

Manual Section 3	Issue Date 10/18/10	Revision Date 01/01/24	Policy Number LLCP-021
	Asbestos		

Purpose

This safe work procedure addresses the potential hazards involved in the removal or disturbance of Asbestos-containing Materials (ACM). Included are the engineering control methods, work practices and personal protective equipment requirements designed to protect employees and the environment from asbestos exposures during maintenance projects. The activities covered by this program where employees may be exposed include the removal of pipe coating containing asbestos, handling and cutting of transite building materials, removal of gaskets containing asbestos, and housekeeping procedures for asbestos-containing materials. Trained personnel must conduct any of the above activities in which ACM is involved whether the permissive exposure limits (PEL) will be exceeded or not. Therefore, only appropriately trained company employees with oversight by a designated, trained “competent person” can do asbestos work.

Workplace exposure to asbestos shall be carefully evaluated by the Corporate HSE Department for proper engineering controls, administrative controls, and PPE selection. All of the Company’s applicable safety rules and procedures should be followed, as needed, even if not specifically mentioned in this program. All provisions of this program will be followed with no deviations made unless approved by the Corporate HSE Director in Galliano, La.

Scope

All LLC Companies including, Blanchard Industrial, LLC, GIS Engineering, LLC, Grand Isle Shipyard, Inc., and GWIS, Mack Steel, NuWave, Sun Industries, Valvemax, Discovery Industries, Inc.; hereafter identified as “Company”.

Application

This guideline applies to the maintenance, as required, of pipe coating that has or may have asbestos content of 1.0 percent or greater. If data is not available and testing of the coating is not performed, then it must be assumed that the coating contains asbestos and this procedure must be followed. This procedure is designed to minimize worker exposure to asbestos and to prevent airborne emissions of asbestos fibers into the environment. Asbestos state notification and disposal will be coordinated with the Corporate HSE Director.

If employees working immediately adjacent to a Class I asbestos jobs are exposed to asbestos due to the inadequate containment of such job, their employer shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

Definitions

The asbestos contained in the pipe coating is an Occupational Health and Safety Administration (OSHA) listed toxic and hazardous substance under 29 CFR 1910.1001 and 1926.1101. It is also a controlled waste according to the Environmental Protection Agency (EPA) standards under 40 CFR 61.140 through 61.157.

- ACM Asbestos-Containing Material
- AHERA Asbestos Hazard Emergency Response Act
- ½ APR Half mask air purifying respirator (HEPA)

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ASHARA	Asbestos School Hazard Abatement Reauthorization
CP	Competent Person
EL	Excursion limit
GB	Glove bag 60x60
HEPA	High Efficiency Particulate Air Filter
NP glovebag	Negative pressure glovebag
O&M	Operations & Maintenance
PACM	Presumed asbestos-containing material
PEL	Permissible exposure limit
PPE	Personal protective equipment
TSI	Thermal System Insulation

Asbestos:

Asbestos is a natural mineral found in rocks. It is mined in much the same way as copper or iron ore. Most asbestos used in the United States is imported, primarily from Canada and South Africa. Asbestos differs from other minerals in its crystal structure of long, thin fibers. The word asbestos actually refers to the fibrous forms of several minerals. According to federal and state rules, the term asbestos "fiber" refers to particles. Asbestos has been used in a variety of products including fireproofing, roofing and flooring materials, textiles, electrical conduits, brake shoes and clutch materials, shingles, ceiling textures, taping compound, mastic and insulation for homes and schools.

Asbestos-containing product (ACM) is friable or non-friable.

- Friable ACM (asbestos-containing material) can be crushed or crumbled to dust, when dry, with hand pressure. The soft, sometimes fluffy or chalky material may put fibers into the air if disturbed.
- Non-friable ACM cannot be crushed or crumbled to dust or powder when dry. Even though a non-friable product may not present the potential hazard that a friable material would, it is still regulated as asbestos-containing material. It is possible to make a non-friable ACM friable if certain activities are performed on it such as drilling, sanding, and cutting.

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Types of Asbestos

- **Serpentines**
 - Chrysotile - Makes up 90% of all asbestos in use today. Uses include soundproofing, fireproofing (white asbestos), insulation, blankets, gaskets, brakes, etc.
- **Amphiboles**
 - Crocidolite: Used for asbestos cement pipe, gaskets, and is a contaminant in other asbestos (blue asbestos).
 - Amosite: Used in insulation on pipes, boilers, fireproofing (brown asbestos).

