



Massachusetts Institute of Technology

ENVIRONMENT, HEALTH & SAFETY (EHS) REQUIREMENTS

for

**CONSTRUCTION, SERVICE
AND MAINTENANCE
CONTRACTORS**



Contractor EHS Manual

**Version 3
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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, as 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.

INTRODUCTION

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

Strong Environmental, Health and Safety (EHS) programs will prevent injuries, control losses, and minimize environmental impact. We expect contractors to join us in providing a workplace free of uncontrolled hazards to people, the environment and our campus. This is best exemplified by the **MIT Environment Health and Safety Management System** slogan, "Working Together to Protect People and Planet."

MIT's contractor safety effort is not intended to directly manage the safety of contractors or their personnel. While MIT shall communicate known hazards, Contractors are expected to manage Environment, Health and Safety hazards, risks and programs for their employees and subcontractors. Our goal here is to clearly communicate our EHS philosophy and expectations to all Construction, Service and Maintenance Contractors.

MIT EHS requirements may be stricter 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. Contractors shall ensure their employees and subcontractors understand these requirements. Please see the receipt at the end of this booklet. An authorized contractor representative should sign the receipt prior to commencing work with a copy being submitted to the MIT Project Manager or Supervisor (or in the case of service contractors, the MIT Supervisor.) The signature should indicate an acknowledgement and understanding of the requirements of this document. The information in this document should be communicated and jointly enforced by MIT personnel, contractors and sub-contractors.

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 3rd floor main reception desk. Contractors should review any applicable MIT EHS guidelines and standard operation procedures (SOP's) with MIT before beginning work.

This document is a summary of EHS performance expectations. It does not replace or limit the requirements of federal, state, or local regulations or standard industry practice. It is the contractor's obligation to meet applicable EHS requirements whether or not they are addressed in this document.

ASBESTOS

Contractors shall not disturb suspect or confirmed asbestos containing materials (ACM) associated with MIT facilities, unless hired to do so and authorized by a MIT Project Manager, Supervisor or Environment, Health and Safety representative. Contractors shall adhere to all MIT applicable management plans, work plans and specifications written or verbally communicated in addition to all Federal, State and Local regulations. All suspect materials are to be considered ACM until confirmed or proven otherwise by approved analytical methods. Contact the MIT Project Manager, Supervisor or Environmental, Health and Safety Department for information pertaining to location of ACM's, sampling and/or analysis results.

CHEMICALS and HAZARDOUS MATERIALS

1. 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.
2. 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 MIT Project Manager or Supervisor shall consult EHS before starting the job. EHS is available to make recommendations to minimize exposures to chemicals or hazardous materials. Contractors shall be aware that vapors and/or odors from chemicals can travel long distances. Every attempt shall be made to minimize or eliminate the potential for exposure.
3. 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.
4. Contractors shall immediately report any chemical spill or release to MIT Police Department and the MIT Project Manager or Supervisor. 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.
5. 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 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. If the contractor fails to perform any action required, MIT, at its option, may complete the action at the contractor's expense. The contractor will indemnify MIT for fines, penalties or other legal exposures caused by the spill.
6. 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.

7. MIT contractors that generate waste materials will comply with all regulatory requirements and MIT requirements. Contractors may not discharge chemicals, wastewater to drains without the written approval of the MIT Project Manager or Supervisor. See the **Environmental Protection** section of this document.
8. Contractors shall use the minimum quantity of chemicals necessary to perform the day's work. Portable containers shall not exceed five-gallon capacity without a MIT Project Manager or Supervisor's approval.
9. Special precautions shall 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. Contact the MIT EHS Office.

COMBUSTION ENGINES -- INDOOR

1. 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.
2. Do NOT refuel with the engine running. Contractors shall store fuel (gasoline, diesel and/or LPG) outside MIT buildings.
3. 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.

COMPETENT PERSONS

Regulations require "competent persons" for situations, such as, crane operations, electrical safety, excavations, fall protection, and scaffolds. MIT expects (where applicable) contractors to have trained competent persons within line of sight of such activities. MIT management will periodically audit projects requiring competent persons. If a qualified competent person is not available, work will be stopped.

COMPRESSED AIR

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

COMPRESSED GAS CYLINDERS

1. Cylinders shall be labeled or marked to identify contents and properly secured.

2. Workers shall close valves when cylinders are idle, empty or moved. Valve protection caps shall be in place when cylinders are moved or stored.
3. 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.
4. 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.

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 are not limited to storage tanks, in-ground vaults, boilers, trenches, manholes, lift stations, and valve pits.

