



Massachusetts Institute of Technology

ENVIRONMENT, HEALTH & SAFETY (EHS) GUIDELINES
FOR
CONSTRUCTION, SERVICE
AND MAINTENANCE
CONTRACTORS

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I. INTRODUCTION

This document is a summary of environment, health and safety (EHS) performance expectations. It is not intended to replace or limit the requirements of federal, state, or local regulations or standard industry practice. It is the contractor's (the "Contractor") obligation to meet applicable EHS requirements whether or not they are addressed in this document or Contractor's site-specific safety program.

At MIT, our students and workforce are our most valuable resource. No one aspect of our business is more important than providing a safe work place and operating in an environmentally sound manner.

Strong EHS Programs will prevent injuries, control losses, and minimize environmental impact. MIT expects contractors to cooperate in providing a safe workplace and healthy environment for the MIT community and its visitors, as well as Contractor's employees and subcontractors, by following industry standards and best practices, to address potential hazards. This effort is best exemplified by the **MIT Environment Health and Safety Management System** slogan, "Working Together to Protect People and Planet."

One of the goals of this document is to communicate MIT's EHS philosophy and expectations to all construction, service and maintenance contractors. While MIT shall communicate known hazards, from our operations, contractors are expected to manage EHS hazards, risks and programs for their employees and subcontractors.

MIT EHS guidelines may be more comprehensive than government regulations. Regulatory compliance is a minimal expectation. Contractors shall, therefore, evaluate the contents of this document as it pertains to the work to be performed at MIT and shall ensure their employees and subcontractors understand these guidelines.

Before starting work at MIT, contractors shall contact the appropriate MIT project manager or supervisor. For work at the Central Utility Plant, contractors must sign in at the third floor main reception desk. Contractors should plan to review any applicable MIT EHS guidelines and standard operating procedures (SOPs.)

Various OSHA standards require that a program be developed and implemented by the employer. These programs include written employer-specific programs (including documentation and record keeping) employee training and program assessment. The OSHA standards requiring such programs include Fall Protection, Confined Spaces, Control of Hazardous Energy (Lock-Out), Hazard Communication, Blood borne Pathogens, electrical safety (particularly higher-voltage work), and certain contaminant-specific exposures, such as lead, asbestos, beryllium, and benzene. Wherever applicable, the contractor may be requested to produce evidence of these programs and its implementation with its on-site employees, as well as those potentially working at MIT.

A. MIT ENVIRONMENT, HEALTH AND SAFETY POLICY

MIT is committed to excellence in environment, health and safety stewardship on our campus, in the larger community of which we are a part, and globally. This long-held commitment is demonstrated through our contributions to environment, health and safety research and teaching, as well as through our institutional conduct. MIT is committed to being at the forefront of large academic research institutions:

In minimizing, whenever feasible, the adverse environment, health and safety impacts of our facilities, activities and operations, to protect human health and the environment (which is one way we define sustainability);

In achieving and maintaining compliance with federal, state and local environment, health and safety laws and good practices in all of our departments, laboratories, research centers, facilities and operations;

In achieving a high standard of institutional accountability for environment, health and safety stewardship, while maintaining the independence of research and teaching;

In providing educational opportunities to our students and other members of our community, to reinforce the values exemplified in this policy and influence their activities during and after their tenure at MIT; and

In measuring and continuously improving our environment, health and safety performance.

II. ADMINISTRATIVE

A. CONTRACTOR ORIENTATION

Contractors may be asked to attend an orientation session, which covers MIT Contractor safety policies. The orientation is often conducted during project kick-off meetings and includes a review of MIT EHS policies. Participants will receive a copy of this document. Contractors are encouraged to use the orientation session as an opportunity to become familiar with MIT EHS expectations and to ask questions about applicable MIT safety procedures. Contractors are expected to review this document with their subcontractors and employees. Contractors may request an orientation or clarification at any time.

B. PROHIBITED ITEMS

MIT prohibits alcoholic beverages, illegal drugs, firearms, ammunition and other weapons on its premises. Cameras and recording devices are strictly controlled and require prior authorization and approval by the MIT Project Manager or Supervisor. MIT may refuse entry to any person possessing such items, or suspected of being under the influence of alcohol or drugs.

Smoking is only permitted outside buildings. Smoking is not permitted near outdoor storage areas for flammable chemicals or when using flammable or combustible liquids outdoors.

C. SAFETY REPRESENTATIVE

The Contractor's designated safety representative (the "Safety Representative") is expected to monitor compliance with applicable EHS requirements. The Contractor shall provide 24-hour, emergency contact numbers or list to the MIT project manager or supervisor. Large projects, MIT may require Contractor to provide a dedicated Safety Representative such as an OSHA-required "competent person." The MIT project manager or supervisor and MIT EHS Office will determine the need for an on-site Safety Representative.

D. TRAFFIC SAFETY AND PARKING

Contractors shall observe speed limits, stop signs, no parking signs, crosswalks and other traffic rules. Workers shall park in designated areas only. Vehicles parked in fire lanes, reserved areas or roadways will be subject to towing. Workers may not park on sidewalks or landscaped areas, unless permitted by the MIT project manager. MIT is not responsible for Contractor's vehicles or their contents.

