

# RAB SHEET

## QUESTIONS REGARDING ASBESTOS

In a recent Restoration Advisory Board meeting, questions were asked regarding the asbestos surveys conducted on Adak Island. In response to the questions asked, the Navy has put together this fact sheet.

### What is Asbestos

Asbestos is generally a fibrous material, which is incombustible and possesses high tensile strength, good thermal and electrical insulation properties, and moderate to good chemical resistance. Because of its inherent properties of softness, pliability and resistance to heat and chemical corrosion, asbestos became popular as an additive to many building materials.



The presence of asbestos is not necessarily a danger to building occupants. As long as asbestos-containing materials (ACM) remain in good condition and are not disturbed or damaged, exposure is unlikely. However, damaged, deteriorated, or disturbed ACM can lead to fiber release and exposure. Unauthorized removal or disturbance of asbestos materials is not only potentially unhealthy but also illegal. Only trained, certified workers should handle or remove asbestos containing material. Unauthorized or uncontrolled disturbance of asbestos materials is a violation of EPA and OSHA regulations.

### Types of Asbestos Building Materials

In the United States, commercial use of asbestos began in the early 1900's and peaked in the period from World War II into the 1970's. Asbestos has been used in literally hundreds of products. Asbestos gained wide spread use because it is plentiful, readily available and low in cost. Because of its unique properties - fire resistant, high tensile strength, poor heat and electric conductor, and generally impervious to chemical attacks - asbestos proved well suited for many uses in the construction trades. The beneficial properties of asbestos make it ideal for many diverse uses such as:

- |                       |                             |                                     |                    |
|-----------------------|-----------------------------|-------------------------------------|--------------------|
| ? floor tile          | ? spackling                 | ? mastic (glue between floor tiles, | ? fire doors       |
| ? ceiling tiles       | ? lab countertops           | linoleum, carpet                    | ? pipe gaskets     |
| ? linoleum            | ? roofing felts and asphalt | and floor)                          | ? pipe fittings    |
| ? acoustical finishes | ? siding                    | ? pipe insulation                   | ? fume hood liners |
| ? boiler insulation   | ? Transite                  | ? electrical insula-                | ? plaster          |
| ? tank insulation     | ? fireproofing              | tion                                | ? HVAC duct wrap   |

If you have any questions about whether a material contains asbestos, contact your asbestos program manager.

## Most Common Applications

The EPA identifies three categories of asbestos-containing material used in buildings. The first is surface material, which is defined as any material sprayed or troweled on surfaces (walls, ceilings, and structural members) for acoustical, decorative, or fireproofing purposes. This includes plaster and fireproofing insulation. The second includes thermal system insulation (TSI) which is material used to inhibit heat transfer or prevent condensations on pipes, fittings, boilers, tanks, ducts or other various other components of hot and cold water systems and heating, ventilation and air conditioning (HVAC) systems. This includes pipe lagging, pipe wrap, block, batt, and blanket insulation, cements and "muds", and a variety of other products such as gaskets and ropes. The third type is miscellaneous material. This includes floor tile, ceiling tile, roofing felt, concrete pipe, outdoor siding, and fabrics.

### Health Affects of Asbestos

Exposure to airborne (friable) asbestos fibers can cause disease. The risk of developing asbestos-related disease varies according to the intensity, duration and nature of the exposure. Asbestos exposure can cause a number of disabling and fatal diseases. The principal route of exposure is by inhalation through the nose and mouth.

Asbestosis is a disease that is characterized by pulmonary fibrosis, a progressive scarring of the lung caused by the accumulation of asbestos fibers. Asbestosis is associated exclusively with chronic, occupational exposure. The build up of scar tissue interferes with oxygen uptake through the lungs and can lead to respiratory and heart failure. Often, asbestosis is a progressive disease, even in the absence of continued exposure. Symptoms include shortness of breath, cough, fatigue, and vague feelings of sickness.

Lung cancer is a malignant tumor of the bronchi covering. The tumor grows through surrounding tissue invading and often obstructing the air passages. The earliest symptom is often a persistent cough. Chest x-rays sometimes show shadows that indicate tumors and enlarged lymph nodes. The time between exposure to asbestos and the occurrence of lung cancer is 20-30 years.

Mesothelioma is a cancer of the lining of the chest or the lining of the abdominal wall. Early stages are associated with few symptoms. By the time it is diagnosed, it is almost always fatal. Effective therapy does not exist. There is no exposure threshold for mesothelioma. This is suggested by the observation that family members of asbestos-exposed workers have developed mesothelioma. Similar to other asbestos-related diseases, mesothelioma has an extended latency period of 30 to 40 years.

Pleural Plaques and Pleural calcification are markers of exposure and may develop 10 to 20 years after initial exposure. Plaques are opaque patches visible on chest x-rays that consist of dense strands of connective tissue surrounded by cells. All commercial types of asbestos induce plaques.

Other diseases and adverse health effects have been noted among the population exposed to asbestos fibers. Increased incidences of non-respiratory cancers have been observed in some recent epidemiological studies. Cancers of the larynx, esophagus, stomach, colon-rectum, kidney and pancreas are present at slightly higher than predicted levels.

