ESSENTIAL INFORMATION ON OCCUPATIONAL SAFETY AT DARTMOUTH COLLEGE

Emergencies
Always call from a safe location
Fire or Medical 911
Safety & Security 646-2234
EHS 646-1762
Driving a College vehicle requires adherence to the Dartmouth College Driver Safety Policy.

- Seat belts must be worn at all times where vehicle is equipped.
- No riding in the back of pickup trucks.
- Vehicles must be off when unattended.
- No Idling.
- Do not drive recklessly or with excessive speed.
- Observe posted speed limits around campus.
- Always look in the direction the vehicle is traveling. When backing - continue to look behind you while the vehicle is moving.
- Transporting high pressure cylinders requires properly securing the cylinders. Cylinders must be properly labeled.

- Secure loads in truck beds.
- Do not block fire lanes or roads.

Absolutely No texting, e-mailing, cell phones, or the use of earpieces for electronic devices (radio).

Driving privileges for operating College vehicles (owned, leased, rented or personally owned being used for College related business) may be revoked because of accident or violation experience, falsification of records, or any repeated failure to comply with these regulations.
Tips to Combat Aggressive Driving
AAA Foundation for Traffic Safety

- Be courteous and patient behind the wheel.
- Use signals with plenty of warning.
- Obey the speed limit.
- Do not tailgate and use the left lane only when passing.
- Use the horn only as a safety device.

- Identify alternative routes. Avoid routes under construction.
- Avoid dangerous interactions and confrontations.
- Avoid eye contact with “aggresive drivers”.
- Do not take actions of aggressive drivers personally.
- Just be late.
- Get out of the way and let an aggressive driver pass.
HazCom 29 CFR 1910.1200

- Did you read the label?
- How are you going to use the product?
- Could others be exposed or bothered by its use?
- Is there adequate ventilation?
- Is personal protective equipment (PPE) needed?
- Who do you call if there is a problem?
- How do you store and dispose of the chemical?

Material Safety Data Sheets

- MSDS’s must be available to employees who work with (or may be exposed to) potentially hazardous chemicals.
- MSDS’s must be kept in a labeled binder at the work-site or in a centrally accessible location.
- Supervisors must ensure that they have a current MSDS collection.
- Employees must know where this information can be found.
Training

- Training can be provided by a supervisor or by completing the EHS on-line module. (www.dartmouth.edu/~ehs/training.html)

Training by supervisor must include:

- Review the hazards of the chemical(s) used.
- Determine what protective equipment is needed.
- Ensure proper use and disposal.
- Maintain records that training was provided.

When using a container that the product did not come in you must label the container with the following information:

- Product Name
- Warnings (if needed)
- Date Made
- Your initials

Questions? Call EHS
Identify all potential tripping and fall hazards before work starts.

**Fall Protection**  OSHA 29 CFR 1910.25 and .26

When working at heights of 4'-6' or more above a lower level, fall protection is required. Fall protection may include:

- Guardrails
- Personal fall arrest systems
- Positioning device systems
- Safety monitoring systems
- Safety net systems
- Warning line systems
- Covers

Prior to working at heights, employees must have a plan of rescue.

Employees exposed to fall hazards will be included in EHS organized training programs.

**Ladders**  OSHA 29 CFR 1910.25 - .27

- Inspect prior to use and when suspected of sustaining damage.
  If found to be damaged remove ladder from service. Inform your supervisor.
- Set firmly on ground or floor surface.
- Set base 1’ out for every 4’ of rise.
- The top of the ladder must be positioned with both rails supported.
• Use non-conductive ladders for all electrical work.
• Observe weight limits posted on ladders.
• Face the ladder when ascending or descending.
• Step ladders must be used on even surfaces, fully opened & locked.
• When accessing a roof the ladder shall extend 3’ above the point of contact with the building.
• Follow all manufacturer recommendations.

**Review the Facilities SOP for ladders.**

**Scaffolding 1926.450-.454**

When scaffolding is being used a **competent person** must be present at all times. The competent person is anyone who has attended an EHS approved scaffold user’s course as well as additional training if scaffold is more than 4 times higher than the **minimum** base dimension. Fall protection for workers above 10’ is required and will be determined by the competent person as well as the feasibility of fall protection for erectors and dismantlers.

1. **Competent person** must inspect and oversee the set up of the scaffolding.
2. **Employees** must have completed EHS approved training.
3. **Supervisors** must ensure employees working on scaffold have been trained.

• Review the SOP on scaffolding.
• Inspection checklists are available through EHS.
Confined Spaces

A Confined Space (CS) is any location that is not intended for occupancy and has restricted means of entry/exit such as manholes, electrical, steam and telephone vaults. Only trained employees are authorized to enter and work in a CS. 29 CFR 1910.146

Entering a confined space requires:
- 2 people minimum
- An operable 2-way radio
- An air monitor
- A ventilator
- A permit if entering a permit required CS
- Harnesses and tripod
- Barricades-guard opening to protect entrance and others in area.
- Access/egress must remain available at all times.
- Return the completed permit by the end of the shift.
  - FO&M to the Tool Crib
  - Others to the CS operations personnel

Procedure:
- Test the air in the space. Test low, center and high spots.
- Ventilate the CS with a blower for at least ten minutes.
- Retest the air and continuously monitor the space throughout the entry.
- Complete the permit and display at the CS entry site.
- Visually inspect the CS for hazards prior to entry.
- Don full body harness.
- If conditions are acceptable, entry may proceed.
- Attendant must remain outside the space, with radio and in contact with the entrant(s) at all times.
- Work taking more than five minutes or when the location is hot or uncomfortable, continuously ventilate and monitor the air when welding or painting in the CS.
- Do not place ventilation intakes near auto exhausts or otherwise contaminated air sources.
Permit Required Confined Spaces:

Any space that has one or more of the following:

- The potential to contain a hazardous atmosphere.
- A material that has the potential for engulfing an entrant.
- An internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Any other recognized serious safety or health hazard.

**Circumstances:**

- Drink plenty of fluids and leave the location for brief periods when conditions are hot or demanding.
- At the first sign of any danger the entrant must self rescue while still possible.
- In the event of an emergency, the attendant summons help immediately via radio, stating that this is an emergency and that a 911 call must be placed to summon help. The attendant never puts him/herself in danger by entering a potentially hazardous environment in an attempt to rescue; nor shall they leave the space unattended while someone is in the CS.
Blood and body-fluid spill
Clean-up Procedures

Blood and blood-contaminated material may contain viruses, bacteria, and parasites that can cause harm to exposed individuals. In order to reduce exposure to these bloodborne pathogens, all custodial/housekeeping staff must use the following procedures when cleaning up blood.

