



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

Museum and Cultural Heritage Site Hazards

On Display and Unseen



Call: (508) 616-0461 x2
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mass.gov/on-site-consultation-program

Museum and conservation workers can be exposed to occupational health and safety hazards. The activities of acquiring, preparing, and caring for collections for display and study can span a large and complex variety of operations that may expose employees to potential safety and health risks.

Those who work directly with collections, such as conservators, curators, collection managers, registrars, and exhibit installers, are regularly exposed to hazardous materials. Because of these exposures, museums, and conservation associations, including the American Institute for Conservation (AIC) and the American Industrial Hygiene Association (AIHA) are working with OSHA Consultation Programs to assist the museum, collections, and conservation industry members manage their health and safety hazards. These hazards can include both chemical and physical hazards. Here are examples of just a few of these hazards, but there are many more present at these facilities.

Chemical Hazards:

- Arsenic copper green dyes, which were used in clothing and other fabrics, can lead to ulcers all over the skin and may cause alopecia.
- Radium can be found on dials for scientific measuring devices, including watches, compasses, and gauges. Exposure to radium has been linked to dental pain, loose teeth, lesions and ulcers, anemia, bone fracture, and sterility.
- Formaldehyde may be used to preserve specimens in fluids. At low levels, breathing in formaldehyde can cause eye, nose, and throat irritation. At higher levels, exposure can cause skin rashes, shortness of breath, wheezing, changes in lung function, and cancer.
- Arsenic salts and soaps were widely used as a pesticide and preservative, coating the inside of specimen skin mounts, or applying prophylactically to collection surfaces and storage drawers. Exposure to lower levels of arsenic over longer periods of time can cause skin changes, liver and kidney damage, and a shortage of red and white blood cells, which can lead to fatigue and an increased risk of infections. Exposure to high amounts of arsenic can be fatal.



- Paints, epoxies, and solvents are all commonly used chemicals that can off gas hazardous, toxic, and even carcinogenic compounds (such as VOCs, which include toluene, xylene, and benzene). Prolonged exposure to these chemicals can result in damage to the nervous system, liver, and kidneys, as well as increase the risk of developing cancer.
- Mercuric chloride is still used as a pesticide/repellent for botanical specimens. Mercury-tin amalgam historic mirrors leak mercury droplets. Very high mercury vapor concentrations can quickly cause severe lung damage. At low vapor concentrations over a long time, neurological disturbances, memory problems, skin rash, and kidney abnormalities may occur.
- Wood dust accumulation in wood shops found at some museums and heritage sites can be an allergenic and combustible and may lead to respiratory issues and an explosive atmosphere.
- Conservation treatment can involve a wide variety of chemicals, which present their own hazard communication requirements as well as proper ventilation and storage. These chemicals include acids and bases, which are corrosive substances that can cause harm to tissues such as skin, eyes, mucous membranes and breathing passages.

Physical Hazards:

- Working at heights, working from ladders, and working on uneven surfaces can lead to serious injuries from slips, trips and falls. These hazards can be present when fixing items, performing building maintenance, and assembling and dismantling displays.
- Material handling methods, including forklifts and hoists when moving larger artifacts and art installations. These types of activity can lead to serious struck by and crushing injuries.
- Fixed machinery and portable tools used in wood shops and throughout the facility, including table saws, grinders, sanders, and drills. These items can lead to lacerations and amputations of fingers and other body parts if not used properly or are missing safety equipment.





These are only a few of the hazards that can be found in museum and heritage sites. Without the proper precautions staff and even visitors can be exposed to these chemical and physical hazards and suffer adverse health effects and injuries.

The Massachusetts Department of Labor Standards (DLS) through the OSHA Consultation Program offers **free and confidential occupational safety and health consultation services** to small and medium sized businesses. The OSHA Consultation Program can provide assistance with the identification and control of the hazards associated with acquiring, preparing, and caring for collections. The OSHA Consultation Program can also help in the development or improvement of safety and health programs and assist in training employees. The goal is to help prevent injuries and illnesses that may come about due to hazardous workplace conditions and practices.

For more information about the OSHA Consultation Program:

Visit our website: mass.gov/on-site-consultation-program

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or view our program brochure:
mass.gov/doc/on-site-consultation-program-brochure