**The Pennsylvania State University**

**Personal Protective Equipment (PPE) Program**

# Introduction:

It is the goal of the Pennsylvania State University to use engineering and administrative controls as the primary methods for addressing occupational hazards. “Engineering controls” focus on controlling a hazard at its source. The basic concept behind engineering controls is that work environments, equipment, and job tasks should be designed to eliminate or reduce exposure to hazards. Common examples of engineering controls include machine guarding, ventilation, and enclosure of noisy equipment.

“Administrative controls” focus on the interaction between an employee and a hazard. These controls involve the introduction of work practices that reduce the risk of injury or illness. Common examples of administrative controls include job rotation, training, and the development of standard operating procedures (SOPs).

Personal Protective Equipment (PPE) must be used when engineering and administrative controls are either not possible or infeasible. PPE can also be used to complement these other controls when they do not completely eliminate the hazard. Many injuries and illnesses can be easily prevented by utilizing PPE, resulting in more efficient operations and reduced costs.

Work units which utilize PPE must implement a “PPE Program” for their employees. This document will serve to describe the required elements of such a program.

# Purpose:

This program has been established to:

## Ensure the proper selection and use of PPE.

* Ensure that units understand and comply with safety standards for PPE.

## Establish minimum PPE requirements for job tasks and/or work areas with potential injury exposure.

## Assign responsibilities to personnel which are necessary for successful implementation.

# Scope & Applicability:

## This program applies to all Penn State properties and work performed by Penn State employees regardless of job site location. The Hershey Medical Center and the College of Medicine are exempt from this program.

* This program applies to all types of PPE.
* If respiratory, hearing protection, arc flash/electrical, or fall protection PPE is necessary, refer to the respective PSU safety programs. *(This program only contains general references for the use and care of these types of PPE)*

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# REFERENCES

This program has been developed in accordance with the following:

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| **Reference Documents** |
| PSU Laser Safety Policy (SY17) |
| PSU Respiratory Protection Program and Procedures |
| PSU Laboratory and Research Safety Plan |
| PSU Hearing Program Manual |
| PSU Energized Electrical Safety Program |
| PSU Pesticide Management Program Manual |
| OSHA General PPE Requirements (29 CFR 1910.132) |
| OSHA’s Eye and Face Protection Standard (29 CFR 1910.133) |
| OSHA’s Head Protection Standard (29 CFR 1910.135) |
| OSHA’s Foot Protection Standard (29 CFR 1910.136) |
| OSHA’s Hand Protection Standard (29 CFR 1910.138) |

# RESPONSIBILITIES

## **Budget Executives and Budget Administrators**:

* + - * Ensure that responsibilities assigned within this program are carried out within their administrative work unit.
      * Designate individuals responsible for the implementation of the PPE program within their work unit.
      * Monitor implementation of this program within their work unit.
      * Ensure adequate funding is available to support this program.

## **Supervisors**:

* Be thoroughly informed of the contents of this program and how it applies to their areas of responsibility and authority.
* Ensure hazards are eliminated by engineering or administrative controls whenever feasible.
* Conduct PPE Hazard Assessment(s) for their area of authority.
* Re-evaluate PPE needs for work areas and/or job tasks should any changes occur.
* Provide employees with appropriate PPE.
* Ensure employees receive PPE training.
* Evaluate, approve, and document any new articles of PPE, or changes in existing PPE, prior to use.
* Ensure employees comply with this program and take prompt corrective action when unsafe conditions or practices are observed.
* Investigate injuries and incidents within their work unit related to PPE usage or lack thereof.

## **Employees**:

## Comply with this program and use personal protective equipment as required.

* Attend all training required by this program.
* Promptly report any concerns related to PPE to their immediate supervisor.

## **Safety Officers**:

* Determine the applicability of the PPE program to activities conducted within their work unit.
* Coordinate implementation of the PPE program within their work unit.
* Ensure PPE hazard assessments are performed and documented for work areas and / or job tasks.
* Ensure that all affected employees within their work unit have been trained in accordance with this program.
* Ensure records of PPE Hazard Assessments and training are maintained by the work unit.
* Assist in the investigation of injuries and incidents within their work unit related to PPE usage or lack thereof.

## **Environmental Health and Safety**

## Assist work units in implementing the provisions of this program.

* Periodically review and update this program as needed.
* Set minimum standards for PPE when applicable.
* Provide training to supervisors on how to conduct hazard assessments and train their employees on PPE.
* Develop materials to support supervisors in training employees.

# DEFINITIONS

## **Apron**: A garment which covers and protects the front part of the body from splash contact.

## **Chemical Resistant Gloves**: A form of hand protection typically constructed of Latex, Nitrile, Neoprene, Butyl, or similar materials which are designed to withstand contact with chemicals based on the manufacturer’s recommendations.

## **Chemical Resistant Boots**: Knee high, rubber boots which are designed to withstand contact with chemicals based on the manufacturer’s recommendations. If needed, chemical resistant boots may be worn over safety shoes, or may be constructed with a protective toe as an integral part of the boot which can be worn singly to fulfill both safety shoe and chemical boot requirements.

**Contractor**: A person or firm that is not considered an employee of Penn State University. Conducts work for Penn State University on Penn State property via a contractual arrangement or purchase order.