**Step 1. Prepare**

- Select and don the appropriate personnel protective equipment (PPE). Always check PPE for tears or damage before wearing. Select the following PPE based on the situation.
  
  **Gloves:** Mandatory for all blood clean-up.
  
  **Face Mask/Eye protection:** Use if clean-up of blood is above chest level or when splashing may occur.
  
  **Disposable Coveralls or Lab coat:** Use when splashing may occur.
  
- Set up Wet Floor signs

- Mix a fresh solution of disinfectant (1 in 10 dilution of household bleach works well)

**Step 2. Remove sharp objects (do not use hands)** If any sharp objects or broken glass is contaminated with blood, remove objects with **tongs** or **dust pan** and place in a ridged sealable container, place container in a restricted access area, and call EHS (646-1762) for pick-up.

**Step 3. Absorb/Disinfect**

Place paper towels or other absorbent pad on blood. Carefully pour or spray a freshly prepared 1 in 10 dilution of household bleach around the edges of the spill working to the center. Pouring from the outside prevents further spreading of contamination. Note: Some spill kits use an absorbent disinfecting powder instead of a liquid disinfectant.

**Step 4. Allow sufficient contact time**

No disinfectant works immediately. Allow at least ten minutes of contact time (20 minutes is best).
Step 5. Remove absorbent
Wearing gloves, place absorbed and disinfected materials in a garbage bag. Be alert for potential sharp objects. Wipe up and collect the spill by working from the edges to the center.

Step 6. Rinse the area
Clean the spill area again by wiping down with fresh disinfectant using either: paper towel, disposable mop/sponge, reusable mop, or extraction device (if carpet or furniture is involved). Allow the surface to remain wet and air dry.

Step 7. Decontaminate any reusable equipment
Reusable equipment can be decontaminated by placing items in a bucket of disinfectant solution and allowing them to soak. Dump waste water down a sanitary drain.

Step 8. Remove PPE
Remove PPE with caution, making sure gloves are removed last. Dispose of into a garbage bag and double bag all waste.

Step 9. Wash hands thoroughly.

Clean up kits are located in custodial storage rooms. See shift supervisor or squad leader for replacements. Follow instructions in the kit.

In the event of an unusual or particularly large spill, contact EHS at 646-1762.
Safe Lifting

• Before lifting, always test the load for stability and weight
• For loads that are unstable and/or heavy:
  - Reduce the weight of the load
  - Repack containers to increase stability
  - Ask for assistance
  - Use equipment
• Plan the lift:
  - Wear appropriate shoes to avoid slips, trips, or falls
  - If you wear gloves, choose the size that fits properly
  - Lift only as much as you can safely handle by yourself
  - Keep the lifts in your power zone (i.e., above the knees, below the shoulders, and close to the body), if possible
  - Use extra caution when lifting loads that may be unstable
• When lifting:
  - Get a secure grip
  - Use both hands whenever possible
  - Avoid jerking by using smooth, even motions
  - Keep the load as close to the body as possible
  - To the extent feasible use your legs to push up and lift the load, not the upper body or back.
  - Do not twist your body. Step to one side or the other to turn
  - Alternate heavy lifting or forceful exertion tasks with less physically demanding tasks
  - Take rest breaks

Carrying containers
• Plan the work to eliminate unnecessary carrying.
• Slide, push, or roll instead of carrying, when appropriate
• When there is a choice, push instead of pull.
• Organize the work so that the physical demands and work pace increase gradually
Reduce the distances that loads are moved to a minimum. If long trips are required, use equipment. For loads that are unstable and/or heavy:
- Test the load for stability and weight before carrying the load.
- Use mechanical devices or equipment to carry or move the load.

• Reduce the weight of the load by:
  - Putting fewer things in the container.
  - Using smaller and/or lighter weight containers.
  - Dividing the load between two containers and carrying one in each hand.
  - Repack the containers so contents will not shift and the weight is balanced.
  - Use team carrying as a temporary measure for heavy or bulky objects.

• Try to avoid slopes, stairs, or other obstacles that make carrying materials more difficult.
• Reduce the frequency and amount of time spent carrying materials.
• Alternate carrying tasks with non-carrying tasks.

**DO:**
- Tuck in the chin to keep the back as straight as possible while lifting.
- Lift with the strong leg muscles.
- Ask for help with the heavy, awkward items.
- When possible, use mechanical equipment to move heavy items.

**DON’T:**
- Use your back muscles to do lifting.
- Try to lift an item that is too heavy or awkward.
- Twist your body while carrying an object.
- Attempt team lifting without proper coordination.
Forklifts (Powered Industrial Equipment)

Only authorized employees may operate forklifts.
29 CFR 1910.118

To be an authorized operator:
• Attend an EHS approved training course (contact EHS for details).
• Following the initial training, a road test is required initially and every 3-years (on campus) to show proficiency.

Responsibilities

Department Supervisor
• Never assign an employee to operate powered industrial equipment until you have written documentation that that employee has completed an EHS approved training program.
• Make certain all maintenance records and daily inspection forms are being kept. Keep all records for 3 years.
• Make certain that necessary preventive maintenance is being done and needed repairs are tended to promptly.
• Take corrective action when unsafe operations occur.

Equipment operator
• Inspect equipment daily.
• Record inspection in log.
• Report any problems with the equipment to your supervisor immediately.
• Do not operate faulty equipment.
• Operate the equipment in a safe and responsible manner.

EHS periodically checks equipment and audits records for inspections, maintenance and training.
**Personal Lifts**

- Determine that the Genie Lift is the best tool for the job.
- Lift users must have completed an EHS approved training program.
- Employees must inspect the lift prior to use and report any malfunction or damage. Remove the lift from service until repairs are complete.
- Follow ALL operating instructions provided with the lift.
- A person on the ground to act as spotter is required.
- The spotter must watch the bubble level, the person in the lift for signs of heat stress, fatigue or dizziness, and for pedestrian or motor traffic in the area of the lift.
- Review the SOP on Genie Lifts.

**Scissor Lifts, Aerial Lifts & Cherry Picker**

OSHA 29 CFR 1910.67 and .68

- Ensure that the lift is appropriate for the task.
- Operators must be trained as a “competent” person by attending an EHS approved training program.
- A competent person is someone who has been trained and is familiar with all procedures required for the safe use of the scissor lift and must manage the activities involving the lift while the lift is in use.
- Operating the Cherry Picker requires that the driver have a valid commercial driver’s license (CDL).