Classification of Asbestos Work

- Class I Asbestos Work – Activities that involve the removal of thermal system insulation, surfacing material, and PACM. This includes insulation on pipes, boilers, dehydrators, etc. Training requirements:
 - AHERA worker 32 hr.
 - Annual refresher 8 hr
- Class II Asbestos Work – Activities involving the removal of ACM that is not thermal insulation or surfacing material. This includes, but is not limited to, asbestos-containing wallboard, floor tiles, floor sheeting, roofing and siding shingles, construction mastics, transite sheeting, gaskets, and pipe wrap. Training requirements:
 - AHERA worker 32 hr.
 - Annual refresher 8 hr
- Class III Asbestos Work – Repair and maintenance operations where ACM, including thermal system insulation, surfacing material, and PACM is likely to be disturbed. (A disturbance involves amounts that can be contained in one standard glove bag or waste bag that does not exceed 60” x 60” in length and width, about 12.5 cubic feet). Training requirements:
 - AHERA 16 hr. O&M
 - Annual refresher
- Class IV Asbestos Work – Maintenance and custodial activities which employees come in contact with, but do not disturb, ACM or PACM, and activities involving the cleanup of dust, waste, and debris resulting from Class I, II, or III work. Training requirements:
 - Awareness 2 hr.
 - Annual refresher

Before all work that is Class I, II, or IV is bid or begun, the Corporate HSE Director will need to be notified to ensure all rules and regulations are met. An asbestos procedure will be written and signed off on for all types of asbestos work.

Engineering Controls

Engineering Controls shall be utilized and prepared to the extent that such controls are not feasible. Some of them may be exhaust systems for hand tools, wet methods, clean-up procedures & PPE.

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Training Requirements

- All training will be under the direction of the Corporate HSE Director.
- All personnel will receive minimum awareness training in Asbestos Safety prior to initial assignment due to being required for employees whose work activities may contact asbestos containing material (ACM) or presumed asbestos containing material (PACM). Documentation shall be kept in our electronic filing system in each employee's file.
- Personnel who shall engage in activities such as asbestos removal, clean up, etc. or employees who may be affected by such activities shall receive a higher form of training prior to their assignment, that will educate them in how to protect themselves as well as others that may surround such activities as well as the health effects associated with asbestos exposure.
- Employee training program will be readily available to affected employees, the assistant Secretary of Labor for Occupational Safety and Health and the director of the National Institute for Occupational Safety and Health.

Exposure Monitoring

- Monitoring shall be performed to accurately determine the airborne concentrations of asbestos to which employees may be exposed when asbestos is being abated.
- Determinations of employee exposure shall be made from breathing zone air samples. The samples shall be representative of the 8-hour TWA and 30-min. short-term exposure. Measurements are required for documentation. (No employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) in 30 minutes)
- Affected employees shall be notified of the monitoring results that represent that employee's exposure as soon as possible following receipt of monitoring results. Notification shall be in writing either individually or by posting at a centrally located place that is accessible to affected employees.

Where the TWA and/or excursion limit is exceeded, a written program shall be established and implemented to reduce employee exposure to or below the TWA and to or below the excursion limit. The written program will provide information to employees that will guide them of precautions to take to protect themselves as well as their fellow co-worker.

Communication of Hazards to Employees

- Warning signs that demarcate the regulated area shall be provided and displayed at each location where airborne concentrations of asbestos may be in excess of the TWA and/or Excursion Limit to limit access to regulated areas.
- Signs shall be posted at an appropriate distance from the location, and appropriate work practices which, if followed, will ensure that ACM and/ PACM will not be disturbed so an employee or anyone coming into the area may take necessary protective steps before entering the area marked by the signs.
- These signs must be placed at all access points to such areas.
- The signs may be purchased and should be of standard size.
- The signs should read:

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<p>DANGER</p> <p>ASBESTOS</p> <p>CANCER AND LUNG DISEASE</p>

- Warning labels shall be affixed to all materials containing asbestos or to their containers.