E. TRAINING

Contractors are fully responsible for the training of their employees assigned to work at MIT. When training is required by law or regulation (e.g., hazardous waste operations or asbestos workers), the Contractor shall ensure that only trained workers are assigned to work at MIT. In addition to meeting the regulatory requirements, it is MIT's expectation that all personnel shall be adequately trained in proper techniques to safely perform the job assigned to them. Contractor personnel may also be required to complete certain MIT-specific training prior to beginning work. Contact the MIT project manager, supervisor or the MIT EHS Office for additional guidance. Contractors may be asked to provide evidence of employee training.

F. POLICE DETAILS

City of Cambridge or MIT police details may be required in those situations where it is not possible or practical to isolate work areas through the use of barriers, fences, or other means, and poses an imminent risk to pedestrian or vehicular traffic.

Some examples of such situations include:

- Crane/Hoisting Operations
- The Use of Bucket Trucks
- Scaffold/Staging erection
- Demolition of a building or structure
- Excavation/Trenching
- The installation/set-up/hoisting of large artwork, sculptures, structures or displays
- Work on building facades or windows
- Installation or removal of telephone poles and/or major overhead wires
- Vehicular access points to and from major construction sites on MIT property

III. ELECTRICAL SAFETY

A. ELECTRICAL SAFETY

- With regard to electrical arc-flash hazards, contractors must assess workplace hazards and enable employees to recognize these hazards and take appropriate precautionary measures. OSHA, NFPA 70E-2004, as well as IEEE Standard 1584 have requirements to evaluate these hazards, as appropriate, particularly with regard to relatively higher voltages and work done where the use of de-energizing circuits or devices is not possible or otherwise practical. Live work, electrical work, shall be performed under a work permit system. An arc-hazard program or policy must be in place for workers that have potential to work on such equipment.
- Contractors will properly administer OSHA's "assured equipment grounding program" using designated "competent persons" or supply GFCI's. Contractors installing electrical service will properly label circuit breakers and disconnect panels .
- Contractors shall comply with the OSHA Control of Hazardous Energy requirements when working with de-energized equipment or circuits. Contractors shall identify the switches that energize the affected circuits or equipment. Contact the MIT project manager or supervisor for assistance in identifying the locations of energy isolating points.
- Electrical extension cords and temporary feeders must be three-wire grounded units, using NEMA grounded receptacles and plug caps. Cords and feeders should be of sufficient rating to transmit power required by tools and machinery.
- Contractor must properly safeguard exposed voltage in occupied areas, by either posting an attendant or appropriate signage and properly securing the area within an enclosed radius of three (3) feet.
- Electrical cables or wires that are placed across roadways, doors or aisles should be secured to the floor and protected from damage.
- Contractors must use explosion-proof equipment (Class I, Division I) in areas containing combustible or flammable vapors, dusts or fibers. Cords, connectors, and equipment should be inspected to verify that they are free of defects.

B. LOCK-OUT/TAG-OUT

The Contractor will assure proper isolation and control of hazardous energy on affected equipment and machinery. Contractors will comply with the OSHA "Lock-Out/Tag out" standard, including training and equipping workers. Contractors are expected to maintain a written program and work cooperatively with MIT personnel for multiple lockouts. See the **Electrical Safety** section of this document.

IV. EMERGENCY PREPAREDNESS

For a list of emergency numbers, please refer to the Emergency Contact List on page 26 of this document.

A. EYE WASH and SAFETY SHOWERS

Where the work involves the use of chemicals, it is important to have rinse/drench equipment available. Workers shall be trained in the use of this equipment and be made aware of the location of emergency showers and eyewash units. If no permanent unit is available, then a temporary unit should be provided and utilized by the contractor. Eye wash and safety showers should be inspected and flushed regularly.

If no water is available in the work area, contact the MIT project manager or supervisor.

B. EMERGENCY EQUIPMENT

Contractors may not block or obstruct access to emergency equipment such as self-contained breathing apparatus, first aid kits, fire extinguishing equipment, eyewash stations and/or safety showers. Contractors may not relocate, obstruct or disable emergency equipment without the prior permission of the MIT project manager or supervisor and the MIT EHS Office.

C. FIRST AID and MEDICAL

Contractors are responsible for ensuring that first aid and medical services are available for their employees. MIT is available to assist with emergency first aid, as necessary (call 617-253-1212). The contractor is responsible for recording injuries and illnesses as required by OSHA

V. ENVIRONMENTAL PROTECTION and HAZARDOUS MATERIALS

A. ASBESTOS

Contractors shall not disturb suspect or confirmed asbestos containing materials (ACM) associated with MIT facilities, unless licensed to do so and authorized by a MIT project manager, supervisor or the MIT EHS Office.. All suspect materials are to be considered ACM until confirmed or proven otherwise, by approved analytical methods.

Examples of suspect materials include:

- Thermal System Insulation
- Surfacing Materials
- Gaskets
- Caulking, Sealants, Adhesives
- Roofing Materials
- Flooring Materials and Mastics

Contact the MIT project manager, supervisor or MIT EHS Office for information pertaining to location of ACM's, sampling and/or analysis results.

B. ENVIRONMENTAL PROTECTION

1. Environmental Permits and Licenses

Contractors and other service providers may be asked to work on behalf of the MIT project manager or supervisor to secure environmental and/or local permits and licenses specific to the project. In some cases, the Contractor may submit the permit application. Contractors are always responsible for ensuring that any work that requires a specific license (e.g. refrigeration systems repair, asbestos/PCB abatement and removal, pesticide application, etc.) is only performed by individuals who are appropriately registered and/or licensed.