- The operators manual must be located on the lift and all manufacturer recommendations must be followed.
- Lift use outdoors is prohibited if there are winds or lightning.
- Operators must report any malfunction, defects or damage to the labor shop supervisor and the lift must be taken out of service until repairs are complete.
- A minimum of 10’ must be maintained between the lift basket and any electrical lines or power conductors.
- A person on the ground to act as spotter is required.
- The spotter must watch for pedestrian or motor traffic in the area of the lift and to alert pedestrians of overhead hazards.

- Barricades should be used to prevent pedestrians from walking below the work area.
- Review the SOP on Scissor Lifts.
- Review the SOP on Aerial Lifts.
**Fire Safety 29 CFR 1910.38-39**

**If you see smoke or flames...**

**Use C.A.R.E.**

- **Contain** the fire by closing all doors.
- **Activate** a fire alarm. Fire alarm stations are located near all exits out of the building.
- **Report** the fire by dialing 911.
- **Evacuate** or extinguish. In most cases, it is best to leave the building using the nearest fire exit.

**Only use a fire extinguisher when ...**

- You are trained and capable.
- There is limited smoke or flames.
- You have the proper extinguisher for the type of fire you are fighting.
- You have your back to an unobstructed exit.
- Everyone has safely left the area.

**Never fight a fire if ...**

- It has left its source of origin.
- You are unsure of the type of extinguisher available.
- You lack a safe exit should your efforts fail.
- If you cannot extinguish the fire in less than 30 seconds, then immediately abandon your efforts, close the door(s), activate the alarm, report the fire and evacuate immediately.

**EVACUATION**

Evacuation procedures are universal for any building you occupy. Leave the building immediately when you hear the alarm and move a safe distance away leaving room for emergency personnel and equipment.

**FIRE PREVENTION**

The best defense against fire is vigilance and prevention. There are a number of things you can do to prevent fires.

- Do not use space heaters.
- Smoke only in designated areas outside and well away from the building. Properly extinguish all smoking materials.
- Limit the use of extension cords and power strips.
- Shut off electrical equipment at the end of the day and when not in use.
- Check for frayed wires and missing grounding plugs on all equipment.
- Label and date damaged equipment “Out of Service”. Use heavy duty tape to cover electrical plugs in order to prevent further use by others.
- Plug large equipment such as refrigerators, microwave ovens and stationary machinery directly into a wall outlet. Never use extension cords or power strips for high current devices.
- Store flammable liquids in an approved flammable storage cabinet (UL® or FM® listed).
- Store all combustible material(s) such as paper or plastic at least one meter away from a heat or ignition source.
Note to Supervisors: Each office, shop or work group must develop an evacuation plan. (Those persons working out of a field office location must follow the evacuation plan of the building they occupy) An effective plan includes primary and a secondary evacuation routes with a designated meeting area outside the building. Please make sure everyone knows the gathering spot and discuss it periodically during staff meetings. This location must be far enough away from the building to ensure personal safety and avoid blocking building access by emergency personnel. Your evacuation plan must also include a way to account for everyone when leaving the building. This must also include pre-planning for individuals needing assistance out of the building.

**EMERGENCY AND EVACUATION REMINDERS**

- Do not “investigate” the source of a potential fire or hazardous material emergency by opening doors or lingering. If you suspect an emergency, report it! In any emergency, reporting is the first essential step to protecting yourself and others.
- As you leave, close all doors behind you to limit the movement of smoke, flames or noxious odors.
- Walk to the nearest safe exit out of the building.
- Do not use an elevator to exit a building during a fire alarm.
- Gather at your designated area. Do not block entrances.
- Supervisors should account for all staff members.
- Do not re-enter the building for any reason once you have left. (Emergency personnel will let you know when it is safe to re-enter.)
- Ensure at least two directions of travel out of any point in the office/shop—especially around dangerous equipment.

**WORK SITE FIRE SAFETY REMINDERS**

- Do not block exits or fire extinguishers.
- Do not obstruct sprinkler heads or fire detection devices.
  - Maintain a minimum clearance distance—one (1) meter-around fire extinguishers, overhead fire sprinklers and smoke/heat detectors.
- Reactivate disabled fire alarms prior to leaving the job site.
- Do not block fire lanes or roads with equipment or vehicles.

**FIRE EXTINGUISHER TRAINING**

Fire extinguisher training covers fire safety basics along with an emphasis on the types of fire extinguishers and their proper use. This training involves the “hands on” use of extinguishers with a controlled fire. To schedule fire extinguisher training for your group contact EHS at 646-1762.

**HOT WORK REQUIREMENTS**

- Inspect Hot Work Equipment –document inspections
- Fire Extinguishers must be accessible
- Fire Extinguishers must be inspected and charged
- Eyewash must be accessible
- Flammable liquids & combustible materials must be kept 30’ away
- Floor must be clean
- Welding screens must be in place
- Cylinders must be kept upright, secured & capped
- Snorkel ventilation must be positioned and on while welding
- Monitor space for 1 hour after work is complete
- Hot Work Permits are required when working outside a designated welding area
- Certain metals require added Personal Protective Equipment or procedures above and beyond ventilation. (chrome, stainless, galvanized metal)
Trenching and excavation work presents serious hazards to all workers involved. Cave-ins pose the greatest risk and are much more likely than other excavation-related accidents to result in worker fatalities. Soil analysis is important in order to determine appropriate sloping, benching, and shoring. Other potential hazards include falls, falling loads, hazardous atmospheres, incidents involving mobile equipment, manual handling of materials, working in proximity to traffic, electrical hazards from overhead and underground power-lines, and underground utilities such as natural gas.

Protective Systems for Trenches

- **Sloping** protects workers by cutting back the trench wall at an angle inclined away from the excavation.

Maximum allowable slopes for excavations less than 20 ft (6.09 m) based on soil type and angle to the horizontal are as follows:

<table>
<thead>
<tr>
<th>Soil type</th>
<th>Height/Depth ratio</th>
<th>Slope angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable Rock</td>
<td>Vertical</td>
<td>90°</td>
</tr>
<tr>
<td>Type A</td>
<td>¾:1</td>
<td>53°</td>
</tr>
<tr>
<td>Type B</td>
<td>1:1</td>
<td>45°</td>
</tr>
<tr>
<td>Type C</td>
<td>1½:1</td>
<td>34°</td>
</tr>
<tr>
<td>Type A</td>
<td>½:1</td>
<td>63°</td>
</tr>
</tbody>
</table>

(For a maximum excavation depth of 12 ft)

- **Shoring** protects workers by installing aluminum, hydraulic or other types of supports to prevent soil movement.

- **Shielding** protects workers by using trench boxes or other types of supports to prevent soil cave-ins.

Do not enter an unprotected trench!