Labeling Requirements

Waste should be double bagged in clear 6-mil plastic and tightly sealed with duct tape to ensure bag is airtight. The bagged material should be labeled as follows:

<p>DANGER</p> <p>CONTAINS ASBESTOS FIBERS</p> <p>AVOID CREATING DUST</p>

Transportation of Waste Containing Asbestos

Vehicles must meet DOT and state requirements to transport asbestos-containing materials. Operators of vehicles used to transport asbestos-containing material from the site do not need commercial driver’s licenses with a hazardous materials endorsement, unless ACM is a thousand pounds or greater.

Prior to transportation, the company on-site personnel and the transporter will ensure that the materials are properly wrapped, in leak-tight containers, and labeled appropriately. If there is reason to believe that the condition of the asbestos waste may allow significant fiber release during transportation, the waste may not be shipped until the situation is corrected.

No pipe with asbestos-containing material will be delivered to the job site office or permanent office location. If job specifications state that the pipe belongs to the contractor, then discuss with the Corporate HSE Director before the start of the job.

Medical Surveillance

Exposure to asbestos has been shown to cause lung cancer, asbestosis, mesothelioma, and cancer of the stomach and colon.

A medical surveillance program shall be instated for all employees engaged in work involving levels of asbestos, at or above the Excursion Limit, for 30 or more days per year or, who are required to wear negative pressure respirators.

Persons should not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician shall determine what health and physical conditions are pertinent. The respirator user’s medical status should be reviewed periodically (for instance, annually).

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Only those employees able to perform the assigned task while wearing a respirator can be given such a position. Users must then be medically evaluated every year to determine their continued ability to perform their job.

Ask workers for the following Information:

History of personal respiratory diseases

- Identify workers with a history of asthma, emphysema, or chronic lung disease.

Work history

- Identify workers who have been exposed to asbestos, silica, cotton dust, beryllium, etc. within the past ten years, or workers who have worked in occupations or industries where such exposure was probable.

Any other medical information

- Such information may offer evidence of the worker's ability or inability to wear and use respirators.

Recordkeeping

Where objective data (sampling and analysis of bulk materials and air) has been relied on to demonstrate that products made from or containing asbestos are not capable of releasing fibers of asbestos in concentrations at or above the action level and/or Excursion Limit under the expected conditions of processing, use, or handling, to exempt data reasonably relied upon in support of the exemption shall be established and maintained. This record shall be maintained for at least thirty (30) years.

Standard Equipment Needed

- Plywood panel(s) (4x8)
- Impermeable or plastic dropcloth
- Decontamination plastic sheeting or washtub
- Access control tape marked: "DANGER – ASBESTOS"
- Disposable gloves, hard hats
- Face Shields
- Pump sprayer(s) containing amended water (½ cup liquid soap per 5 gallons of water)
- Asbestos labeled, clean, 6-mil, disposal bags
- Duct tape
- Absorbent towels
- Disposal drum with sealing lid
- Tyvek coveralls with head cover
- HEPA vacuum (optional)
- Decontamination brushes (for equipment cleanup, if applicable)
- Half mask air-purifying respirator(s) with HEPA air filter cartridges (selection is in accordance with the Company's Respiratory Protection Program)

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Pipe Coating Removal

This guideline applies to the maintenance (O & M) as required of pipe coating that has or may have an asbestos content of 1.0 percent or greater. If data is not available and testing of the coating is not performed, then it must be assumed that the coating contains asbestos and this procedure must be followed. This procedure is designed to minimize worker exposure to asbestos and to prevent airborne emissions of asbestos fibers into the environment. Asbestos removal, state notification, and disposal will be coordinated with the Corporate HSE Director.

Personal Protective Equipment

Protective clothing, such as coveralls or similar whole-body clothing, head coverings, face shields, vented goggles, gloves, and foot coverings, shall be provided and must be worn by any employee exposed to airborne concentrations of asbestos that exceeds the TWA and/or Excursion Limit. Protective clothing shall be disposed of in the same manner as the removed asbestos material.

Respirators shall be used in work operations to reduce exposure. The respirator shall be provided at no cost to the employees and shall be chosen from those approved by NIOSH.