2. Notification of Hazardous Materials Releases

In the event oil or a hazardous material is released to the environment during the course of work for MIT, the Contractor shall contact the MIT Operations Center at x3-1500 or MIT Police at (617) 253-1212 and request notification to the MIT EHS Office. MIT will assess the situation and determine whether the spill requires notification by the responsible party to state and/or local agencies.

3. Hazardous Waste Management

Contractors are fully responsible for all hazardous wastes that they generate while at MIT. Hazardous chemicals shall not be poured into sinks or floor drains.

Common hazardous wastes generated at MIT include:

- Used solvents;
- Waste oils and lubricants generated by a variety of operations including motor vehicles, elevators, plant maintenance, etc;
- Unused chemicals and other hazardous substances, such as strong acids & bases, paints, aerosol cans, etc. that are no longer needed, do not meet specifications, are contaminated, have exceeded their storage life, or are otherwise unusable;
- Used ethylene glycol and other coolants;
- PCBs, batteries, lead paint and other miscellaneous materials including, contaminated rags and wipes, broken mercury-containing lamps (i.e. fluorescent lamps) and thermometers.
- **Polychlorinated Biphenyls (PCBs)**

It is the Contractor's responsibility to properly identify, label, and dispose of materials and equipment containing polychlorinated biphenyls (PCBs) in amounts greater than 50 parts per million (ppm) or 10ug/100cm². The MIT EHS Office may be utilized as a resource to assist in this effort. Any equipment containing concentrations of polychlorinated biphenyls (PCBs) in concentrations greater than 50 parts per million (ppm) shall be labeled with the yellow "CAUTION: Contains PCBs" tag per 40 CFR 761. Equipment that is likely to contain PCBs includes: a) equipment containing transformers and/or capacitors that was manufactured before July 2, 1979; b) electrical equipment manufactured before July 2, 1979 that uses heat transfer, dielectric, or hydraulic fluids where it is not known if the fluids have been replaced with non-PCB substitutes; and c) ballasts not marked "non-PCB". Equipment with an unknown date of manufacture and that utilizes transformers, capacitors, dielectric-, heat transfer- or hydraulic fluids shall be assumed to contain PCBs unless testing or other documentation

demonstrates otherwise. PCB concentrations must be known at the time of disposal.

Transformers, electrical switches and capacitors that are part of the power distribution network or are used as part of high voltage research and that are removed as part of a building renovation shall be reviewed for PCB concentration status. Any equipment that has not been tested within the last 10 years and is being removed for disposal shall have the PCB concentration verified. Transformers and capacitors bearing the manufacturer's "Non-PCB" designation do not require testing, and can be assumed to be non-PCB. If the equipment is to be stored, and it is suspected the equipment may contain PCBs, the MIT EHS Office shall be contacted to ensure storage complies with the requirements of 40 CFR 761.

Contractors shall provide timely notification of removal of PCB-containing equipment to the Department of Facilities project manager, or directly to the MIT EHS Office, to keep MIT's PCB Inventory current. Serial numbers, manufacturer, and if known, date of manufacture shall all be provided to the MIT EHS Office. If waste disposal is not handled through MIT's hazardous waste contractor, then the name of the company transporting the waste and the manifest ID number shall also be provided to the MIT EHS Office.

In the expected rare instance of spills involving PCB materials, the MIT EHS Office must be contacted to ensure cleanup complies with the requirements of 40 CFR 761.

4. Recycling

MIT encourages contractors to use commercially reasonable efforts to recycle as much as possible, consistent with good practices and financial prudence. MIT encourages contractors to recycle, at a minimum, the following materials:

- Corrugated Cardboard.
- Clean dimensional wood.
- Uncoated asphalt, bricks, and concrete (ABC).
- Metals including, but not limited to, ductwork, piping, reinforcing steel (rebar), roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
- Any other materials for which reuse, salvaging, or recycling results in a net cost that is equivalent to or less costly than landfill disposal or incineration.

Contractors should be aware that the Commonwealth of Massachusetts has banned certain waste streams, as may change from time to time, from in-state incineration or landfill disposal. Such items may not be included in waste destined for incineration or landfills, except in extremely small quantities, and may include, but is not limited to:

- Lead-acid batteries
- Leaves and Yard Waste
- Whole Tires

- White Goods (Appliances)
- Cathode Ray Tubes (CRTs) including computer monitors
- Metal, Plastic and Glass Containers
- Recyclable Paper and Cardboard

Contractors shall insure that universal wastes are segregated from trash/solid waste. Such wastes may include, but are not limited to mercury thermostats, rechargeable batteries, fluorescent light tubes, etc. **It is the Contractor's responsibility to stay well-informed and compliant with any regulations or changes thereto, pertaining to wastes and special disposal of the same.**

5. MIT Environmental Goals

MIT has established sustainability environmental goals, and seeks continuously to improve upon them over time, in part, through the broad participation of construction, service and maintenance contractors. Included among MIT's long-range goals are to;

- Conserve energy, seeking continuous reductions in our *per capita* energy consumption
- Reduce campus air emissions, including those from transportation, of green house gasses and regulated pollutants
- Reduce material and resource consumption, including office and laboratory supplies and water
- Increase the recycling and conservation of materials
- Increase the use of recycled-content products
- Reduce the volume and toxicity of our hazardous waste streams
- Improve our indoor environment, including both the indoor air quality and the comfort and productivity of our work and living spaces, by considering sustainability in our design, operations and maintenance policies
- Improve the urban environment, including landscape quality and the site and pedestrian environment
- Support community-wide and regional sustainability efforts