- Trenches 4 feet deep or greater require a means of egress such as a ladder. Ladders must extend out of the trench a minimum of 3 feet.

- Trenches less than 5 feet deep must be evaluated by a competent person to determine if there is a potential for a cave-in. If none exists, no system is required.

- Trenches 5 feet deep or greater require a protective system such as: sloping, benching, shoring, or shielding.

- Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer.
• **Benching** protects employees from cave-ins by digging out the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

- Soils classification
- The use of protective systems
- The requirements of the standard

Must be capable of identifying hazards, and authorized to immediately eliminate hazards.

Must inspect the trench:
- Before every shift
- If air contaminants could be present.

If the excavation is 4’ or deeper and the potential for a hazardous atmosphere or oxygen deficiency exists then testing is required for: oxygen deficiency, combustible gas concentration, or other hazardous substances. This could occur when the trench is in a sewer, near a dump or near stored chemicals.

- After anything that can increase hazards, such as:
  - Every rainstorm
  - Vibration (such as, from nearby heavy equipment or a passing train)
  - The trench wall moves, causing cracking, scaling, or bulging
  - A heavy load near the trench moves or gets heavier.

- To ensure heavy equipment and excavation spoils are at least two feet away from the trench edge.
- To ensure stairways, ladders, ramps or other safe means of access/egress are properly installed every 25 feet in all trenches 4 feet or deeper.

**If bad air is expected, OSHA requires there must be a rescue plan and rescue equipment on the job site.**
Lead Safety

LEAD

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. Lead-Based Paint is defined as paint with lead levels equal to or exceeding 1.0 milligram per square centimeter (1mg/cm\(^2\)) or 0.5 percent by weight. Waste materials containing lead must be tested to determine if special handling and disposal is required. In most cases, lead-based paint that is in good condition is not a hazard. However, problems can arise when doing renovations, demolition or restoration. Exposure occurs through inhalation (dust or fume) or ingestion.

Beginning April 2010, federal law will require contractors that disturb lead-based paint in homes, child care facilities and schools, built before 1978 to be certified and follow specific work practices to prevent lead contamination.

Activities involving lead based paint are regulated by OSHA for worker protection, EPA for protection of the environment and by Health and Human Services for the protection of families and children.

OSHA - 29 CFR 1910.1025
OSHA - 29 CFR 1926.62
EPA - 40 CFR part 745

Health & Human Services - protecting children Chapter He-P 1600 Lead Poisoning and Prevention Control Rule
In general industry, lead can be found in the following types of businesses:

- Radiator repair shops
- Indoor firing ranges
- Battery recycling
- Auto body shops
- Scrap metal handling
- Brass, copper or lead foundries
- Lead fishing weight production
- Ceramic shops where lead glaze is used
- Any industry where lead soldering is done

In construction, lead exposure can occur in the following jobs or tasks:

- Commercial building or residential paint removal
- Demolition of buildings
- Steel bridge maintenance and repair
- Maintenance or repair of painted steel structures
- Welding or sandblasting painted metal objects

Testing for lead
Some College buildings have been tested for lead. If constructed prior to 1981 surfaces must be tested for lead or assumed to contain lead. Before starting a project, check to see if the affected paint has already been tested. Contact EHS for additional information on PPE requirements, air monitoring, and any negative exposure information that may be available or when the paint has not already been tested.

Small Scale Demolition or Renovation requires work practices identified in SOP # 21A
Lead Paint Stabilization for residences must use work practices spelled out in SOP #21

Key requirements:
Dust suppression, Ventilation, Personal Hygiene.

Health Considerations
- Childhood lead poisoning remains a major environmental health problem in the United States. The risk comes when lead dust or chips are ingested or inhaled.

- Lead is more dangerous to young children. Their growing bodies absorb more lead and their brains and nervous systems are more sensitive to the damaging effects of lead.

- Adults can suffer from reproductive problems (in both men and women), high blood pressure and hypertension, nerve disorders, memory and concentration problems, and muscle and joint pain.

- Anyone who suspects an exposure to lead can have a blood lead level done by their physician.

- Exposures from work related activities must be documented by filing an accident report and an exam will be scheduled through Occupational Medicine.

- HEPA vacuums, HEPA respirators, and HEPA filters substantially reduce exposure to lead dust.

Blood Lead levels:
Taken by drawing blood and not a finger stick test which can be unreliable. Units are measured in micrograms per deciliter (ug/dl) and reflect the 1995 standards from the Centers for Disease Control:

Children: 10 ug/dl; level of concern; find source of lead 15 ug/dl and above; intervention, counseling, medical monitoring
20 ug/dl and above; medical treatment

Adults: 25 ug/dl; level of concern; find source of lead
50 ug/dl; OSHA standard for medical removal from the worksite
When asbestos-containing materials are damaged or disturbed by repair, remodeling or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems.

Asbestos is regulated by the Environmental Protection Agency (EPA), the Occupational Safety & Health Administration (OSHA) and the State of New Hampshire Department of Environmental Services.

Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant. Because of its fiber strength and heat resistant properties, asbestos has been used for a wide range of manufactured goods, mostly in building materials (roofing shingles, ceiling and floor tiles, paper products, and asbestos cement products), friction products (automobile clutch, brake, and transmission parts), heat-resistant fabrics, packaging, gaskets, and coatings.

Intact asbestos containing materials do not put building occupants or maintenance staff at risk. Asbestos containing materials impacted by renovation or demolition activities will be removed by a licensed abatement contractor. Asbestos abatement will be coordinated through EHS. Only licensed contractors, following approved methods will be used.

Surveys of many buildings are available on the EHS web site or in binders located in the FO&M and EHS Office.

Identifying asbestos materials:
Know whether or not your work will impact asbestos containing materials by:

- Checking the building survey
- Checking with a supervisor
- Asking EHS

Training:

- All building trade employees and custodians must complete annual 2 hour asbestos awareness training.
- Employees removing floor tile or vinyl sheet flooring require 8 hours of training.
- Removal of other forms of asbestos requires 16 – 40 hours of training.

Reporting a disturbance:

-If potentially asbestos containing material (PACM) is damaged or becomes friable during a work procedure:
  - Stop work immediately and evacuate the area.
  - Do not attempt to clean up, or work around the damaged material.
  - Warn other people in the area to stay away from the debris.
  - Close and lock doors or otherwise block access to the area and post warning signs.
  - Contact the office of Environmental Health & Safety for testing and further action.

