant areas in which an environmental pollution of the air exists due to asbestos. The severe effects of asbestos on the lungs is the main factor for considering the elimination of asbestos as an insulation material on piping, ducts and boilers. References (a) and (b) set standards of materials which are to be used. These references will be reviewed periodically and changed as necessary to reflect the use of new materials that meet or exceed the standards now in use. Reference (c) also provides guidance on precautions regarding asbestos.

3. Action. The following safety precautions will be observed by all supervisors and workers engaged in the fabrication, installation and/or removal (rip-out) of asbestos-containing insulation/material. The provisions of this instruction will be effective as of this date. The provisions of this instruction are considered as minimum health and safety requirements; more stringent restrictions may be applied by local Commanders.

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a. Fabrication:

(1) Asbestos operations should be segregated from other operations so as not to expose other personnel to asbestos dust. If the work cannot be separated, personnel in immediately adjacent areas will wear a Bureau of Mines approved respirator for irritant dusts and other prescribed, personal, protective equipment. The various items of personal, protective equipment will be those approved by the Industrial Hygienist, the Medical Officer, or as authorized by reference (d).

(2) The handling and fabrication areas will be restricted to the necessary workers, supervisors and inspection personnel directly concerned with the asbestos operations. Casual visitors or passers will be restricted from entry into any area where asbestos containing materials are being fabricated. All supervisors, workers, inspectors, etc., will wear approved respirators for irritant dusts when they are working with dry material containing asbestos or are in asbestos-contaminated areas of work spaces.

(3) Asbestos cloth cutting tables or benches provided with adequate local exhaust ventilation should be used whenever cutting operations are performed. Exhaust air containing asbestos dust will not be dispersed into the atmosphere without being adequately filtered. Filters will be carefully changed or cleaned to prevent atmospheric contamination.

(4) Power saws will be located in a suitable enclosure which is equipped with exhaust ventilation to a filter trap. This exhaust ventilation will be independent of the shop ventilation supply/exhaust system. The switches will be interlocked so that the exhaust system operates at all times while the saw blades are in operation.

(5) Suitable waste containers lined with disposable plastic bags will be provided at each cutting table/fabrication operation. Discarded and scrap asbestos materials will be immediately placed in plastic bags which are then sealed for disposal. Scrap should be disposed of on a daily basis.

(6) The Industrial Hygienist or Medical Officer will recommend the exact method and place of disposal of asbestos dusts and scrap to minimize exposures.

(7) Shop walls, ceilings and floors should be designed to prevent dust accumulations and to facilitate housekeeping measures.

(8) Industrial type vacuum cleaners should be used to pick up dusts and scrap. The vacuum cleaner operator will wear an approved respirator when operating his cleaner. The water impaction collection system vacuums best and safely. Dry sweeping of scrap or dust should not be permitted. If sweeping is necessary, the scrap and possible dust will be wet down with a fine water spray prior to sweeping. Drop cloths will be placed under work tables or areas if scraps and dust will fall into difficult to clean areas or crevices.

(9) Asbestos cloth or tape will not be torn or ripped. Scissors or cutting knives will be used.

(10) In-Shop operations for mixing of all cements will be provided with permanent exhaust ventilation equipment. This exhaust air will not be vented into the shop atmosphere and must be adequately filtered before its release to the outside atmosphere. In-bag mixing may be done without exhaust ventilation so long as bag integrity is maintained.

(11) The asbestos cloth shall be wet down prior to fabrication.

(12) All regularly assigned insulation workers and supervisors will be given a 14" x 17" annual chest X-ray. This will be done on the same continuing, periodic basis even if the worker is transferred or reassigned into another job title. X-ray films of asbestos workers, active, reassigned or retired, will be specially identified to the consulting radiologist to alert him to the need for a special type of reporting. The health records of insulation workers will be marked "Asbestos worker".

(13) Insulation workers should be provided with clean coveralls at the beginning of each shift or as often as needed. The coveralls will be removed before the removal of the respirator and should not be "beaten" to remove excess dusts or scrap adhering to it. Contaminated coveralls will be placed in plastic bags, until disposed of or laundered.

(14) Materials will be removed from their cartons or package with care to reduce dust or scrap generation. Wetting of the material prior to removal substantially reduces dust production.

(15) The Industrial Hygienist will provide at least twice yearly indoctrination talks to all asbestos workers on the proper measures of personal protection against asbestos exposure.

(16) Adequate warning signs (enclosure (1) or similar) will be posted at all entrances to the fabrication shop sites to alert workers and other personnel that asbestos operations are in progress.

(17) The Industrial Hygienist should make frequent inspection of the Fabrication and Installation sites to check the level of airborne contamination. These inspections should be done monthly or more often as rquired. The Threshold Limit Value (TLV) for airborne asbestos is 5 fibers greater than 5 microns per milliliter. If this TLV is exceeded, the Industrial Hygienist will assist the shop foreman in designing better preventive measures to control the airborne contamination. Asbestos installation, fabrication or removal operations should be suspended until the proper TLV can be maintained so as to protect the workers and others in the area.

(18) Cement bags will be opened wide to permit emptying of the contents without shaking. The material should be made into a slurry as quickly as possible to prevent dust generation. Empty bags will be wet down and placed in a waste container.

(19) Suitable replacement materials for asbestos will be used when practicable. New or untested replacement materials will be submitted to NAVSEC for evaluation and approval prior to use.

b. Installation:

(1) Personnel engaged in Installation operations will wear Industrial Hygienist approved respirators whenever asbestos containing materials are being handled. The Medical Officer will be the approval authority for any exceptions.

(2) Unpacking and application of insulation materials at the installation site will be done in such a manner that will minimize airborne dust.