Other substances appear to cooperate with asbestos to multiply the risk of lung cancer. Smokers exposed to asbestos fibers are at least fifty times more likely to develop lung cancer than the general public.

## **Navy Requirements Prior to Transfer**

### **Federal Regulations**

The U.S. Environmental Protection Agency and the Occupational Safety and Health Administration (OSHA) are responsible for regulating environmental asbestos exposure and protecting workers from asbestos exposure. OSHA is responsible for the health and safety of workers who may be exposed to asbestos in the workplace, or in connection with their jobs. EPA is responsible for developing and enforcing regulations necessary to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health.

EPA's *Asbestos National Emission Standards for Hazardous Air Pollutants* (NESHAP) is intended to minimize the release of asbestos fibers during activities involving the handling of asbestos. It specifies work practices to be followed during renovations of buildings, which contain a threshold amount of friable (releasable) asbestos, and during demolitions of all structures, installations, and facilities. Most often, the Asbestos NESHAP requires action to be taken by the person who owns, leases, operates, controls, or supervises the facility being demolished or renovated (the "owner"), and by the person who owns, leases, operates, controls or supervises the demolition or renovation (the "operator"). The regulations require owners and operators subject to the Asbestos NESHAP to notify delegated State and local agencies and/or their EPA Regional Offices before demolition or renovation activity begins. The regulations restrict the use of spray asbestos, and prohibit the use of wet applied and molded insulation (i.e., pipe lagging). The Asbestos NESHAP also regulates asbestos waste handling and disposal.

In 1986, *Asbestos Hazard Emergency Response Act* (AHERA) was signed into law as *Title II of Toxic Substance Control Act*. AHERA requires the inspection of schools (kindergarten through 12) for asbestos containing building materials (ACBM) and preparation of management plans which recommend the best way to reduce the asbestos hazard. AHERA also requires accreditation of abatement designers, contractor supervisors and workers, building inspectors, and school management plan writers. In 1994, Congress issued the *Asbestos in Schools Hazard Abatement Reauthorization Act* (ASHARA), which extended AHERA accredited training requirements to personnel working in public and commercial buildings.

In 1989 EPA published the *Asbestos: Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions; Final Rule*. The U.S. 5th Circuit Court of Appeals vacated most of the Asbestos Ban and Phaseout Rule and remanded it to EPA in October, 1991. Although the Court vacated and remanded most of the rule, it left intact the portion of the rule that regulates products that were not being manufactured, produced, or imported when the rule was published on July 12, 1989.

### **Asbestos Work on Adak**

Supervisor of Shipbuilding, Conversion & Repair – Portsmouth, VA Environmental Detachment, Vallejo, CA (SPPORTS) conducted an asbestos survey of 222 buildings and structures at Adak NAF from July 1996 to August 1996. The purpose of the survey was to identify asbestos con-

taining materials. SSPORTS workers remediated friable, accessible asbestos-containing material in 149 buildings, with total abatement completed at three LORAN Station buildings. To document specific remediation actions conducted in the 152 buildings, SSPORTS issued the *Adak NAF Asbestos Remediation Completion Report, January 1998*.

In 1998, SSPORTS continued its abatement activities. In accordance with the *Phase II Project Management Plan (PMP) for Asbestos Remediation at NAF Adak*, SSPORTS repaired, removed, and evaluated all friable, accessible, and damaged ACM in buildings that posed a threat to human health and safety. SSPORTS conducted an overview of the entire island to locate, pick up, bag, tag and dispose of any visible, loose asbestos in safe, accessible areas. From mid-March to October 1998, remediation and building inspections occurred. A total of 398 buildings were certified as safe for occupancy and use. These efforts are documented in the *1998 Asbestos Remediation Completion Report for Adak NAF* (released May 1999).

During January 1999 through December 1999, using special authority and funding provided by Congress, the Navy contracted with SSPORTS, Space Mark and Ultramax, Inc. to remove asbestos containing building materials in 93 buildings. The 1999 asbestos remediation efforts are summarized in the *Asbestos Remediation Completion Report*, released March 2000 by Roy F. Weston, Inc.

Currently, asbestos-containing building materials (ACBMs) remain in place in less than 35 buildings that are presently in use. These areas are used primarily as unoccupied storage space. ACBM also remains in some laid-away facilities. The majority of ACBM present is non-friable. Intact, undisturbed and appropriately maintained ACBM does not pose a significant health risk. The recommended in-place management program for the remaining ACBM is discussed in Hart Crowser's *Asbestos Management Plan for Former NAF Adak*, dated November 2000.

## **DoD Asbestos Policy**

Under Secretary of Defense Memorandum of 31 Oct 1994, *Asbestos, Lead Paint, and Radon Policies at BRAC Properties*, is DOD's policy for asbestos-containing materials. The Navy is to manage asbestos-containing material in a manner protective of human health and the environment, and to comply with all applicable Federal, State and local laws and regulations. Under Secretary of Defense *Memorandum of 3 June 1994* is DOD's policy that states that vinyl asbestos tile (VAT) should not be removed simply because it is present and is perceived to be a health hazard. The activities summarized in the previous section have completed the Navy's actions, and fulfilled their obligations, under all applicable regulations.