Environmental Health & Safety
Cal Poly Pomona

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CAL POLY POMONA

ARE FACULTY RESPONSIBLE FOR SAFETY?

When discussing safety and the protection of the environment with faculty members, I am often asked the question "What are my responsibilities for safety and environmental compliance in my classroom or laboratory?" The answer to this question normally results in a very beneficial and somewhat scary discussion. However, to answer the question, faculty are responsible.

There are a few faculty members who make the statement that safety in my classroom or laboratory is not my responsibility. To these individuals, I would point out that a lot of judges, lawyers, and regulators do not agree and some of them have spent their lives suing, fining and sending people to jail who did not feel they were responsible. By the way, some of these people included "faculty", as demonstrated in the following examples.

March 13, 1997: A principal investigator at the University of Massachusetts at Boston was suspended pending an investigation of an explosion in his laboratory, which injured fifteen people. Concerns were raised regarding improper labeling, improper storage and inaccurate inventories of chemicals in the laboratory, as well as how students are trained and supervised. The fire department stated that they reserved the right to bring charges against the principal investigator for violations resulting in injury and property damage. The possibility that at least one, or all, of the fifteen people filed civil suits naming the principal investigator is a "sure thing".

September 2004: A faculty member at the University of Delaware is waiting for a Federal Judge to approve his plea agreement for accepting a virus sent to him without the proper permits. If the Judge approves, the faculty member will serve six months of home detention, be on probation for two years, and pay a fine of up to $250,000.

Some faculty members respond to these incidents where faculty were held responsible and accountable, stating that they only teach students in lecture classes and do not utilize any chemicals or infectious agents. This is a valid argument. However, this only reduces your visibility and vulnerability.

Just because you are responsible for the safety of your students does not mean you are helpless to protect your liability and reduce your risk. The following actions will help protect your liability and reduce your risk:

- Act prudently and be aware of the University Environmental Health & Safety Policy (http://www.csupomona.edu/~ehs/PolicyEH&S.pdf)
- Follow safety rules, use safety equipment and supervise your students.
- Inform students of the hazards that exist in your class.
- Post and enforce safety practices and rules.
- Post and inform students of campus emergency procedures (http://www.csupomona.edu/~procurement/graphics/Emerg_Proc_%20Man1.pdf).
- Lead classroom evacuation in the event of an emergency or alarm activation.
- Follow University Field Trip Guidelines (http://www.csupomona.edu/%7Edhrsrp/rp/field_trip.htm)

Taking these actions will reduce your liability and improve everyone's safety.

Environmental Health & Safety Policy

President Ortiz has reaffirmed the University's longstanding Environmental Health & Safety Policy . A copy is available on the EH&S Web Site at http://www.csupomona.edu/~ehs/PolicyEH&S.pdf.

BASIC INSPECTION FOR INDOOR AIR QUALITY

Building ventilation systems are mechanical systems designed to operate within specific parameters, conditioning air to deliver a level of comfort to occupants. Inspection of the ventilation system can determine when aberrations occur, which may impact employee comfort or health.

Temperature/Humidity: The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) specifies the following temperature and humidity parameters for maintaining thermal comfort:

Relative Humidity	Winter Temperature	Summer Temperature
30 %	68.5-76.0 ºF	74.0-80.0 ºF
40 %	68.5-75.5 ºF	73.5-79.5 ºF
50 %	68.0-74.5 ºF	73.0-79.0 ºF
60 %	68.0-74.0 ºF	72.5-78.0 ºF

Filtration/Particulates: Dirt accumulation on the supply air diffuser vanes, or on surfaces below can be an indicator of poor filtration. Filters, which are improperly sized or seated in their frames, allow for bypass of unfiltered air. Pre-filters on outdoor air intakes will reduce the amount of dirt/debris entering the ventilation system. Low efficiency filters will allow fine particles to accumulate, ultimately reducing the life of the ductwork. Pleated filters with a dust spot efficiency of 30% are recommended and should be regularly changed. Deteriorating sound liner fibrous insulating material should be removed/replaced.

Outdoor Air/Circulation: The air handling unit should be equipped with an open outdoor air intake delivering a minimum of 20 cubic feet per minute of outdoor air per occupant at all times. Outdoor air supply is of most concern in the densely occupied areas of the building and can be quantified by a qualified HVAC technician. On small package units, maintaining thermostat controls with the fan setting in the manual or "on" position will ensure continuous fan operation. If the fan setting is in the "auto" mode, blower operation, air circulation and subsequent outdoor air supply is limited to periods of cooling/heating demand.