Prior to conducting work in or around PRCS, contractors shall notify the MIT Project Manager or Supervisor. Upon this notification, MIT shall provide the contractor with information relative to the known or anticipated hazards of the space. Upon completion of the confined space entry, the contractor will notify the MIT Project Manager or Supervisor 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 their 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 your Project Manager.

CONSTRUCTION/RENOVATION

Contractors conducting construction/renovation activities shall ensure that the health and safety of MIT students and workforce is not adversely affected. Whenever possible, exposure to physical and chemical hazards shall be minimized using engineering controls. Barricades, barriers and exhaust ventilation shall be used. Since the hazard associated with construction and renovation often change as projects progress, it is necessary to conduct periodic hazard assessments to anticipate and plan for these changes. In addition, 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.

Contractors are responsible for contacting 1-888-DIG-SAFE (344-7233) prior to commencing any excavations/trench work. See Excavating and Trenching.

CONTRACTOR ORIENTATION

Contractors may be required to attend an orientation session, which covers MIT Contractor Safety requirements. The orientation is often conducted during project kick-off meetings and

includes a review of MIT EHS requirements. 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 questions about applicable MIT safety procedures. Contractors are expected to review this document with their sub-contractors and employees.

CRANES AND HOISTS

1. The contractor shall not use MIT owned or leased crane or hoist equipment unless contractually indemnified to do so or unless they have signed a separate indemnification authorizing them to do so.
2. Before lifting the first load of the day, the contractor shall verify the hoist system will operate properly by conducting documented inspections.
3. Contractors shall not leave suspended loads unattended. When moving a suspended load, the operator shall assure personnel are clear of the path of transport. Workers will not stand or walk under suspended loads.
4. 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 certain lifting operations.
5. 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.

ELECTRICAL SAFETY

1. Contractors will properly administer OSHA's "assured equipment grounding program" using designated "competent persons". Contractors installing electrical service will label circuit breakers and disconnect panels as to their purpose.
2. Electrical extension cords and temporary feeders shall be three-wire grounded units using NEMA grounded receptacles and plug caps. Cords and feeders shall be of sufficient rating to transmit power required by tools and machinery.
3. The responsible contractor shall properly tag temporary feeder wiring at the source for identification purposes.
4. 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. Due to their ability to store residual electrical energy, high voltage circuits shall be grounded on both sides of affected workers. Contact the MIT Project Manager or Supervisor for assistance in identifying the locations of energy isolating devices.
5. Exposed voltage in occupied areas shall be attended by a contractor employee or be posted and barricaded by the Contractor within an enclosed radius of three (3) feet.

6. Electrical cables or wires that are placed across roadways, doors or isles shall be secured to the floor and protected from damage.
7. Contractors shall use explosion-proof equipment (Class I, Division I) in areas containing combustible or flammable vapors, dusts or fibers. Cords, connectors, and equipment shall be inspected to verify that they are free of defects.

EMERGENCY EQUIPMENT

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

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. Exit doors shall not be blocked.

ENVIRONMENTAL PROTECTION

1. 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

- Educate our students in sustainable concepts so that they may apply them in their professions
- Support community-wide and regional sustainability efforts

2. Environmental Permits and Licenses

Contractors and other service providers may be asked to work with or on behalf of MIT Project Manager or Supervisors 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.

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).

3. 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 and request notification to the EHS Office Environmental Management Program (EMP). EMP will assess the situation and determine whether the spill requires notification by the responsible party to state and/or local agencies.

4. Hazardous Waste Management

Contractors are fully responsible for all hazardous wastes that they generate while at MIT. Hazardous waste may be generated from facilities operation and maintenance, construction and renovation activities and a variety of other activities at MIT.

Common hazardous wastes generated at the 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.

MIT EHS is available to assist Contractors with hazardous waste management procedures including disposal, although these activities remain the responsibility of the Contractor.

5. Recycling

MIT encourages Contractors to recycle as much as possible, consistent with good practices and economic realities. 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, stud trim 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 the following waste streams from in-state incineration or landfill disposal. These items may not be included in waste destined for incineration or landfills except in *de minimus* quantities:

- 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

EXCAVATION AND TRENCHING

1. 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.
2. The contractor shall mark locations of underground utilities before digging and contact DIGSAFE (1-888-DIGSAFE) as required by law. This 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.
3. The contractor shall comply with the OSHA Excavation Standards and other regulatory requirements associated with the work.
4. The contractor will place warning signage and barriers on all sides of a trench or excavation to prevent pedestrians from crossing the opening.
5. The contractor will provide a “competent person” as required by OSHA Excavation Standards to inspect the excavation area and protective systems.