(3) The area around the installation procedures should be isolated when possible. Adequate warning signs (enclosure (1)) will be posted. Only persons whose work requires their presence should be permitted in such areas. If airborne asbestos dust is present, they will wear Bureau of Mines approved respirators for dusts or leave the area.

(4) The Industrial Hygienist will be requested to determine suitable methods for preventing large scale contamination of machinery and engine spaces when installation or removal operations are performed in these areas.

(5) Suitable waste containers lined with disposable plastic bags will be kept available at the installation site so that discarded or scrap insulation materials can be immediately placed in them.

(6) The exact method and place of disposal of scrap asbestos and asbestos dust will be approved by the Industrial Hygienist or the Medical Officer. Personnel assigned these tasks will be specifically advised on needed precautions by the Industrial Hygienist or the shop supervisor.

(7) The ventilation requirements of shipboard or confined spaces will be determined by the Industrial Hygienist or Safety Officer and will be in accord with Article 0212 1045-1054 of reference (c).

(8) Portable dust collectors/industrial-type vacuum cleaners should be placed in use at the point of operations within confined spaces when possible.

(9) Decks and spaces contaminated by insulation debris will not be dry swept. These areas must be wet down by a fine spray prior to sweeping (when vacuum cleaners cannot be used).

(10) Workers performing insulation work should be provided with clean paper coveralls when dusty conditions are to be encountered. The coveralls will be removed before the respirator is removed. The coveralls should not be "beaten" to remove excess dusts or scraps adhering to it. Contaminated coveralls will be disposed of by placement in the asbestos scrap bag.

c. Removal (Rip-Out):

(1) Personnel engaged in Removal operations will wear Bureau of Mines approved respirators whenever asbestos containing materials are being handled. The Medical Officer will be the approval authority for any exceptions.

(2) The area around the Removal procedures should be isolated when possible. Adequate warning signs (enclosure (1)) will be posted. Only persons whose work requires their presence will be permitted in such areas. If airborne asbestos dust is present, they will wear Bureau of Mines approved respirators for irritant dusts or leave the area.

(3) The Industrial Hygienist/Medical Officer should designate specific procedures to collect scrap and dust in the machinery spaces.

(4) The area(s) in which asbestos removal takes place will be confined when possible by means of curtains, portable partitions, drop cloths, etc., to prevent excessive contamination of other areas.

(5) In removal operations that involve dusty work, clean paper coveralls will be supplied at the start of each shift; then for lunch, the workers will dispose of the dirty coveralls, then dispose of their respirator filters. After lunch they will put on clean coveralls and respirators with new filters. At the end of the shift all contaminated coveralls will be disposed of by placement in the asbestos scrap bags.

(6) Suitable waste containers lined with disposable plastic bags will be kept available at the removal site so that discarded or scrap insulation materials can be immediately placed in them.

(7) The exact method and place of disposal of scrap asbestos and asbestos dust will be approved by the Industrial Hygienist/Medical Officer. This is particularly applicable on-board ships and in machinery spaces.

(8) High asbestos-containing scrap material should be wet down before collection, hauling or dumping. Personnel assigned these tasks will be specifically advised on needed precautions by the Industrial Hygienist or the insulation shop supervisor.

(9) The ventilation requirements of shipboard or confined spaces will be determined by the Industrial Hygienist or Safety Officer and will be in accord with articles 0212, 1045-1054 of reference (c).

(10) Portable dust collectors/industrial-type vacuum cleaners should be placed in use at the point of operations within confined spaces. They may be used to temporarily and partially clean a worker who has to leave the work area for a short time.

(11) Decks and spaces contaminated by insulation debris should not be dry swept. These areas must be wet down by a fine spray prior to sweeping (when vacuum cleaners cannot be used).

(12) A cast cutter similar to the Number 845 STRYKER CUTTER will be used when possible during removal operations. This is a cutter used by doctors to remove plaster casts from patients. Old insulation should not be ripped or torn. It should be cut whenever possible. The addition of a vacuum attachment to the STRYKER CUTTER will materially aid in controlling dust generation. This attachment should be used whenever practicable.

(13) The Industrial Hygienist will periodically evaluate the level of asbestos exposure and recommend positive measures for dust control in various areas. This evaluation should be done at the start of each new asbestos operation and as often thereafter as the findings indicate to provide effective control over dust producing operations.

(14) The use of off-hours work should be considered to minimize the number of personnel susceptible to exposure of irritant dusts.

d. Approved Safety Materials/Clothing:

(1) The Industrial Hygienist will recommend and approve the various types of respirators, overalls and other needed personal protective equipment to be used by personnel engaged in various asbestos operations. Only personal protective equipment approved in accordance with Federal Specification GGG-M-125, Type III, Classes 1 and 2 as set forth in reference (d) will be used.

(2) Each worker will be responsible for maintaining his respirator and filters in a satisfactory condition. He will wear it in a proper manner when working on dust producing operations and during all asbestos removal operations.

(3) Supervisors will enforce the proper use of personal protective equipment during all phases of asbestos work. They will arrange for prompt, scheduled physical examinations and X-rays as prescribed by the Medical Officer (normally annually).

(4) Supervisors will arrange for an adequate supply of clean coveralls and new filters for the respirators used by insulation workers.

e. Application of Substitute Materials For Asbestos:

(1) Any proposed materials for use in place of asbestos will be submitted to NAVSEC for evaluation and approval prior to use.

J. W. DOLAN, Jr.
Deputy Commander for Field Activities/Program Director for Shipyard Modernization and Manag[illegible]

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SUGGESTED WARNING SIGNS

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WEARING OF RESPIRATORS REQUIRED