The following personal protective equipment will be required to be worn by all employees entering the work area:

- Gloves: Disposable gloves
- Footwear: Rubber boots or shoe protectors
- Eye Protection: Safety glasses, goggles or face shield are required
- Respirators: With HEPA cartridge filter

Work Procedures

- The area around the work site must be marked with access control tape or another method to control the exclusion area. No one is allowed into the controlled area without proper training and personal protective equipment.
- At no time should the asbestos be further crumbled, pulverized, or reduced to powder. Hand tools must be used with care to prevent abrasion of the material and prevent particles from being emitted into the air.
- Upon completion of the excavation of the area to be repaired, prepare the site for the manual removal of the coating. Sheets of plywood can be placed on the floor of the excavation to provide stable footing for the personnel that will be performing the work and to prevent the impermeable or plastic dropcloth from being punctured during the manual removal.
- Place impermeable or plastic dropcloth in the excavation so that all areas around and beneath the pipeline are covered. The dropcloth should extend beyond the edges of the trench to the surface and should be held in place by using stakes, rock, soil, or a combination of all.
- Manually remove the coating by chipping and scraping while spraying the entire coating with amended water. The entire circumference of the pipe should be wetted at the beginning of work and, as frequently as needed, to keep the removal area damp.

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- After all the coating has been removed by chipping and scraping, spray the pipeline again with the amended water and wipe it down with absorbent material.
- Remove all equipment and tools from the excavation and clean them.
- The impermeable or plastic dropcloth should be removed by folding the dropcloth in a manner to contain all pieces of coating that were removed. Care should be taken to avoid leaving any of the coating in the excavation. After the dropcloth is folded and removed, it can be rolled up and placed in double labeled 6-mil thick asbestos disposal bags, with all air removed from bags, and the tops taped with duct tape.
- Remove all Tyvek suits and hand protection then place them in disposal bags. It is required all respirators and rubber boots be washed on plastic or in a washtub.
- All bags are to be placed in a properly labeled waste drum (with the top sealed) and stored in sheltered area until disposal is arranged.

Abrasive Blasting

Ensure that all of the coating has been removed from the section of pipe to be blasted. Always wear disposable coveralls with shoe covers when abrasive blasting. When working adjacent to intact pipe coating, avoid blasting any of the intact coating.

Asbestos Gasket Removal

This guideline applies to the maintenance (O & M) as required of pipe coating that has or may have an asbestos content of 1.0 percent or greater. If data is not available and testing of the coating is not performed, then it must be assumed that the coating contains asbestos and this procedure must be followed. This procedure is designed to minimize worker exposure to asbestos and to prevent airborne emissions of asbestos fibers to the environment. Asbestos removal, state notification, and disposal will be coordinated with the Corporate HSE Director.

Decontamination Procedures

All potentially contaminated materials, equipment, tools, and personal protective equipment must be decontaminated by rinsing or disposing of with approval from competent person on job. Decontamination must be done in an area next to the controlled exclusion area, which has been designated and set-up for decontamination.

- All decontamination of tools, equipment or employees should take place on plastic sheeting or in a wash tub in order to capture contaminated water generated in this process. It is important to use minimized water during this process because the decontamination water must be captured and disposed of in disposal bags.
- All tools that were contaminated must also be sprayed with amended water and wiped clean with absorbent towels. Place towel waste in disposal bags.
- Remove protective equipment. To remove clothing, remove by rolling off the body inside-out. If these items are worn, start with boot covers, then coveralls, and gloves. If a respirator is worn, remove respirator last. Place all disposable clothing in disposal bags.
- Wash respirators with amended water, towel dry and store properly. Wash hands and face. Place towel waste in disposal bags.

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- All bags are to be placed in a properly labeled waste drum with the top sealed and stored in sheltered area until disposal is arranged.

Health Hazards

Although asbestos is an excellent building material, it has the potential to cause serious health problems if it is inhaled. In order for asbestos fibers to be inhaled, they must first become airborne through some type of disturbance. Intact, undisturbed material does not pose a significant health risk and can be safely managed in place.

The three illnesses most commonly associated with asbestos exposure are asbestosis (non-cancerous scarring of lung tissue), lung cancer and mesothelioma (rare form of cancer which affects the lining of the lungs). These diseases do not develop immediately after inhalation but may take 15 to 40 years before symptoms appear. Most of these diseases have been diagnosed in workers who held jobs in industries such as shipbuilding, mining, milling and fabricating, where employees were exposed to very high levels of asbestos on a routine basis. Regardless, appropriate measures should be taken to minimize exposure.