6. 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.

EYEWASHES AND SAFETY SHOWERS

1. Chemical splashes in the eye can cause blindness. Thus, 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 shall be provided and utilized by the contractor.
2. If no water is available in the work area, contact the MIT Project Manager or Supervisor.

FIRE PROTECTION IMPAIRMENTS

1. Contractors shall take precautions to prevent damage to fire protection systems. Report damage immediately to the MIT Project Manager or Supervisor.
3. Except in emergency conditions, contractors may not operate any fire protection valve without prior approval of the MIT Project Manager or Supervisor.
3. Contractors who need to disable a fire protection system shall 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 twenty-four (24) hours in advance to obtain for an approval to shutdown. This applies to sprinklers, fire mains, fire pumps, and fire alarm system components.
4. During fire protection equipment impairments, all operations that present a fire hazard will be suspended. These 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.
5. Contractors shall not suspend materials or equipment on sprinkler pipes, valves or supports.

FIRE SAFETY

1. MIT prohibits smoking in its facilities. Violators may be asked to leave the premises on first offense.
2. 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.

3. All fires shall 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.
4. Contractors shall be trained in the proper use of portable fire extinguishers if conducting fire watch duties. Contractor-supplied fire extinguishers shall be clearly marked and have current inspection. Contractors shall provide their own portable fire extinguishers for any hot work unless other arrangements have been made with the MIT Project Manager or Supervisor.
6. 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.
7. Contractors shall obtain proper authorization from the MIT Project Manager or Supervisor 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.
8. 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.

FIRST AID AND MEDICAL SERVICES

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. The contractor is responsible for recording injuries and illnesses as required by OSHA.

HOT WORK

MIT utilizes and enforces the use of a Hot Work permit system to help minimize the risk associated with HOT WORK. We encourage contractors to provide suggestions/alternative methods on ways to avoid Hot Work. For instance, can bolted flanges be used? Can the welding be conducted be done outside?

If Hot Work shall 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 also includes evaluating other work in the vicinity that has the potential to create a hazard. The Contractor shall meet or exceed all regulations and industry standards when conducting Hot Work.

1. 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 CFD.

2. The MIT Project Manager or Supervisor or designee will serve as the Hot Work Authorizer. The Hot Work Permit should be valid for only one job on one shift, unless other arrangements have been agreed upon.
4. Fire protection equipment and protective materials (fire blankets, portable exhaust ventilation etc.) shall be at the Hot Work site before the work begins.
5. A designated fire watch may be required during Hot Work. The contractor may provide trained personnel for this duty or may be required to hire a 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.
5. The Contractor will verify Hot Work equipment is in proper working order and in a fire safe condition. As the Hot Work Authorizer, the MIT Project Manager or Supervisor or designee may choose to inspect the Contractor's equipment before issuing the permit and may request the removal of unsafe equipment from the site.
6. Contractors shall use non-combustible or flameproof shields to protect nearby personnel from direct rays of welding arcs (asbestos blankets are prohibited).

HOUSEKEEPING/MAINTENANCE OF SITE

1. Temporary cords or hoses shall be supported at least six feet above the floor when routed across aisles. If this is not possible, cords and hoses shall be secured to the floor by some other temporary means such as duct tape, matting, etc., to eliminate trip hazards. The area shall be properly marked with appropriate warning signs or traffic cones to alert pedestrian traffic.
2. 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.
3. Contractors will place equipment and materials so as not to block exits, aisles, doors, stairs, ladder ways, emergency equipment or electrical panels.
4. Workers will remove nails and other sharp objects protruding from surfaces and will sweep up loose nails and screws.
5. Contractors may not store tools and equipment above work areas. Workers shall not leave materials in plenum spaces such as air handling rooms.
6. MIT supports recycling. Contractors are encouraged to recycle discarded materials such as wood, cardboard, steel, copper, wire, etc. Contact the project manager for proper disposition of these recyclable materials. See the **Environmental Protection** section of this document.
7. 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.

INCIDENT REPORTING

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

Unsafe acts or behavior - Report unsafe behaviors 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, contractors shall report details of all such incidents to the MIT Project Manager or Supervisor and/or MIT EHS. 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 or Supervisor and the MIT EHS Office within 48 hours of the incident.

Emergencies - Contractors should be familiar with emergency reporting guidelines. When reporting emergencies by telephone, include the building and the exact location, room number, the type of emergency and a 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 work with the MIT Project Manager or Supervisor to ensure a system is in place for safeguarding employee safety during a campus emergency that requires either evacuation or shelter-in-place.