C. CHEMICALS and HAZARDOUS MATERIALS

- Chemicals and hazardous materials used at MIT shall be accompanied by a Material Safety Data Sheet (MSDS.) Prior to use of the material(s), Contractors shall provide an MSDS to the MIT project manager or supervisor for review by MIT's EHS Office. Subsequent to this review, MIT may request material substitutions to less hazardous products.
- Contractors and their employees shall comply with all regulatory

requirements in the management of the chemicals and hazardous materials they use at MIT. Contractor personnel should be thoroughly familiar with the information contained in the MSDS and shall use the chemicals safely. If the use of the material has the potential for exposure to MIT personnel (students, faculty, employees or residents), the contractors should notify the MIT project manager or supervisor (before starting the job), who should consult with MIT EHS. An example of such exposure would be the application of epoxy-based floor finishes. MIT EHS will make recommendations to prevent student and/or employee exposures to chemicals or hazardous materials. Contractors should be aware that vapors and/or odors from chemicals can travel long distances. Contractors should make commercially reasonable efforts to minimize or eliminate the potential for exposure. All containers should be clearly labeled.

- Contractors shall provide secure storage, containers, and spill control for chemicals (including fuels and oils) stored on open ground or other areas lacking spill containment. See the **Environmental Protection** section of this document.
- Contractors shall immediately report any chemical spill or release to MIT Police Department, the MIT project manager, supervisor or MIT EHS Office. MIT may ask the Contractor to notify government agencies, if required by federal and state environmental laws governing spills and releases. MIT may make the notification on behalf of the Contractor. See the **Environmental Protection** section of this document.
- Contractors are fully responsible for responding to oil and/or hazardous material spills resulting from their actions or from their failure to provide adequate safeguards, including without limitation, the full cost of such response. Following the cleanup, the MIT project manager or supervisor, working with the MIT EHS Office, will assist the Contractor in providing proper waste removal.
- Contractors are responsible for managing their chemical containers according to federal, state, and local regulations. Contractors shall remove any remaining chemicals or hazardous material products within 24 hours of their completed use on a project, unless approval is received from the MIT project manager or supervisor to leave the material on site.
- MIT contractors who generate waste materials will comply with all regulatory requirements and MIT policies. Contractors may not discharge chemicals or wastewater to drains without the express approval from MIT EHS Office. See the **Environmental Protection** section of this document.
- Contractors should use the minimum quantity of chemicals necessary to perform the day's work. Portable containers should not exceed five-gallon capacity without a MIT project manager or supervisor's approval.
- Special precautions should be observed prior to using any chemicals or hazardous materials in mechanical, electrical or air distribution rooms. The MIT project manager or supervisor should be notified prior to use of chemicals in these areas.

Under no circumstances shall a contractor use a material in an application that is banned under the Toxic Substances Control Act (40 CFR 700-799).

VI. FIRE AND LIFE SAFETY

A. HOT WORK

MIT utilizes and enforces a permit system to help minimize the risk associated with HOT WORK. We encourage contractors to provide alternative methods to avoid Hot Work.?

If Hot Work is to be performed, it is MIT's expectation that contractors conduct a job-specific hazard assessment. All flammable and combustible materials should be removed from the area. The assessment should also include evaluating other work in the vicinity that has the potential to create a hazard. The Contractor should meet or exceed all regulations and industry standards when conducting Hot Work.

- Contractors shall contact the MIT project manager or supervisor to obtain a Hot Work Permit for any temporary operation involving open flame or which produces sparks. This includes, but is not limited to, welding, cutting, grinding, brazing, and torch-applied roofing. A City of Cambridge permit is required for the use and storage of welding gasses. In order to obtain the permit, contractors shall present a copy of the MIT Hot Work Permit to the Cambridge Fire Department.
- The Hot Work Permit should be valid for only one job on one shift, unless other arrangements have been agreed upon.
- Fire protection equipment and protective materials (fire blankets, portable exhaust ventilation etc.) shall be stored at the Hot Work site before the work begins.
- A designated fire watch is required during Hot Work. The Contractor must hire a Cambridge Fire Department fire fighter detail for this purpose. If the fire watch observes unsafe conditions during the Hot Work operation, he/she shall stop the work until the hazard is eliminated.
- The Contractor will verify Hot Work equipment is in proper working order and in a fire safe condition.

B. FIRE PROTECTION IMPAIRMENTS

- Contractors shall take precautions to prevent damage to fire protection systems. Report damage immediately to the MIT project manager or supervisor. Call 617-253-1500 immediately.
- Contractors shall not operate any fire protection valve without prior approval of the MIT project manager or supervisor.
- Contractors who need to disable a fire protection system should contact the MIT project manager or supervisor and complete a FIRE PROTECTION IMPAIRMENT TAG (Red Tag). Notify the project manager of any planned fire protection impairment at least five (5) days in advance to obtain an approval to shutdown. This notification applies to sprinklers, fire mains, fire pumps, and fire alarm system components.

- During fire protection equipment impairments, all operations that present a fire hazard will be suspended. Such activities would include all types of hot work. Fire protection systems should be restored as soon as possible by the end of the workday. Fire watch personnel may be required during fire system impairments.
- Contractors shall not suspend materials or equipment on sprinkler pipes, valves or supports.