Coil/Pan: Air is chilled to its dew point by the cooling coils and condensation develops. Coils and drain pans should be cleaned periodically and pans adequately sloped to be free-draining. Standing water will allow growth of a microbial slime layer that can plug the drain and overflow.

Odors/Pressurizations: Outdoor air intakes should be free of sources of contamination. Infrequently used plumbing traps should be kept wet to reduce the likelihood of sewers odor backpressure. Air handling unit condensate drains, which connect to sewers, should be equipped with traps. Ventilation systems should maintain the building under a positive pressure relative to the outdoors, and offices should be positively pressurized relative to any adjoining odor sources; i.e. manufacturing, laboratory areas, etc.

Moisture: Water damage will promote the growth of mold and bacteria. It should be inspected to determine whether any visible fungal growth is present. Mold should be removed. Be aware that moisture can wick from considerable distances.

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GETTING OFF THE GROUND SAFELY

Ladders are one of the oldest and most widely used of human tools. With the advent of new materials, construction techniques and design processes, modern ladders are stronger and safer than ever. But ladders remain an essentially simple tool and the key to their safe use remains largely in the hands of the users.

The purpose of a ladder is simple: to extend our natural reach and to let us work at heights well above our outstretched arms. Using a ladder seems too simple to require description, but because ladders are so simple in purpose and function, it is easy to forget the danger that increases in direct relation to the distance we put between ourselves and the ground.

Because of that danger, the American National Standards Institute (ANSI) and Occupational Safety & Health Administration (OSHA) have created standards to help reduce the inherent risks associated with ladder use. The standards establish maximum lengths allowable for different types of ladders: straight ladders may not exceed 30 feet, extension ladders, depending on the number of sections, may not exceed 60 feet, stepladders, platform ladders and trestle ladders must not exceed 20 feet.

ANSI has developed a weight rating for ladders. The rating numbers correspond to how much weight the ladder should be able to accommodate:

GETTING OFF THE GROUND SAFELY (continued)

- Type 1A holds a maximum of 300 lbs., Type 1, 250 lbs.
- Type 2, 225 lbs.
- Type 3, 200 lbs.

It is worth remembering that weight refers to the combined weight the worker and whatever tools or load the worker carries.

Remember these safety tips before you get off the ground on a ladder:

Read The Instructions: Before working with a ladder for the first time, be sure to go over the manufacturer's instructions carefully to make sure you are using the ladder correctly.

Inspect Closely: Look the ladder over before you use it. Make sure your ladder is still in good condition and free from defects or damage.

Position Properly: The ladder should be level and solidly placed. The angle should be consistent with manufacturer instructions. Stepladders should be fully opened and the hinges should be snapped into place.

Climb Cautiously: Always climb using a three-point grip; either two hands and one foot or one hand and two feet should be on the ladder at all times. Have a person on the ground spotting you and holding the ladder firmly in place.

For more information, see EZ Facts document #132, ANSI/OSHA Ladder Requirements. Find it at: http://www.labsafety.com/refinfo/ezfacts/ezf132.htm.

For a selection of stepladders, go to: http://www.labsafety.com/store/dept.asp?dept_id=5392.

For a selection of extension ladders, go to: http://www.labsafety.com/store/dept.asp?dept_id=5385.

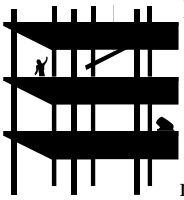
For a selection of articulated ladders, go to: http://www.labsafety.com/store/dept.asp?dept_id=5382.

For a selection of rolling ladders, go to: http://www.labsafety.com/store/dept.asp?dept_id=5390.

Saf-T-News
http://www.labsafety.com/refinfo/saftnews/
November 5, 2003

HEIGHT DOES MATTER IN FALL PROTECTION

A reader, responding to *COR's* Oct. 10 article about Cal/OSHA's proposed fall protection standard for residential construction (p. 8078), forwarded the following list of trigger heights above which fall protection is required. When it comes to fall protection requirements in California, it "depends on what you're doing," he said.



