Objective

- Asbestos is a broad term to describe a group of naturally occurring silicate minerals. These minerals have been integrated into thousands of building products due to the functional and versatile properties they retain. The commonly found forms of asbestos are chrysotile, amosite and tremolite. Asbestos minerals have many properties that make it an ideal ingredient in multiple building products. For example, these properties include high heat resistance, electrical resistance, high tensile strength and the ability to be woven. However, asbestos exposure has been well documented to cause many adverse health effects.

  The most common form of asbestos is chrysotile. This mineral is primarily mined in Canada and is shipped worldwide to be used in many products. Chrysotile is a long fibrous mineral in its natural state. Tremolite asbestos is a very common mineral found primarily in vermiculite insulation. Vermiculite insulation is found usually in the attic and walls of older homes. The asbestos mineral amosite is known as “being hard to wet” due to its very short needle like fibers.

  Exposure to airborne asbestos fibers can lead to the development of an asbestos related disease. Asbestosis is the first recognized disease associated with asbestos exposure. Asbestosis is known as the “scarring of the air sacs.” Asbestos exposure can lead to a rare form of cancer called mesothelioma. Lung cancer has been connected to asbestos exposure and is complicated by cigarette smoking.

Purpose

The purpose of the Asbestos Operations and Maintenance Program is to ensure that Case Western Reserve University (CWRU) employees are equipped with the knowledge, skill and experience to identify and control potential exposure to airborne asbestos fibers du

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1.0 Definitions

- *Aggressive method* means removal or disturbance of building material by sanding, abrading, grinding or other methods that breaks, crumbles or disintegrates intact asbestos-containing material (ACM).

- *Amended water* means water to which surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate ACM.

- *Asbestos* includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos and any of these minerals that has been chemically treated and/or altered. For purposes of this standard, asbestos includes presumed asbestos-containing material (PACM), as defined below.

- *Asbestos-containing material* (ACM) means any material containing more than one percent asbestos.

- *Authorized person* means any person authorized by the employer and required by work duties to be present in regulated areas.

- *Building/facility owner* is the legal entity, including a lessee, which exercises control over management and record keeping functions relating to a building and/or facility in which activities covered by this standard take place.

- *Certified industrial hygienist* (CIH) means one certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

- *Class I asbestos work* means activities involving the removal of thermal system insulation (TSI) and surfacing ACM and PACM.

- *Class II asbestos work* means activities involving the removal of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles and construction mastics.

- *Class III asbestos work* means repair and maintenance operations where ACM, including TSI, surfacing ACM and PACM, is likely to be disturbed.

- *Class IV asbestos work* means maintenance and custodial activities during which employees contact, but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II and III activities.

- *Clean room* means an uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

2.0 Methods of Compliance

- Classification System: The Occupational Safety and Health Administration (OSHA) has established a classification system for construction work in which the disturbance of ACM will occur. The OSHA standard dealing with asbestos in construction is 29 CFR 1926.1101. The level of engineering controls, work practices, training and personal protective equipment (PPE) depends on the type of materials to be removed. OSHA classifies asbestos work into the following categories:

  - Class I asbestos work means activities involving the removal of TSI and surfacing ACM and PACM.

  - Class II asbestos work means activities involving the removal of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles and construction mastics.

  - Class III asbestos work means repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.

  - Class IV asbestos work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II and III activities.

  - All Class I and II activities must be performed by a licensed asbestos abatement contractor utilizing licensed workers and supervisors. Asbestos work must follow all applicable local, state and federal regulations.

  - Under no circumstances should Class I or II activities be performed by CWRU personnel. CWRU personnel will have the appropriate training to perform Class III operations and maintenance procedures on asbestos containing materials. Class III activities being performed on Class I materials, such as TSI and surfacing materials, shall be performed within mini-enclosures, glovebag systems or other acceptable isolation methods.

3.0 Training

- Class Operations

  - Contractor Training for Class I operations and for Class II operations that require the use o C2 (us)[C)- 3.769 0 Td( )Tj4 (h.0 Tc 0 Tw 6.81e(a)4 (c)[C)- 3.769 (s)

- Other Class II training that specifically involves activities dealing with asbestos containing roofing materials, flooring materials, siding materials, ceiling tiles or transite panels shall include, at a minimum, all the elements included in paragraph (k)(9)(viii) of the OSHA standard 29 CFR 1926.1101 and, in addition, the specific work practices and engineering controls set forth in the standard relating to that category. Such (ilin)2 (g)2 (t)Tf s, f (o)-14

- outside contractors
- CWRU employees working in the area
- all employers and their employees if the area is part of a multi-employer worksite as stated in 29 CFR 1926.1101

- Polyethylene sheeting may be used to cover the contents within the regulated work area.

- CWRU employees will utilize PPE such as respirators equipped

polyethylene barriers. Mini enclosures or glovebag systems will be utilized to contain Class III activities involving TSI and surfacing materials.

7.0 Record Keeping

- In accordance with 29 CFR 1910.1020, exposure monitoring data utilized to establish a negative exposure assessment shall be maintained by CWRU for at least 30 years from the time in which it was collected. All data utilized to identify asbestos containing materials found on the campus of CWRU will be kept for the life of the building. The records of CWRU employees that are in a medical surveillance program shall be maintained by CWRU for the employee's duration of employment plus an additional 30 years. Employees' training records shall be maintained by CWRU for one year past the last date of employment.

8.0 Worker Protection

- Clothing and Health Requirements

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OSHA's respiratory protection standard 29 CFR 1910.134 in order to determine if the employee will be able to function normally while utilizing the respirator. Every employee issued a negative pressure respirator will also undergo fit testing to ensure that the respirator seal is adequate. The medical monitoring program and respirator fit testing will occur on an annual basis.

9.0 Initial Exposure/Negative Exposure Assessment

- Monitoring/Assessment

  - CWRU shall perform monitoring to accurately determine the airborne concentration of asbestos to which employees may be exposed. Determinations of employees exposure will be made from samples collected from the employees breathing zone that are representative of the eight hour time weighted average (8hr TWA) and 30 minute short term exposures of the employee. The CWRU's employee that is designated as the competent person shall be responsible for collecting the personal air samples.

  - The permissible exposure limit for asbestos is 0.1 fibers per cubic centimeter (F/CC) and the short term excursion limit is 1.0 f/cc over a 30 minute time frame as defined by OSHA. A negative exposure assessment is considered complete when all of the monitoring data is below the 0.1 f/cc PEL and the 1.0 f/cc excursion limit. A negative exposure assessment will remain valid for 12 months from the date which it was performed. The negative exposure assessment will remain valid for all projects that clos

11.0 References

- OSHA 29 CFR 1926.1101 – Asbestos Construction Standard

Employee and Equipment Decontamination	Required if > 25 linear or 10 square feet TSI or SM removal

•Lower to ground as soon as possible but no later than day's end
•Control dust of unbagged material
•Prevent intake of airborne asbestos< through roof vent system Class II
For removal of cement-like siding, shingles, or transite panels
•Intact removal if possible
•Wet Methods
•Lower to ground via dust-tight chute, crane, or hoist immediately or place in an impervious wrap

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