

ASBESTOS

Introduction

- Naturally occurring mineral
- Fibrous in structure
- Different types
- Of the different types, 95% is either chrysotile (white) or amosite (brown)

Positive things about Asbestos

- Good insulator (heat and electricity)
- Good strength
- Resistant to corrosives
- Doesn't burn
- Inexpensive

Uses prior to 1980

- Ceiling tiles
- Drywall taping compound
- Adhesives and mastics
- Thermal system insulation
- Roofing felts
- Gaskets
- Vibration dampers
- Cement sheet (transite)
- Floor tile
- Valve packing and insulation
- Fire resistant drywall
- Sprayed on fireproofing

Health Concerns

- Danger when inhaled or swallowed
- Asbestosis: scarring of the lung / 20 year latency period
- Lung Cancer: 20-30 year latency period
- Mesothelioma: cancer of the lining of the lung / 30 year latency period
- Cancer of the digestive tract

Exposure Levels

- Increased risk to those exposed to asbestos during the course of their work
- Cannot state that there is a threshold below which risk of cancer is not increased
- OSHA 8-hour time weighted average is 0.1 f/cc

Release of Asbestos

- Asbestos is a hazard ONLY if it can release fibers (friable)
- Friable forms may be in pipe insulation, fireproofing, etc.
- Non-friable forms may be in floor tile, transite (unless machined or broken)

Damage of Deterioration

- Water leaks, cutting or bumping, strong air currents, age
- Evidence: debris, ripped or cracked, delamination
- Report to ESH Section immediately

DO's

- Do presume that all pipe insulation, surfacing material and floor tile built before 1980 **DO** contain asbestos (See attached building report).
- Do check the Fermilab Asbestos Inventory-ES&H Shared Volume – IH Folder – Asbestos Folder – Inventory (If you do not have current access to this inventory, call Tom Gibbs (8001) for “Read Access.”).
- Do notify contractors of the presence, location and quantity of asbestos containing material or potential asbestos containing material at the worksite.
- Do contact ESH Section before working with suspicious material

DON'Ts

- Don't use pipes lined with asbestos as a platform to work from
- Don't cut through pipe insulation
- Don't bump into sprayed on materials
- Don't disturb non-friable material
- Don't clean up, repair or dispose of suspicious looking material

LEAD

Those affected

Any work involving construction, alteration and/or repair, including painting and decorating. It includes, but is not limited to:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead
- New construction, alteration, repair, or renovation of structures that contain lead
- Installation of products containing lead
- Lead contamination/emergency cleanup
- Transportation, disposal, storage, or containment of lead or materials containing lead
- Maintenance operations associated with the construction activities described above

Health effects of lead

- Absorbed into body by inhalation and ingestion
- Accumulates in the blood, bones and organs
- Stays in bones for decades
- Can be released over time to cause toxic effects
- Early effects of lead poisoning resemble “flu-like” symptoms
- Cumulative exposure (typical in construction settings) may result in damage to the blood, nervous system, kidneys, bones, heart and reproductive system

Symptoms of lead poisoning

- Weakness
- Reproductive difficulties
- Nausea
- Fine tremors
- Blue line on the gums
- Hyperactivity
- Sleeplessness
- “Wrist drop”
- Pallor
- Headache
- Poor appetite
- Dizziness
- Irritability/anxiety
- Constipation
- Excessive tiredness
- Numbness
- Metallic taste in mouth
- Muscle and joint pain

Medical Surveillance

Contractors must provide blood sampling and analysis to their employees who are or may be exposed to lead at or in excess of the action level ($>30 \text{ ug/m}^3$) on any day.

Contractors must provide a medical surveillance program (in accordance to 29 CFR 1926.62) to all of their employees who are or may be exposed to lead at or in excess of the action level ($>30 \text{ ug/m}^3$) for more than 30 days a year.

Training Requirements

Contractors must meet requirements of 29 CFR 1926.59 (Hazard Communication Standard for Construction Industry). Contractors are also responsible for supplying their employees with the proper training for their employees when the action level is exceeded ($>30 \text{ ug/m}^3$). This training must be in accordance to 29 CFR 1926.62. In instances where working with lead is unique to the contractor's task, the applicable divisional Fermilab ESH Section will provide training. This, however, must be determined on a case by case basis and be agreed upon before the contractor comes on site to work.

Monitoring

Where a determination shows the possibility of any contractor employee being exposed to lead at or above the action level, the contractor shall conduct monitoring which is representative to each employee's exposure. If the contractor has previously monitored for lead exposure where the data has been obtained within the past 12 months, and the workplace conditions closely resemble the present job at hand, the contractor may rely on the results to satisfy the requirements of 29 CFR 1926.62. These results should be reviewed by a Fermilab representative with technical expertise in the field of industrial hygiene before the results are considered acceptable.

PPE Requirements

With exposures exceeding 50 ug/m^3 averaged over an 8-hour period, coveralls, gloves, hats, shoes or disposable shoe covers shall be worn. Respirators must be worn when an 8-hour time weighted average is equal to or exceeds 30 ug/m^3 .

Contractors are responsible for supplying their own employees with the proper PPE. In instances where working with lead is unique to the contractor's task, the applicable division/section/center (D/S/C) Fermilab ESH Group will provide PPE. This, however, must be determined on a case by case basis and be agreed upon before the contractor comes on site to work.

Disposal

A determination must be made either by process knowledge or by sampling as to whether lead containing compounds (either liquid or solid) are hazardous waste. If you are unsure, call your D/S/C ESH representative.

Lead bricks, sheets, etc. can be scrapped if they are not radioactive. A Material Move Request form must first be filled out, and the material must be surveyed by a qualified individual before it is sent out as scrap.

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