-If you encounter already damaged materials that could contain asbestos:
  - Do not enter the area
  - Close and lock doors or otherwise block access to the area
  - Contact the Environmental Health & Safety Office
Project Managers

- Review asbestos survey information prior to the start of any project
- Review job site for asbestos materials prior to the start of work
- Contact EHS

ASBESTOS PROCEDURES

- An area that is scheduled for asbestos removal is “contained” by completely sealing it off from adjacent areas using multiple layers of plastic sheeting.
- HEPA (high efficient particulate air) filtered exhaust fans are installed to allow for maximum circulation and filtration of the air in the work area. These fans put the work area under negative pressure. Outside air is pulled from the entrance of the containment and exhausted to the outside of the building through a series of filters.
- Water is used in great quantities to help keep fibers from becoming airborne. Before the end of every work day all abated material is cleaned up and removed from the work area.
- Respiratory protection and protective clothing are required when entering the work area. Any person leaving the containment must go through the three stage decontamination process which includes removing protective clothing and a shower.
- Air monitoring and site inspections are done periodically to ensure regulations are being followed.
- When removal is complete, the area is given a visual inspection by an independent industrial hygienist. Once the area passes the visual inspection the air is tested for approx. 90 minutes. The air sample is analyzed to determine the total concentrations of fibers. In order to be declared clean the air test must meet or exceed state and federal requirements.
- Finally, the fans are turned off, all the plastic is torn down and the area is once again accessible.
- Asbestos containing waste is disposed of in Federal and State approved landfills. Dartmouth will receive a waste shipment manifest as proof of proper disposal by the contractor.

Note: Asbestos can still be found in new products today. Check labels and MSDS for information on product constituents.
Mold

Mold Resources and NY City Dept. of Health & Mental Hygiene, Guidelines on assessment and Remediation of Fungi in Indoor Environments, American Conference of Governmental Industrial Hygiensists and the American Industrial Hygiene Association.

Molds are fungi that are found everywhere – both indoors and outdoors all year round. There are many thousands of species of mold and most, if not all of the mold found indoors comes from outdoor sources. People with the greatest risk of health effects from mold are individuals with allergies, asthma, sinusitis, or other respiratory conditions, as well as infants and children, elderly people, and pregnant women. In addition, individuals with a weakened immune system are at risk.

Building materials that have been wet for more than 24 – 48 hours may have already begun to grow mold. Best work practices include:

- Controlling the spread of spores
  - Work area prep  
  - Dust suppression
  - Removal or cleaning of material
  - Waste handling techniques

- Personal protection
  - Personal hygiene  
  - Gloves  
  - Respirators

Typical bathroom mold and mildew can be addressed with standard housekeeping practices. Surface mold or mold on non porous items can be cleaned by using a mixture of detergent (or bleach) and water. 10 parts water to 1 part detergent.

Circumstances requiring EHS notification prior to clean up:

- When removal procedures are likely to generate a lot of dust.
- When simple washing or removing material is not adequate.
- When the water source contains sewage or other black water.
- When mold is in an air transference system.

Fur and Feathers

Recommendations are from the Center for Disease Control (CDC) and the National Institute for Occupational Safety & Health (NIOSH)

If bitten or scratched by a rodent, bird or bat, report the incident immediately to your supervisor.

Animals and birds can potentially spread diseases through feces and urine, nesting materials or their dead bodies. Protection for employees from these diseases is possible by wearing appropriate personal protective equipment and practicing good personal hygiene.

- Dead birds or animals must be handled wearing gloves or using tools.

  - Wear rubber or vinyl gloves when cleaning up dead rodents or nests. If possible use a shovel or similar tool to scoop up the dead animal or bird.
  - Place the dead rodent or nesting materials in a plastic bag and seal tightly.
  - Throw the bag into a covered trash can that is regularly emptied.
    - Follow guidelines in SOP #18 for bats and birds.
    - Follow guidelines in SOP #18A for rodents.

- Removing Waste – birds and bats

  - Interior accumulation up to what would fill one 30-gallon trash container can be cleaned up by in-house personnel.
  - Exterior accumulations will need to be addressed on a case by case basis {More frequent cleanups will decrease the accumulation per cleanup}.
  - Amounts less than 4 square feet can simply be scraped or washed off.

Bees

Contact your supervisor or work control prior to removing bee’s, hornets or wasp’s nests.
• Removing Waste – mice

- If waste is found in a closed up building, closet or other small space, ventilate the space by opening the doors and windows for at least 30 minutes to allow fresh air to enter the area before starting clean up. Use cross-ventilation and leave the area during the airing-out period. If materials are a week old or more then any infectious virus in the rodent’s urine/droppings or nesting material is no longer infectious.
- Respiratory protection is required if there is a heavy infestation.

  A heavy infestation is the presence of a large number of animals resulting in an amount of nesting and fecal material that would more than fill a conventional sandwich bag.

• Cleaning up after removal is complete

- When you begin cleaning, it is important that you do not stir up dust by sweeping or vacuuming up droppings, urine, or nesting materials.
- Mix a solution of 1-cup bleach to 10 cups water or use a household disinfectant that kills viruses. (mix daily as it weakens over time)
- Let soak for 5 minutes.
- Use paper towels, rags, sponges, and mops that have been wetted with the disinfectant solution to clean up debris.
- Remove gloves last and wash your hands with soap and water. If it’s a large project, shower with soap and hot water.

Employees who have a significant disorder of their immune system - such as HIV infection, receiving cancer chemotherapy or other impairment of their immune function should discuss these work duties with their physician.
**Definition:**

Many chemicals used in building maintenance activities can not be drain disposed or thrown in the trash – they must be collected as Hazardous Waste. This includes most oils, fuels, cleaning solvents, unused paints, adhesives even fluorescent light bulbs and batteries.

**Not sure how to dispose of something?**
Call EHS 646-1762

Broadly defined, hazardous wastes include any material that is:

- Flammable, Ignitable or Combustible - Flash Point < 140 Degrees F (60 Degrees C)
- Corrosive, Acidic, Basic/Caustic - pH < 2 or > 12.5 or materials damaging to skin/eyes/mucous membranes
- Reactive - oxidizers, air/water reactives or any material unstable under normal handling conditions
- Toxic - materials damaging to the structure or function of cells

Look for statements or labels on the container such as Warning, Caution, Poison or Danger. When in doubt collect the material and contact EHS. You can find physical properties for each chemical (i.e. flash point, pH) on the MSDS.

Handle All Chemicals Safely – wear chemically resistant nitrile gloves, safety glasses and wash your hands thoroughly after handling. Report spills promptly and avoid contact with spilled material.

**Waste Collection**

Four simple steps in hazardous waste management

1. **Identify and Collect** – When in doubt put it in a sealed leak-proof container. Never use food containers.
2. **Label** – Use the EHS provided Hazardous Waste Label. Complete all the sections. Remove or deface old labels.
3. **Contain** – Store liquids on spill containment pallets.
4. **Dispose** when full. Contact EHS for pick-up instructions.