C. FIRE SAFETY

- MIT prohibits smoking in its facilities. Violators may be asked to leave the premises on first offense.
- Contractors should be familiar with the location of fire alarm activation devices (pull stations,) portable fire extinguishers and at least two exit routes from the work area. Contractors shall not obstruct access to exits, exit routes or fire equipment or prop open stairwell doors.
- All fires must be reported by activating the nearest fire alarm station, followed by dialing the appropriate MIT EMERGENCY NUMBER. Dial 100 from an MIT phone or 617-253-1212 from any phone.
- Contractor-supplied portable fire extinguishers shall be clearly marked and have current inspection. Contractors shall provide their own portable fire extinguishers for any hot work.
- Flammable and combustible liquids are easily ignited and thus shall meet all the labeling, use, storage and disposal requirements outlined in the Chemicals and Hazardous Materials section in this document.
- Contractors shall obtain proper authorization from the MIT Repair and Maintenance Department before opening a fire hydrant or standpipe. Contractors may not use MIT fire hoses unless prior approval has been obtained from the MIT project manager or supervisor.
- Contractors performing welding, torch cutting, soldering, grinding and other forms of "Hot Work" shall adhere to the special requirements listed in the **HOT WORK** section of this document. HOT WORK shall not be conducted during times when sprinkler systems have been impaired.

D. HOUSEKEEPING and MAINTENANCE OF SITE

- Temporary cords or hoses should be supported at least six feet above the floor when routed across aisles, accessible to the MIT public. If this is not possible, cords and hoses should be secured to the floor by some other temporary means, such as duct tape, matting, etc., to eliminate trip hazards. The area should be properly marked with appropriate warning signs or traffic cones to alert pedestrian traffic.
- Workers shall place waste materials in proper containers. The contractor will keep work areas clear of form and scrap lumber and other debris. Contractors will remove all waste materials and debris daily.

- Contractors will place equipment and materials so as not to block exits, aisles, doors, stairs, ladder ways, emergency equipment or electrical panels.
- Workers will remove nails and other sharp objects protruding from surfaces and will sweep up loose nails and screws.
- Contractors may not store tools and equipment above work areas. Workers shall not leave materials in plenum spaces such as air handling rooms.
- Contractors are encouraged to recycle discarded materials such as wood, cardboard, steel, copper, wire, etc. Contact the MIT EHS Office for proper disposition of these recyclable materials. See the **Environmental Protection** section of this document.
- Upon completion of certain projects, contractors may be required to provide the MIT project manager or supervisor with documentation which indicates the amount of material recycled or disposed of.

E. ENTRANCES and EXITS

Contractors may use only those entrances and exits designated for the work area. MIT posts emergency exits with appropriate signs and often equips them with exit alarms to discourage unauthorized use. Contractors who need to disable door alarms shall obtain prior approval from the MIT project manager or supervisor. Means of egress shall not be blocked. Fire doors must not be propped open.

F. INCIDENT REPORTING

In order to maintain a safe and secure work environment, Contractors should report any incidents or observations that may affect the safety of their employees, MIT employees, MIT students, or visitors.

Unsafe acts or behavior - Report unsafe behavior and conditions immediately to the MIT project manager or supervisor. Stop work if an imminent danger exists. Work will cease until the contractor corrects the issue to the satisfaction of the MIT project manager or supervisor.

Accidents, Injuries, Near-Miss - Within 24 hours of an accident or injury requiring medical attention, contractors shall report details of all such incidents to the MIT project manager or supervisor and/or MIT EHS Office. The Contractor will document an accident investigation on all injuries other than first aid cases as defined by OSHA Record Keeping Guidelines. The Contractor will submit a copy of the accident investigation and corrective actions to the MIT project manager, supervisor and the MIT EHS Office within 48 hours of the incident.

Reporting Emergencies - Contractors should be familiar with emergency reporting guidelines. When reporting emergencies by telephone, include the building, exact location, room number, the type of emergency, callback name and telephone number. Stay on the line until the emergency operator ends the call. The Contractor should remain available to provide information to the emergency responders, as needed. Contractors are responsible for implementing their own system for accounting for employees during an emergency. Contractors shall ensure that a system is in place to safeguard its employees during a campus

emergency that requires either evacuation or shelter-in-place. This system may require input or support from MIT project managers or MIT EHS.

Security Issues - Notify any MIT police officer or call the Facilities Operations Center to report any issue causing security concern by calling 617-253-1500. Security issues might include, but is not limited to, theft, threats or acts of violence, malfunctioning or disabled security devices and violations of security policies or procedures.

OSHA Visits- The Contractor shall immediately notify the MIT project manager, supervisor or MIT EHS Office immediately of a visit by an OSHA representative.

6. STORAGE AT JOB SITE

Generally, it is the responsibility of the Contractor to secure any materials or equipment at the job site. Industrial and construction materials to be stored outside shall be approved by the MIT project manager or supervisor, after an evaluation of security and environmental issues, including secondary containment requirements, storm water runoff concerns, etc. Mechanical and electrical equipment rooms may not be used for storage.