Security Issues - Notify any MIT Police Officer or call the Facilities Operations Center to report any issue causing security concern. This can include theft, threats or acts of violence, malfunctioning or disabled security devices and violations of security policies or procedures.

INDUSTRIAL POWERED VEHICLES

1. Industrial powered vehicles (more commonly known as Powered Industrial Vehicles or PIV's) 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 their employees or subcontractors have had appropriate and effective training for the operation of PIV's 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 unless they are contractually indemnified to do so or have signed a separate indemnification authorizing them to do so.
2. Workers operating PIV's 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 shall be removed from service until repairs are completed.
3. Diesel, gasoline or propane powered PIV's may only be used in MIT facilities when the Contractor implements approved controls such as barriers, ventilation, and/or off-hour

scheduling that can ensure the safety and comfort of the MIT personnel. Additionally, prior notification shall be provided to local managers of areas that will be affected prior to operating fuel powered PIV's indoors.

4. 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. Workers shall not refuel vehicles while the engine is running.

LADDERS

1. Ladders are intended for access to heights only. With the exception of properly deployed stepladders, MIT does not consider ladders to be 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.
2. 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.
3. Workers shall not place ladders in door swing areas unless the door is locked or otherwise blocked from striking the ladder.
4. Workers may not use portable metal ladders where they may contact electrical conductors.
5. When used against beams, pipes, or similar supports, workers shall secure ladders to prevent shifting, slipping, or being knocked over.
6. 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.
7. Workers shall not separate the sections of extension ladders.
8. Workers shall not stand on furniture to reach work. A stepladder or other appropriate platform shall be used.

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 for workers and registrations throughout the project.

LOADING DOCKS/RECEIPT OF MATERIAL

1. Contractors may utilize MIT docks for loading or unloading material and equipment. Due to the high volume of MIT shipping and receiving traffic, contractors shall make

prior arrangements through the MIT Project Manager or Supervisor. Contractors shall make every effort to unload promptly and move to a designated parking space.

2. Deliveries directed to MIT's docks should identify whom to contact on arrival. Generally, MIT cannot receive material not ordered on MIT purchase orders. In the event these materials are inadvertently received, MIT assumes no responsibility for their disposition.

Workers shall follow loading dock safety procedures. This includes, but is not limited to, ensuring dock locks and chocks are utilized during loading and unloading.

LOCKOUT/TAGOUT (HAZARDOUS ENERGY CONTROL)

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.

LOITERING AND SOLICITATION

Workers are expected to leave the site immediately upon completion of their job/project. Advertising or solicitation of any type on MIT premises requires approval from MIT.

MANUAL LIFTING/MATERIAL HANDLING

Workers required to lift as a routine part of their job, shall have been trained in effective and proper lifting techniques. Wherever possible, workers shall use lifting aids such as carts, pallet jacks and hoists. Workers shall not overload carts to the point where the load is unstable or unsafe during movement. See the **Cranes and Hoists** and **Industrial Powdered Vehicles** section of this document.)

MOBILE EQUIPMENT/WORK PLATFORMS

1. Unless permitted by the MIT Project Manager or Supervisor, and supported by appropriate indemnification in the contract language, contractors may not use MIT-owned aerial work platforms.
2. 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.
3. Contractors shall conduct a documented inspection of equipment prior to each day's use to assure it is in safe operating condition. Workers shall replace or repair defective equipment before bringing it on site.

4. For outdoor projects, workers may not operate cranes, aerial platforms, power shovels, or similar equipment within fifty (50) feet of overhead utilities without prior approval from MIT Project Manager or Supervisor.

NON-DISCLOSURE AGREEMENTS

Each contractor shall sign a MIT Hold-harmless and non-disclosure agreement prior to working in a MIT facility. Contractors return completed forms to the MIT Project Manager or Supervisor or Purchasing for processing.

POWDER-ACTUATED TOOLS

1. Prior to using powder-actuated tools, authorization and approval are required by the MIT Project Manager or Supervisor. Contractors shall ensure powder-actuated tools are used only by trained and, if required, licensed personnel. Powder-actuated tools are not left unattended or available to unauthorized persons. These tools may not be used in explosive or flammable atmospheres.
2. 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.

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.