**Universal Waste**

Universal Waste includes things that we all use on a daily basis. Because these wastes are “universally” generated and can be found in most every household, less stringent rules apply for their management if they are recycled. Universal Waste at Dartmouth College includes Batteries and Fluorescent Bulbs.

**Battery Collection:**

For Lead Acid batteries, tape the terminal ends with duct tape and protect batteries from breakage/spillage. Place inside a containment bin at the trash recycling area in your building. If you have a large number of these batteries, contact the Custodial Supervisor.

For alkaline, NiCd and other miscellaneous batteries – tape/protect contacts and protect from breakage. Most buildings have 5 gallon pails labeled as “Universal Waste-Batteries” for the placement of these batteries. When containers are full, place at the trash recycling area in your building or contact the custodial supervisor for a pick-up.
Bulb Collection:
Protect from breakage - store used intact lamps in either the same box that new lamps were shipped in, another box of similar size or a fiberboard drum. Boxes must be labeled “Universal Waste – Lamps”. Keep box closed except when adding contents. DO NOT TAPE LAMPS TOGETHER, do not mix new and old bulbs. Place boxes at the trash recycling area of your building for pick-up.

Miscellaneous Waste
Light fixtures may contain ballasts and some ballasts contain PCB’s. Unless you see the words “no PCBs” printed on the ballasts, you must assume it contains PCB. There is recycle value to all non-PCB ballasts. Place all ballasts for disposal in a plastic bag or box, label as “ballasts” and put in the nearest trash recycling area for pick-up.

Soil Contamination
All releases of hazardous materials to the environment must be promptly reported to EHS (646-1762). This includes fuels, oils or lubricants beyond de-minimus quantities (drops and mists) and any amount that reaches a waterway or drain. Trained employees can then clean up a spill of up to 25 gallons.

In the event that soil removal is possible, contaminated soil can be placed on polyethylene sheeting (water tight) and covered until appropriate disposal can be arranged. EHS must be contacted after spills are cleaned up and EHS or its designee will conduct clearance monitoring of contaminated sites as required.

Spills or contaminated soils that can not or are not contained and containerized within 24 hours will require NH DES notification. All spills over 25 gallons will be referred to the College’s emergency response vendor for remediation and disposal.

Some Examples of Hazardous Waste at Work Sites:

**MERCURY**
Thermostats
Thermometers
Fluorescent Bulbs
Barometers/ Manometers
Gauges
Switches
Free Mercury
(from spills of these devices or use in research)

**BATTERIES**
Lead Acid
Nickel Cadmium
Mercury dry and wet cell
Lithium and Nickel Metal Hydride

**PAINT/SOLVENTS**
Oil based paints
Latex paints with lead, chromium or mercury
Paint solvents/strippers or removers
Cleaning/degreasing solvents/parts washers

**PCB’s**
Fluorescent Light Ballasts
Capacitors
Motors
Hydraulic fluid
Casting wax
Vacuum pumps
Compressors
Heat transfer systems
Workers may be exposed to hazardous energy in several forms and combinations during installation, maintenance, service, or repair work. The purpose of Lock-Out / Tag-Out procedures is to prevent injuries and deaths that result from the accidental release of stored energy 29 CFR 1910.147. Workers need to recognize that energy can be available in many different forms, such as:

- Kinetic (mechanical) energy in the moving parts of mechanical systems
- Potential energy stored in pressure vessels, gas tanks, hydraulic or pneumatic systems, and springs (potential energy can be released as hazardous kinetic energy)
- Electrical energy from generated electrical power, static sources, or electrical storage devices (such as batteries or capacitors)
- Thermal energy (high or low temperature) resulting from mechanical work, radiation, chemical reaction, or electrical resistance

Energy may be present or potential.

“Lockout/Tagout (LOTO)” refers to specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities. This requires that a designated individual turns off and disconnects the machinery or equipment from its energy source(s) before performing service or maintenance and that the authorized employee(s) either lock or tag the energy-isolating device(s) to prevent the release of hazardous energy and take steps to verify that the energy has been isolated effectively.

To lockout means to place a lock on a device that prevents the release of energy. Locking out is intended to prevent the unexpected startup or energizing of machinery and equipment during service and maintenance operations. Locks are required unless locking out the equipment is impossible.

To tagout means to place a tag on a switch or other shut off device which warns others not to start the piece of equipment. Tags should only be used with locks, unless locking out the equipment is impossible.

General LOTO Principles:

- Notify affected employees that a piece of equipment or system must be shutdown or taken off line for servicing/maintenance.
- Identify the types of energy present, its hazards and the methods to control the energy safely.
- Identify the type(s) and location(s) of the control points (switches, valves, gates, etc.).
- Lock out/Tag out of the hazardous energies at their respective control point(s) according to established College procedures.
- Verify that the system is in a “Zero Energy State.”
- Perform work.
- Safely returning the equipment or system to service.

Personal Locks are given to Authorized Employees. These locks are:

- Color coded by shop.
- Used when a lockout procedure is required.
- Individually keyed.

Locksmiths keep core numbers. Get the locks you need and never lend your lock to anyone.
Only authorized employees may lockout or tagout equipment. All authorized employees must receive training. Employees who will be affected by the lockout/tagout procedure must be notified before the procedure is used and when the machine or equipment is returned to service.

Mechanical locks are given to authorized employees only. They are yellow in color and are commonly keyed. Never use mechanical locks for personal protection! Use with a tag or service note attached.

Special Conditions for the Removal of Locks

Under almost all circumstances, the only person that is authorized to remove a personal lock is the individual that attached it.

If the person who attached the lock is unavailable to remove their lock due to unforeseen circumstances the lock may be removed if all the following conditions are met.

1. The person was notified or attempts were made to notify them.
2. The supervisor and appropriate engineering staff member approves the special circumstances that warrant the removal.
3. All affected shops and individuals are notified of the need to remove the lock.
4. A traceable record of the date, time, location and individuals authorizing the removal is maintained.

National Institutes of Occupational Safety and Health (NIOSH) reports that three related factors contribute to injuries and deaths that occur when workers perform installation, maintenance, service, or repair work near hazardous energy sources:

1. Failure to completely de-energize, isolate, block, and/or dissipate the hazardous energy source
2. Failure to lockout and tagout energy control devices and isolation points after the hazardous energy source has been de-energized
3. Failure to verify that the hazardous energy source was de-energized before beginning work
The Basics: 29 CFR 1910.331.335

- Never use electrical equipment while standing in water.
- If an overhead wire falls across your vehicle while you are driving, stay inside the vehicle.
- Never repair electrical cords or equipment unless qualified and authorized.
- Assume that all overhead wires are energized at lethal voltages. Stay 10' away at a minimum.
- If working in damp locations, inspect electric cords and equipment to ensure that they are in good condition and free of defects, and use a ground-fault circuit interrupter (GFCI).