VI. HEAVY EQUIPMENT

A. POWERED INDUSTRIAL VEHICLES

- Industrial powered vehicles (more commonly known as Powered Industrial Vehicles or PIVs) include vehicles such as forklifts, powered pallet jacks, manned rail or wire-guided equipment or other vehicles that allow operators to move large or heavy loads. The contractor shall ensure its employees and subcontractors, if applicable, have had training for the operation of PIVs, in compliance with OSHA standards. Contractors should implement a method, such as identification badges or vests, that clearly identifies trained operators. Workers may not use MIT owned or leased PIV's without the written permission of the MIT project manager or supervisor.
- Workers operating PIVs should conduct and document daily pre-use equipment inspections, to assure that such equipment is in safe operating condition. The documentation shall include the vehicle inspected, date of inspection and specific safety items or other features inspected. Vehicles with malfunctioning safety features shall be removed from service until repairs are completed.
- Battery charging shall be performed in areas designated by MIT. Appropriate PPE should be used during all battery charging operations. Refueling must be performed in areas with adequate ventilation. Workers shall not refuel a vehicle while the engine is running.

B. UTILITY VEHICLES

Utility vehicles include vehicles such as golf carts, three wheelers and all-terrain vehicles or other vehicles intended for transport of personnel, small amounts of equipment and tools. Contractor personnel shall be trained and have a valid state drivers license prior to operating utility vehicles on MIT property. The contractor may not use MIT owned or leased

utility vehicles without the permission of the MIT Project Manager or supervisor.

- Contractors operating utility vehicles shall conduct and document daily pre-use equipment inspections to assure that it is in safe operating condition. The documentation shall include the vehicle inspected, day of inspection and specific safety items inspected. Vehicles with malfunctioning safety features will be removed from service until repairs are completed.
- All utility vehicles shall be equipped with: horn, backup alarm, strobe (unless prohibited due to use in flammable storage environments) light, off/on switch, and front and rear lights, if the vehicle will be operated outdoors at night.
- Battery charging shall be performed in areas designated by MIT. Appropriate PPE will be used during all battery charging operations. Refueling shall be performed in areas with adequate ventilation. Contractors may not refuel a vehicle while the engine is running.
- Contractors shall operate utility vehicles in designated aisles, areas or paths. When vehicles are operated on roadways to perform work, the Contractor should provide warning signs or personnel to alert oncoming traffic. The use of diesel, gasoline or propane powered utility vehicles is NOT permitted in MIT facilities. These types of vehicles may only be operated outdoors, unless authorized by the MIT project manager or supervisor and indoor controls, such as barriers, exhaust ventilation, and/or off-hour scheduling are implemented.
- Contractors should implement a documented preventative maintenance program for all Contractor owned vehicles. The maintenance program should meet or exceed the manufacturer's specifications.

C. CRANES and HOIST

- The Contractor shall not use MIT owned or leased crane or hoist equipment.
- Crane operators and riggers shall be thoroughly trained and competent in the use of such equipment. The Contractor shall provide a "competent person" (as required by OSHA) to oversee and/or perform lifting operations.
- Contractors shall establish a restricted work area, using barricades and other appropriate controls, to minimize the hazards to personnel from swinging or falling objects. See the WORKING AT HEIGHTS section of this document for details.

VII. SPECIAL HAZARDS

A. CONFINED SPACE ENTRY

Contractors who may need to enter a confined space at MIT, as part of service delivery, shall conduct entry under a Permit-Required Confined Space (PRCS) program at least as stringent as that required by OSHA 1910.146. Permit-required confined spaces may include, but is not limited to, storage tanks, in-ground vaults, boilers, trenches, manholes, lift stations, and valve pits. Entries that involve high

hazard work, such as welding, IDLH (Immediately Dangerous to Life and Health) atmospheres, oxygen deficiency etc, require prior notification to the MIT project manager and the MIT EHS Office.

Prior to conducting work in or around PRCS, contractors shall notify the MIT EHS Office. Upon this notification, MIT will provide the Contractor with information relative to the known or anticipated hazards of the space. A Contractor EHS Representative should conduct an independent assessment of the confined space. Upon completion of the confined space entry, the Contractor will notify the MIT EHS Office and provide information on any unexpected hazards that were encountered.

The Contractor shall provide all safety and personal protective equipment, including atmospheric testing equipment, protective clothing, hard hats, respirators, life-lines, ventilation equipment and safety harnesses, etc. The Contractor shall ensure its workers have received training in the use of this equipment before they enter the space. A list of all Permit-Required Confined Spaces at MIT is available by contacting the MIT EHS Office.

B. EXCAVATION and TRENCHING

- Prior to excavating or trenching, Contractor shall be responsible for utility marking, signage and barricades, shoring, and following applicable confined space entry procedures. Contact the MIT project manager or supervisor before beginning any excavation work.
- The Contractor shall mark locations of underground utilities before digging and contact DIGSAFE (1-888-DIGSAFE), as required by law. This procedure is necessary to prevent service interruption or hazards from damaged utility lines. Hand digging may be required near certain areas, such as high voltage and gas lines.
- The Contractor shall comply with the OSHA Excavation Standards and other regulatory requirements associated with the work.
- The Contractor will place warning signage and barriers on all sides of a trench or excavation to prevent pedestrians from crossing the opening.
- The Contractor will provide a “competent person”, as required by OSHA Excavation Standards, to inspect the excavation area and protective systems.
- Contractors will backfill as soon as possible, once the work has been completed. To the extent possible, Contractors will backfill by the end of each workday to avoid the hazards of open excavations, particularly at night. For projects that cannot be back-filled by the end of the day, the Contractor will adequately barricade the excavation and/or provide steel plate covers. Plate cover edges should be secured with cold patch for vehicular use.
- An MIT police detail may be required for excavating and trenching. Contact your MIT project manager or MIT EHS Office.