PROTECTIVE EQUIPMENT AND CLOTHING

1. The contractor shall provide workers with personal protective equipment (PPE) such as safety glasses, respirators, hard hats, gloves, and safety shoes when performing certain activities or when working in designated areas. The contractor shall ensure PPE is available and used appropriately. The MIT Project Manager or Supervisor will stop work at if appropriate PPE is not in place.
2. Contractors are responsible for assessing hazards and associated risks, for selecting and providing PPE, and for providing adequate training to personnel on inspection and use. It is MIT's expectations that PPE shall be properly maintained, appropriate for the task, and shall comply with applicable regulations.
3. The following are examples of hazards that may require PPE:

- Contractors shall assure workers use appropriate eye/face protection when drilling, chipping, pouring concrete, using pneumatic tools, welding, working with chemicals, when performing any activity where a potential for eye or face injury exists or when working in designated eye protection areas.
- Contractors shall assure workers use appropriate foot protection for jobs presenting crush or puncture injuries such as when handling heavy objects and during most construction work. Foot protection may also be necessary when tasks expose workers to chemicals, slips or energized electrical circuits.
- Contractors shall assure workers use appropriate head protection whenever work is performed overhead such as crane operations, excavations, and scaffold erection or when there is a risk of head contact with exposed electrical conductors.
- Contractors shall assure workers use appropriate hearing protection in areas where the noise level exceeds OSHA guidelines.
- Contractors shall assure workers use appropriate respiratory protection as necessary for such jobs as cutting and sanding dry wall and spray painting. Personnel shall be properly trained, fit tested and physically capable to wear respiratory protection as defined by OSHA.
- Contractors shall wear sturdy work boots or shoes at all times.
- Contractors working near roads, i.e. during striping, excavation, or landscaping shall wear orange safety vests or similar garments to improve their visibility to vehicle traffic.

SAFETY REPRESENTATIVE

The Contractor may be asked to assign a representative to monitor compliance with EHS requirements. The contractor shall provide 24-hour, emergency contact numbers or list to the MIT Project Manager or Supervisor. The Contractor's Safety Representative may be an individual located off campus. However, for large projects or special hazards, MIT may require the contractor to provide a dedicated Safety Representative such as an OSHA-required "competent person." The MIT Project Manager or Supervisor and MIT EHS will determine the need for an on-site Safety Representative.

SCAFFOLDS

1. 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.
2. 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.
3. 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.

4. 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.
- 5 Scaffold erectors or dismantlers shall tag any incomplete scaffold assembly as “Incomplete - Do Not Use” or other similar form of posted warning.

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 evaluation of security and environmental issues including secondary containment requirements, storm water runoff concerns, etc. The MIT Project Manager or Supervisor may designate a storage area for industrial and construction materials or project-specific storage limitations. Mechanical and electrical equipment rooms may not be used for storage.

TOOLS AND EQUIPMENT

1. In general, Contractors shall provide their 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.
2. Contractors shall inspect and maintain tools in safe condition using them only for jobs in which they are intended.
4. Contractors shall use non-sparking tools in areas where flammable liquids are stored or dispensed.
5. 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.
6. When using pneumatic tools, the contractor shall disconnect hoses from air supply when not in use.

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. Vehicles parked in fire lanes, reserved areas or roadways are subject to towing. Workers may not park on sidewalks or landscaped areas unless permitted by the MIT Project Manger. MIT is not responsible for contractor vehicles or their contents.

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 or Supervisor of MIT EHS for additional guidance.

UTILITY VEHICLES

1. 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 unless they are contractually indemnified to do so or have signed a separate indemnification authorizing them to do so.
2. 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.
3. 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 is operated outdoors at night.
4. 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 vehicles while the engine is running.
5. Contractors shall operate utility vehicles in designated aisles, areas or paths. When vehicles shall be placed in roadways to perform work, the contractor shall provide warning signs or personnel to alert oncoming traffic. Diesel, gasoline or propane powered utility vehicles are 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, ventilation, and/or off-hour scheduling are implemented.

Contractors shall implement a documented preventative maintenance program for all Contractor owned vehicles. The maintenance program shall meet or exceed the manufacturer's specifications.

WORKING AT HEIGHTS

1. Contractors shall protect workers from falls when performing elevated work above 6 feet or within 10 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.
2. It is MIT expectation that Contractors employ at least one form of conventional fall protection such as railings, nets, guarded work platforms, or personal fall arrest systems.
3. Workers shall wear personal fall arrest equipment as required when working from aerial work platforms, such as scissors-type lifts; 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.
4. 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.
5. 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.
6. 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 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.
7. 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.

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 MIT Project Manager or Supervisor.

NOTES

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: _____

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 supply _____ copies of this booklet for our employees and sub-contractors.

PLEASE COMPLETE AND RETURN/FAX TO:

MIT

Location: _____