Portable equipment

- Inspect cords prior to use.
- Do not use the equipment if damaged or not properly grounded.
- Ensure that a GFCI is used with all plug-in equipment.
- Equipment used in wet locations must be rated for use in those locations.

Working with electrical systems requires certain qualifications. The following FO&M job classifications are considered to be qualified and will have received training to work with/on electrical systems:

- Electricians and high voltage electricians
- Troubleshooters
- Equipment Maintenance (EM)
- Maintenance Workers
- CEC Operators
- Electronics Technicians
- Welders
- Oil Burner Technicians
- Power Plant personnel who meet plant requirements

Circuits over 50 volts must be de-energized if at all possible. If this is not possible, then a “Live Work” permit is needed.
PPE specific to electrical work:

- Includes insulating gloves, blankets, hoods, line hose, sleeves, and matting
- Must be worn or used when working near or with electrical circuits or equipment.
- Must be in good repair, inspected regularly and tested.
- If damaged or defective must be tagged “do not use” and immediately removed from service.

Gloves: Affected employees are given 2 pair of rubber gloves with leather outer gloves. Always wear leather outer gloves over rubber insulating gloves to protect the rubber. Inspect and test gloves and sleeves before each use for any signs of damage. Test by blowing air into the glove, trap the air by rolling down the cuff, then listen for any air leaking out, watch to see if the glove remains inflated. Return gloves to the Tool Crib every 6 months to be sent away for testing.

Fire rated clothing is required. The extent will be determined by the hazard risk category. (see table 1 in the Electrical Safety-Related Work Practices Policy)

Tight spaces
Work in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts requires the use of protective equipment, protective shields, protective barriers or insulating materials as necessary to avoid inadvertent contact.

Warning others - signs, barricades or an attendant is required to alert others of hazards which could cause accidents.

Batteries:
Read all manuals supplied by the manufacturer before operating any battery run equipment. Hazards associated with industrial batteries include: hydrogen gas, sulfuric acid, shocks, and heavy lifting. All batteries create an explosion hazard from gas buildup especially when the batteries are warm. Ventilate battery enclosures and the room where batteries are stored or charged to prevent a gas build up. When performing maintenance on batteries, always wear safety glasses, a full-face shield and heavy duty green nitrile gloves. A heavy duty PVC apron may also be worn. Recycle used batteries.
Essential Information on the Selection and Use of Protective Equipment

Eye and Face Protection

Safety Glasses

Polycarbonate safety glasses protect against flying objects and debris while providing limited splash and spray protection. Clear polycarbonate lenses provide some UV resistance.

All safety glasses must be ANSI Z 87 compliant.

Note: unless both the lenses and frames are Z 87 compliant, prescription glasses are not effective eye protection.

Splash Goggles

ANSI Z 87 compliant splash goggles provide increased impact and splash protection by surrounding the orbit of the eye. When increased eye protection is needed, wear splash goggles.

Face Shields

ANSI Z 87 compliant face shields provide additional protection to the eyes & face.

Note: a face shield alone is not adequate eye protection! You must also wear ANSI Z 87 safety glasses or splash goggles when using a face shield.

Prescription Eyewear

Individuals in specific shops or trades (electricians, carpenters, equipment maintenance staff) may qualify for a special safety glasses benefit. Contact EHS for more information.
Hearing Conservation 29 CFR 1910.95
Noise induced hearing loss in the workplace is a preventable occupational injury. For this reason, Dartmouth College requires and promotes the use of hearing protection whenever moderate to significant noise exposure may be present. Additionally, Dartmouth provides medical surveillance, training and information to its employees as required by 29 CFR 1910.95.

Noise Exposure
Protection against the effects of occupational noise exposure must be provided when the sound levels exceed those shown in Table 1. Exposure may be reduced by:
• Installing barriers
• Replacing noisy equipment or processes with something less noisy
• Reducing the amount of time spent in a noisy environment
• Wearing hearing protection

When sound levels equal or exceed 85 decibels for 8 hours, then all elements of the Dartmouth hearing conservation program apply. At 85 decibels hearing protection is mandatory. Exposure to impulsive or impact noise should not exceed 140 decibels peak sound pressure level.

Respiratory Protection 29 CFR 1910.134
Respirators are a means of protecting employees from exposure to gasses, vapors, mists, dusts or fumes.
Respirators are typically used when spray painting, during pesticide applications, addressing excessive mold growth, cleaning up mice nesting areas and bird droppings, in excessively dusty work environments, or for protection against bio-aerosols and allergens. Other tasks will be evaluated for respiratory protection when necessary.

Whenever possible it is best to use engineering controls, work practice controls, materials substitution for controlling exposure to potentially hazardous airborne contaminants. If these controls are not feasible, or while they are being installed/implemented, appropriate respiratory protection will be used. (29 CFR 1920.134)
Contact EHS prior to the use of any respiratory protective device for an initial assessment and at any time if you have any questions about respiratory protection. If any changes occur in regards to the employee’s health or the workplace conditions the employee will be re-evaluated. Control over the selection and purchase of respiratory protection rests with EHS. All employees will be fitted with equipment that is specific to their needs and trained on its proper use based on manufacturer’s instructions/recommendations.

Respirator use requires an assessment, medical evaluation, fit test & training.

Head protection 29 CFR 1910.135
Hard hats must be class E and must comply with ANSI Z89.1 1997, ANSI Z89.1 2003, ANSI Z89.1 2009
Hard hats must be worn when:
• Objects might fall from above and strike the head
• There is the potential to bump heads against fixed objects, such as exposed pipes or beams
• Working near exposed electrical conductors
• Working in any area with signage stating hard hats must be worn

Foot Protection 29 CFR 1910.136
Footwear must comply with ANSI Z41-1999. Employees must wear protective footwear when working in areas where there is a danger of foot injuries due to:
• Falling or rolling objects
• Objects piercing the sole
• Exposure to electrical hazards
Protective footwear with a steel shank provides extra support and rigidity when standing on a ladder. In addition, slip resistant footwear may be required when working in slippery or wet areas to reduce the potential for slips and falls
See your supervisor for the most recent reimbursement policy.
The selection and use of hand protection is a three-step process.