C. CONSTRUCTION and RENOVATION

Whenever possible, exposure to physical and chemical hazards should be minimized by using engineering controls. Barricades, barriers and exhaust ventilation should be used. Because hazards associated with construction and renovation often change as projects progress, periodic hazard assessments should be conducted, to anticipate and plan for such changes. Contractor activities such as cutting wallboard or other dust-generating activities have the potential to activate smoke detectors/building evacuation alarm systems.

Contractors are required to post construction work areas with Emergency Phone numbers, key contacts, and all permits.

D. PERSONAL PROTECTIVE EQUIPMENT

- Contractors are responsible for assessing hazards and associated risks, and for selecting, maintaining and providing to its employees: 1) Personal Protective Equipment (PPE) appropriate to the task at hand, and 2) adequate training on the inspection and use of PPE. Contractors shall comply with applicable regulations regarding such equipment.
- The MIT project manager, supervisor or MIT EHS Office may choose to stop work if appropriate PPE is not being used.

E. COMPETENT AND QUALIFIED PERSONS

Regulations require that an identified qualified and competent person be represented for work such as, crane operations, electrical safety, excavations, fall protection, and scaffolds.

- **Qualified person-** one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.
- **Competent person-** one who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

MIT expects (where applicable) contractors to have trained competent and qualified persons within line of sight of such activities. MIT management will periodically audit projects requiring competent and qualified persons. If competent or qualified persons are not available, work will be stopped.

F. WORKING IN OCCUPIED AREAS

The MIT project manager or supervisor will coordinate service interruptions with affected MIT customers. Contractors shall notify the MIT project manager or supervisor as early as possible in advance of any planned service interruptions (i.e., electricity, air conditioning, water, phone/data). Accidental or unscheduled interruptions shall be reported immediately to the emergency site telephone number and the MIT project manager or supervisor.

IX. TOOLS and EQUIPMENT

A. COMBUSTION ENGINES– INDOORS

- Contractors shall not operate combustion engines such as those in vehicles, compressors, generators, welding machines and power tools inside buildings unless they connect the exhaust to an approved venting system.
- Contractors shall store fuel (gasoline, diesel and/or LPG) outside MIT buildings.
- In most instances, MIT prohibits the use of propane-fueled vehicles inside buildings. The lifting tasks of some projects, however, may require propane-fueled lift equipment. In such cases, the Contractor shall consult with the MIT project manager or supervisor and MIT EHS Office.

B. COMPRESSED GAS CYLINDERS

- Cylinders must be labeled or marked to identify contents and properly secured.
- Workers shall close valves when cylinders are idle, empty or moved. Valve protection caps shall be in place when cylinders are moved or stored.
- Contractors shall keep cylinders a safe distance or shielded from Hot Work. Contractors shall comply with OSHA requirements on the separation of cylinders containing incompatible chemicals.
- Regulators, hoses and torch assemblies shall be in working order and checked for leaks prior to initial use or installation. If a leak develops, remove the cylinder to a safe location outside the building.
- Compressed gas cylinders shall not be stored in job/tool boxes.

C. COMPRESSED AIR

- Workers should be advised against using compressed air to clean dust from clothing or skin.
- Workers using compressed air to clean chips and dirt from surfaces must wear eye protection and direct the air stream away from other workers. A nozzle should be used that restricts air pressure to a maximum of 30 PSI.

D. POWDER ACTUATED TOOLS

- Contractors should ensure powder-actuated tools are: 1) used only by trained and, if required, licensed personnel 2) not left unattended or accessible to unauthorized persons; and 3) not used in explosive or flammable atmospheres.
- Explosive-actuated tools shall meet the American National Standard Institute “Safety Requirements for Explosive Actuated Fastening Tools” and all other regulatory and applicable agency standards. (Workers may not use any tool that does not meet appropriate design standards.)

E. TOOLS AND EQUIPMENT

- In general, Contractors should provide their own tools, equipment and secure storage for valuable tools. Contractors may not use tools owned by MIT unless authorized by the MIT project manager or supervisor.
- Contractors should inspect and maintain tools in safe condition using them only for jobs in which they are intended.
- Contractors shall use non-sparking tools in areas where flammable liquids are stored or dispensed.
- Portable electrical power tools, hand tools, machinery and equipment shall be approved by the appropriate agency, double insulated or have an approved grounding system. Ground Fault Circuit Interrupters (GFCI) shall be used in wet areas.
- When using pneumatic tools, the Contractor shall disconnect hoses from air supply when not in use.

F. LASERS and RADIOACTIVE DEVICES

- Contractors using Class IIIB or IV lasers or radioactive devices shall license, register and use such devices in accordance with all applicable regulations. Contractors may be required to provide evidence of current licenses and registrations for workers.
- Contractors shall not enter spaces/laboratories where “LASER ON” signs are illuminated.

X. WORKING AT ELEVATIONS

A. LADDERS

- Ladders are intended for access to heights only. With the exception of properly deployed stepladders, ladders are not suitable working platforms. If an elevated platform is necessary, MIT expects Contractors to provide a suitable platform with guardrails, such as a ladder stand, a scaffold, or an aerial work platform.
- Only Type 1 Industrial or Commercial grade ladders are acceptable. Ladders with broken steps or rails, missing anti-slip feet, or other defects are prohibited.
- Workers shall not place ladders in door swing areas unless the door is locked or otherwise blocked from striking the ladder.
- Workers should use wooden or fiberglass portable ladders when working with electricity.
- When used against beams, pipes, or similar supports, workers shall secure ladders to prevent shifting, slipping, or being knocked over.