Fall Protection Heights above which guardrails or personal fall arrest systems must be installed, per Cal/OSHA regulations:

- 30 inches – Unenclosed elevated work locations: §3210(a)
- 4 feet – Order pickers: §3656(e)
- 4 feet – Electrical poles/towers: §2320.8
- 6 feet – Crossing over trenches/excavations on bridges/walkways: §1541(1)(1)
- 7-1/2 feet – Outdoor signs: §3416
- 7-1/2 feet – Perimeters/edges/sides/slopes/etc. of structures: §1670(a)
- 8 feet – Platform/walkway above open-top bin: §1548(d)(1)
- 15 feet – Thrustouts, trusses, beams, purlins, etc.: §1669(a)
- 15 feet – Tower crane erection/dismantling: §4966(a)(1)(A)
- 20 feet – Certain roof structures: §1730
- 25 feet – Construction: Safety nets if nothing else: §1671

30 feet – Ironworkers connecting beams: §1710(m)(1)

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REPORTING SAFETY ISSUES (HAZARDS & CONCERNS)

The University has established procedures for reporting safety hazards or concerns as part of the Injury and Illness Prevention Program. All hazards or concerns should be reported immediately to your supervisor as well as the department responsible for abatement or control of the hazard.

SAFETY HAZARD REPORTING

Serious Injuries or Crimes
Dial 911 University Police

Hazardous Substance Releases
Dial 911 University Police
and
Dial 4697 Environmental Health and Safety

Routine Repairs/Maintenance
Dial 3030 Facilities Management (M-F, 8 am—5 pm)

REPORTING SAFETY ISSUES (continued)

or
Dial 3070 University Police (after hours)

Pedestrian/Vehicle Safety
Dial 3070 University Police

Other Safety Information
Dial 4697 Environmental Health and Safety

EH&S Confidential Voice Mailbox
Dial 4313

The University maintains a confidential voice mailbox (**extension 4313**) , Web Page (http://www.csupomona.edu/~ehs/safetyconcern.html) and an Employee Safety Information Form (F02554) are available to assist staff, faculty and students in reporting potential safety hazards. Every effort has been made to maintain the confidentiality of those using the voicemail extension; David Patterson, Director of Environmental Health and Safety, is the only individual with access to the voicemail messages. Please do not use the voicemail number, web page or the information form for reporting hazards that require immediate assistance. Emergency calls should be directed to 911, urgent calls should be directed to University Police (3070), or Facilities Management (3030).

Supervisors and departments receiving a report of an imminent safety hazard should respond immediately to prevent serious injuries. Most safety hazards can be avoided by the abatement or removal of the hazard, posting warning signs, closing the area to prevent entry, or through the proper use of personal protective equipment.

HOW MUCH CAN MY WORKERS LIFT?

One of the most frequent questions I get asked as an Ergonomics Consultant is: "How much can my workers safely lift?" The answer is not that simple. Like most states, California does not have a specific law regarding the maximum weight a worker can lift, even though there is an ergonomics regulation in place.

Basically, the answer is: "It depends on a number of factors." Weight alone does not determine the risk of injury. To determine how much weight a worker can safely lift, you must look at factors such as:

- The size, shape, and texture of the object you are lifting
- The type of handles on the object
- The starting height of the lift and height to which you must lift the object
- The number and frequency of lifts performed
- The amount of twist required by the lift
- The extent to which the object must be carried
- The worker's body posture during the lift
- The position of the load
- The fitness health, and skill level of the worker

If the worker is positioned in an ideal posture he/she is able to lift greater loads. Under ideal conditions, the National Institute of Occupational Safety and Health Lifting Equation allows a lift of 51 lbs. However, when the body posture is not ideal (e.g., back is twisted or arms are outstretched), then the amount of weight the worker can safely lift is reduced.

In order to help the worker move items safely, take the above risk factors into consideration and use some of the following guidelines to reduce the risk.

- Whenever possible avoid lifting. Use lift assist devices or slide items on the same level rather than lift them.
- Raise items off the floor – lifting from floor level puts the worker at a high risk of injury.
- If a lift can't be avoided, ensure that good lifting techniques are used.
    - Test the weight of the load.
    - Use a buddy if necessary.
    - Keep the load close.
    - Tighten stomach muscles as you lift.
    - Keep the back straight.
    - Lower the load the same way.
    - Avoid twisting with the load.
- Ensure that the load has good handles and is as stable as possible.
- Use carts to move loads from one point to another. Keep the path clear and the cart in good working order.

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