1. **Identify the Potential Hazards**

   Physical hazards: cuts, lacerations, heat, cold, loss of grip, arm/hand vibration or electrical exposure.

   Chemical hazards: acids, bases (together called corrosives), solvents (lubricants, spray products), fuels (heating, automotive), pesticides, poisons, oxidizing agents (some water treatment products).

   Combining physical and chemical hazards require a coated glove with chemical resistance and some degree of physical protection against cuts and lacerations.

2. **Select the Right Glove**

   When selecting a glove consider the “3 Fs”
   
   1. **Form**—a good work glove allows for secure hand/tool & material control.
   2. **Fit**—a good fit is comfortable, snug & easy to wear.
   3. **Function**—good form & fit mean the glove is more likely to be worn, providing protection, comfort and value. Take the time to find the right glove for your work. If you are unsure of what glove is best, contact EHS for assistance.

3. **Wear, Care and Replace or Discard**

   - Never re-use disposable gloves and change them frequently if they become soiled.
   - Reusable gloves must be kept clean and replaced when torn, well worn, severely discolored or stinky.

### Glove Basics: Types and Common Applications

- **Leather Gloves**
  Provides cut and puncture resistance but no chemical protection

- **Cut Resistant Gloves**
  Made of Kevlar® fiber, cut resistant gloves come in different weights depending on the amount of cut protection needed.

- **Mechanics Gloves**
  Combine close fit, good dexterity, with knuckle, finger and palm padding. Designed for detail work in small spaces. Some designs come coated for limited chemical protection (usually solvents).

- **Anti-vibration Gloves**
  These gloves provide additional padding to protect the palm, thumb and fingers from prolonged hand-arm vibration.

- **Coated Cut Resistant Gloves**
  Nitrile, Neoprene or other chemically resistant coatings are available for cut resistant gloves combining chemical protection with cut resistance and improved wet grip.

- **Thermal Gloves**
  Designed for temperature extremes, available for welding and work on cryogenic systems. Contact EHS for assistance in selecting specialty gloves such as these.

- **Chemically Resistant Gloves (Reusable)**
  The three Rules of Selecting and Using Chemically Resistant Gloves
Rule One:
All gloves are permeable!

Permeation describes how a chemical(s) can pass through a glove material. Oftentimes this happens without a visible change in the glove or a sense that the thickness and condition of the glove, and on the extent and length of contact with the chemical(s).

Breakthrough describes the time lapsed between the first chemical contact outside the glove and its detection inside.

Degradation (a measure of a gloves tendency to swell, discolor or otherwise change due to chemical contact) is another factor to consider. This characteristic is secondary to permeation.

Rule Two:
All gloves are not created equal!

Plastic laminate gloves (such as Silver Shield®) offer protection against a wide range of hazardous chemicals. Limitations include reduced dexterity, sensitivity, the ability to grip when wet and tear/puncture resistance.

Sometimes the ideal glove is actually two gloves worn together.

Rule Three:
Care for your reusable gloves!

Most chemical handling does not require immersion or extensive/prolonged contact. It is not necessary to replace heavy-duty (reusable) gloves each time they are used but it is important to rinse them off and allow them to dry.

If you suspect that reusable gloves are contaminated, then replace them immediately. Gloves contaminated with hazardous chemicals are hazardous waste—please bag and set aside for disposal through EHS.

Disposable Gloves
Disposable gloves provide effective barrier protection against biological materials such as blood, vomit, urine and feces.

If disposable gloves become contaminated with hazardous or aggressive chemicals remove immediately, wash your hands thoroughly and replace.

Do not use latex disposable gloves. They may cause sensitivity or allergic reactions.

Do not re-use disposable gloves!

Chemically Resistant Glove Materials

Reusable, Nitrile
Protects against a wide-range of chemicals with excellent puncture and abrasion resistance.

Reusable, Flexible Plastic Laminate (PE/EVOH)
Worn under a reusable glove, provides an effective permeation resistant liner for work with particularly hazardous or aggressive chemicals. Wear a laminate beneath a reusable glove for maximum permeation resistance and chemical protection.

Reusable, Neoprene
Provides a broad range of chemical resistance to many solvents and corrosives.

Reusable, Butyl
Provides excellent gas and water vapor protection.

Reusable, Viton®
Provides excellent protection against aggressive chemicals including most aromatic and chlorinated solvents.

High(er) Quality Disposable Gloves
(usually Nitrile or Neoprene)
Provides limited chemical resistance with improved puncture and tear resistance when compared to less expensive disposable gloves.
The OSHA 10 & 30 Hour Construction and General Industry courses are part of OSHA's Outreach Training program. The purpose of these certifications is to ensure that all site and management personnel share a common, basic understanding of health and safety requirements. More importantly, it sets a higher standard for safety. Course coverage includes:

- Explaining the purpose of the OSH Act and list the functions of OSHA
- Identifying the OSHA inspection priorities
- Outlining the rights and responsibilities of employers & employees under the OSH Act
- Understanding the requirements for compliance with various construction and general industry standards

The emphasis is on the prevention of injuries through hazard recognition. Participants who successfully complete the course will receive an OSHA 10 Hour or 30 Hour card in either General Industry or Construction Safety.

These courses are appropriate for supervisors who have safety and health responsibilities and for workers who need an awareness level training of workplace hazards.

**OSHA Alliance**

OSHA's Alliances provide parties an opportunity to participate in a voluntary cooperative relationship with OSHA for purposes such as training and education, outreach and communication and promoting a national dialogue on workplace safety and health. The Occupational Safety and Health Administration (OSHA) and Dartmouth College agreed to form an Alliance in 2006. EHS works with OSHA to help foster a culture of injury and illness prevention by sharing best practices and technical safety and health knowledge, especially in the area of construction safety and health.

Dartmouth College Health and Safety Policies are available to employees of Dartmouth College at:

http://www.dartmouth.edu/~ehs/ehsbinder/

Additional information is available at the Environmental Health & Safety web site.

http://www.dartmouth.edu/~ehs
Job Safety and Health
It's the law!

EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.

- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.

- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the *OSH Act*.

- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.

- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.

- You have the right to copies of your medical records and records of your exposures to toxic and harmful substances or conditions.

- Your employer must post this notice in your workplace.

- You must comply with all occupational safety and health standards issued under the *OSH Act* that apply to your own actions and conduct on the job.

EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.

- You must comply with the occupational safety and health standards issued under the *OSH Act*.

This free poster available from OSHA –
The Best Resource for Safety and Health

Free assistance in identifying and correcting hazards or complying with standards is available to employers, without citation or penalty, through OSHA-supported consultation programs in each state.

1-800-321-OSHA
www.osha.gov

OSHA 3105-12-96R