- When workers use ladders to reach elevated levels, such as a deck on a scaffold, the top of the ladder shall extend at least three feet above the work level and be tied off at the top.
- Workers shall not separate the sections of extension ladders.
- Workers shall not stand on furniture to reach work. A stepladder or other appropriate platform should be used.

B. MOBILE EQUIPMENT/WORK PLATFORMS

- Contractors may not use MIT-owned aerial work platforms without the written permission of the MIT project manager or supervisor.
- Contractors shall assure trained personnel operate mobile equipment, such as extensible boom lifts, scissors-type lifts, and cranes. The contractor shall provide trained personnel to assist the operator in clearing building fixtures or other obstructions when raising, lowering or advancing the equipment.
- Contractors shall conduct a documented inspection of equipment prior to each day's use to assure it is in safe operating condition. Workers should replace or repair defective equipment before bringing it on site.
- For outdoor projects, it is not recommended that workers operate cranes, aerial platforms or similar equipment within fifty (50) feet of overhead utilities, unless the contractors "competent person" has reviewed and approved the work.

C. SCAFFOLDS

- MIT expects scaffold erectors and users to comply with regulations and standard industry practices. Contractors shall train scaffold erectors and users in safe work practices and procedures.
- Scaffold erectors hired by the Contractor shall work under the supervision of a “competent person” as defined by OSHA Scaffolding Standards. The “competent person” shall be within sight of the scaffold erecting activity.
- Contractors shall use scaffold equipment according to manufacturer’s specifications. Contractors shall not mix different brands of scaffolds. The Contractor shall ensure scaffold equipment is inspected before use and deteriorated or damaged components are removed from service.
- Platforms shall be fully planked. Wood planks shall be graded for scaffold use by an approved agency. Planks shall be free of holes, saw cuts, and other defects. The Contractor will provide and install toe boards, screens, or other suitable guards around the perimeter of elevated work surfaces to prevent falling objects from striking personnel below.
- Scaffold erectors or dismantlers shall tag any incomplete scaffold assembly as “Incomplete - Do Not Use” or other similar form of posted warning.

D. WORKING AT HEIGHTS

- Contractors shall protect workers from falls when performing elevated work above 6 feet or within 15 feet of the edge of a roof or skylight. Typical exposures may include, aerial platforms; scaffold and rack erection; elevated conveyor installation and maintenance; utility work; and, building exterior maintenance.
- Contractors should employ at least one form of conventional fall protection, such as railings, nets, guarded work platforms, or personal fall arrest systems.
- Workers shall wear personal fall arrest equipment, as required when working from aerial work platforms, when working from a suspended platform, such as those used for window washing; or when working from a scaffold or other elevated platform with incomplete guardrails or decking. Fall protection equipment shall be used in these situations as outlined by the equipment manufacturers.
- Contractors are responsible for training affected workers in the proper use and care of fall arrest equipment. Users shall perform a documented inspection of their equipment before each use.
- The Contractor shall guard floor and roof openings by providing suitable barriers, guardrails, or covers and securing them to prevent accidental removal or displacement. Toe boards, screens or other suitable guards shall be installed around the perimeter of floor or roof openings to prevent falling objects from striking personnel below.

- Contractors may not perform overhead work when there is a danger of falling objects striking a person below. Contractors shall isolate such work areas to protect persons from falling objects. The Contractor will barricade and monitor an area of fifteen (15) feet minimum radius from the work area, to prevent unauthorized personnel from entering the hazard area. If the Contractor cannot establish this secure area due to operational constraints, then the work shall be scheduled during off-shift hours. Workers shall raise and lower tools and equipment to overhead work areas through the use of aerial work platforms or ropes and tethers. Throwing or dropping tools and equipment is prohibited.
- Workers assigned to work on roofs shall notify the MIT project manager or supervisor prior to starting work each day. For Central Utility Plant roof work, the control room personnel must also be notified.

MIT EMERGENCY CONTACT LIST

**For *any* type of emergency (fire, medical,
chemical spill etc)**

Call 617-253-1212

Department of Facilities Control Desk

(shutdowns etc.)

Call 617-253-1500

Environment, Health and Safety Office

(general business, reporting accidents)

Call 617-452-3477

Cambridge Fire Department (permits, details,
non-emergency)

Call 617-349-4918

MIT Police Department (general business,
details, non-emergency)

Call 617-253-2996

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**ACKNOWLEDGEMENT OF RECEIPT OF THIS BOOKLET
MIT EHS REQUIREMENTS FOR
CONSTRUCTION, SERVICE AND MAINTENANCE CONTRACTORS**

NAME, ADDRESS AND TELEPHONE OF CONTRACTOR TO MIT:

BRIEF DESCRIPTION OF WORK:

CONTRACT/WORK ORDER No: _____
YOUR MIT PROJECT MANAGER/SUPERVISOR: _____

We acknowledge receipt of the MIT document "Environment, Health and Safety Requirements for Construction, Service and Maintenance Contractors". We have read this booklet and will ensure all persons engaged by us abide by the conditions prescribed throughout the document and implement a documented disciplinary process for all violations.

Signed:

Date:

Name (Printed):

Title:

PLEASE COMPLETE AND RETURN/FAX TO YOUR MIT PROJECT MANAGER
OR SUPERVISOR: