

# California Institute of Technology

## PERSONAL PROTECTIVE EQUIPMENT GUIDE



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# CHAPTER I: SCOPE AND PURPOSE

Personal protective equipment (PPE) shall be used when engineering and/or administrative controls cannot be implemented to control the hazards of a process or the environment that may cause injury or impairment to employees.

This recommendation defines the requirements for selection, training, application and use of personal protective equipment (PPE). The PPE covered in this document includes eye and face protection, head protection, foot protection, hand protection, protective clothing, and protective shields and barriers.

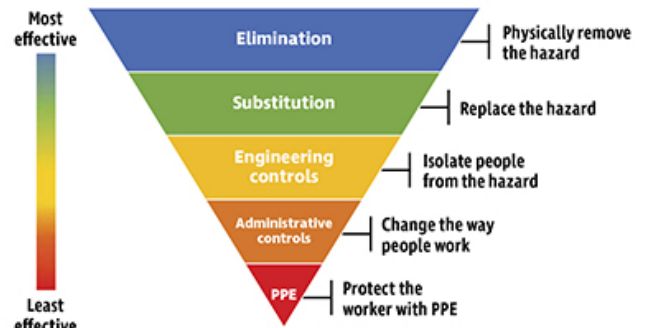
These requirements apply to all Caltech personnel working in Facilities, in Laboratories and in work locations where PPE is applicable. For additional information and specific information about laboratory PPE consult other [Caltech Safety Programs](#).

Respiratory protection, hearing protection, and fall protection have more rigorous requirements but are still covered under these guidelines. EH&S will assist in hazard assessments and training as needed.

# CHAPTER II: DEFINITION

- **Hazard Assessment:** An evaluation of a workplace, work situation or task, as to the potential for hazards that an employee may encounter while performing the job. The evaluation should be used to set standard operating procedure(s) (SOP) for personnel including the appropriate Personal Protective Equipment (PPE) required to mitigate risks, and then train employees on the protective features and limitations of the PPE, and on its proper use and maintenance.

NIOSH HIERARCHY OF CONTROLS



- **Engineering Controls:** Intended to control the hazard at its source. It is preferred way of controlling hazards. The work environment and the job itself should be designed to eliminate hazards or reduce exposure to hazards. Engineering controls are based on the following principles:
  - If feasible, design the facility, equipment, or process to remove the hazard or substitute something that is not hazardous.
  - If removal is not feasible, enclose the hazard to prevent exposure in normal operations.

Where complete enclosure is not feasible, establish barriers or local ventilation to reduce exposure to the hazard in normal operations.

- **Administrative Controls:** Measures aimed at reducing employee exposure to hazards. These measures include procedures and training, and exercise breaks and rotation of workers. These types of controls are normally used in conjunction with other controls that more directly prevent or control exposure to the hazard.
- **PPE:** Using PPE requires hazard awareness and training on the part of the user. Appropriate PPE must match the task hazards, and equipment is prescribed when hazards cannot be eliminated by administrative or engineering controls.

Employees must be aware that the equipment does not eliminate the hazard. If the equipment fails, exposure will occur. To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition.

## CHAPTER III: ROLES AND RESPONSABILITIES

### 1. Supervisors

Supervisors should make certain that:

- Hazard assessments are conducted, documented and review if conditions in the workplace change.
- Appropriate PPE is assigned.
- Affected employees receive training and training records are maintained.
- Changes in PPE requirements, for example, new procedures or processes requiring PPE, and/or omission of a job or task, must be communicated to employees.

### 2. Employees

Employees are responsible to:

- Wear PPE properly
- Attend training sessions on PPE.
- Care for, clean, and maintain PPE.
- Inform supervisor of the need to repair or replace PPE.

### 3. Environmental Health and Safety (EH&S) Representatives

EH&S representatives are responsible to:

- Assist in the hazard assessment process, when necessary, in consultation with the workplace Supervisor and/or designee.
- Help identify appropriate PPE for designated jobs.
- Develop and administer PPE training whenever necessary.

## CHAPTER IV: PPE Process

Role	Tasks
Supervisor	<ul style="list-style-type: none"> <li>• Participate in the hazard assessment process.</li> <li>• Determine proper PPE.</li> <li>• Provide a selection of PPE.</li> <li>• Make sure appropriate PPE is used for identified tasks.</li> <li>• Ensure training is completed and documented.</li> </ul>
Employee	<ul style="list-style-type: none"> <li>• Wear appropriate PPE.</li> <li>• Inspect, clean and maintain PPE.</li> <li>• Inform Supervisor of damaged PPE or if PPE is needed.</li> </ul>
EH&S	<ol style="list-style-type: none"> <li>1. Assist in hazard assessment.</li> <li>2. Help identify appropriate PPE.</li> <li>3. Develop and administer training.</li> </ol>

### **1. Hazard Assessment**

The type of PPE required for each task is based on a hazard assessment which determines the hazards present and the proper PPE - foot, head, eye, face, and hand - that should be worn to mitigate the risks. A hazard assessment should be done on non-routine work to determine if PPE is needed. In some cases, the need to do this assessment may not be predetermined until the task or job is assigned.

### **2. Selection of PPE**

Supervisors must provide a selection of PPE and make sure that appropriate PPE is used for the identified tasks. PPE must provide a level of protection that meets all the requirements to protect employees from the hazards in their workplace.

In fitting PPE, careful consideration must be given to comfort and fit. Care should be taken to ensure that the right size of the PPE is selected.

### **3. Training and Fit Testing**

Supervisors should make certain that all affected employees receive training on:

- The identified hazard and appropriate PPE protection
- How to wear PPE properly
- PPE limitations and capabilities
- PPE care and maintenance

Periodic training will be conducted under the following conditions:

- Changes in the workplace that make previous training obsolete, new or change in job assignment/equipment
- Incorrect use of PPE
- Introduction of new PPE

Training and refresher training must be documented.

### **4. PPE Inspection, Cleaning and Maintenance**

Employees are responsible to conduct inspection, cleaning, and maintenance of their assigned PPE according to the manufacturer's instructions. Damaged or defective equipment shall not be used.

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