## **Cryogenic Gloves**: A form of hand protection constructed of material that can withstand extreme temperatures. These are designed to withstand contact with extremely low temperatures based on the manufacturer’s recommendations.

## **Cut Resistant Leg Protection**: Leg coverings which are available in a variety of forms including chaps, logger pants, and leggings.  Such protection must be constructed of a cut-resistant material and extend from the upper thigh down to the boot top while adequately covering the leg.

## **Electrical Safety Shoes**: Non-conductive safety shoes meeting ANSI-Z41 or ASTM F2413-5 standard. These shoes will have the initials “EH” stamped on the tongue.

## **Face shield**: A device to protect the face against impact and chemical splashes which meets ANSI Standard Z87.1.

**Field Work**: Any research or work tasks performed outdoors on publicly accessible land. A research or work task performed inside posted land where hunting is not permitted does not apply. If hunting is permitted, it should be included in the PPE hazard assessment. See this website for more information on hunting zones for PSU, <http://huntpsu.cas.psu.edu/>

## **Hard Hat**: A device worn over the head to protect against falling objects and impact with fixed objects which meets ANSI Standard Z89.1.

* Class G hard hats provide protection against voltages up to 2,200 volts.
* Class E hard hats provide protection against voltages up to 20,000 volts.
* Class C hard hats are considered conductive and must not be used when there are electrical hazards.

**Hearing Protection**: A type of personal protective equipment specifically designed to prevent hearing damage. These typically include earmuffs which are worn over the ears and ear plugs which are worn inside the ear.

## **Laser Goggles/Glasses**: Impact resistant eyeglasses with side shields that protect eyes against intense ultraviolet, infrared or visible light and meet ANSI Standard Z136.1. Refer to the manufacturer’s recommendations regarding the proper shading for the desired wavelength of laser.

**Safety Data Sheet (SDS)**: A form containing information such as the physical properties, toxicity, health effects, first aid, reactivity, storage, disposal and safe handling for a particular substance.

## **Personal Protective Equipment (PPE)**: Clothing which provides a physical barrier between a person and a known hazard.

**Reflective Vest**: High visibility, reflective clothing meeting the ANSI 107 standard. Minimum Class 2 vest is required.

## **Respiratory Protection**: A NIOSH approved respirator (1/2 face, full face, Etc) worn over the mouth and nose to prevent the inhalation of harmful substances by purifying the inhaled air or supplying clean, breathable air.

## **Safety Glasses**: Impact resistant eyeglasses with side shields, which meet ANSI Standard Z87.1. This form of eye protection provides protection against flying particles and limited protection against chemical splashes.

**Safety Goggles**: Protective eyewear that encloses or protects the area surrounding the eye in order to prevent contact with particulates, water or [chemicals](http://en.wikipedia.org/wiki/Chemicals). Safety goggles can be non-vented, direct-vented, or have indirect-venting.

## **Safety Shoes**: Steel toed or composite toed leather (or equivalent) boots or shoes meeting the ANSI Z41 or ASTM F2413-05 standard.

**Thermal Gloves**: Hand protection constructed of material that can withstand extreme temperatures. Refer to the manufacturers recommendations regarding the level of temperature protection provided by the gloves.

**UV Safety Eyewear**: Safety glasses that protect against the full spectrum of UV light and meet the requirements of ANSI Z87.1 & Z136.1.

**Visitor**: A person who visits an area where they are not assigned. This person may or may not be an employee of Penn State University.

**Volunteer**: A person who is not an employee of PSU and does not receive any form of compensation.

## **Voltage rated gloves**: Rubber insulated gloves designed to protect against specified electrical voltage ranges and meet the requirements of ANSI/ASTM Standard D120.

## **Welders Goggles**: Eyewear which completely surrounds and covers each eye with opaque material rated to withstand contact by molten metal and features lenses tinted to shield against damage from intense ultraviolet, infrared, or visible light. Must meet the requirements of ANSI Standard Z87.1 for impact protection.

## **Welder’s Hood**: Full face and eye shield, which covers the entire front and side of the face with an opaque material rated to withstand contact by molten metal. Such a hood also has an eye window, the lens of which is rated to withstand contact by molten metal and tinted to shield against damage from intense ultraviolet, infrared, or visible light. Must meet the requirements of ANSI Standard Z87.1 for the materials being used. Refer to Appendix F of this document for shading information.

**Work Gloves**: Gloves constructed of leather or an equivalent material of suitable thickness to protect against abrasion, puncture, or laceration injuries.

## **Work Shoe**:  A completely enclosed shoe as deemed appropriate based on the hazard assessment. Calf (8") height boots may be preferable for some operations but are not needed universally.

**Work Unit**: The area of responsibility of safety officers at University Park locations and a Director of Business Services at campus locations.

# HAZARD ASSESSMENT PROCEDURE

A "hazard assessment" is the process of identifying the hazards associated with a given task and prescribing personal protective equipment which must be utilized to reduce the risk. A “certification of hazard assessment” is a written document (such as the one in Appendix B) detailing the hazard assessment for a particular task.  The supervisor is responsible for ensuring that hazard assessments are performed and the certification(s) written.  Sections 4.1 – 4.6 below are the steps that are to be followed in order to complete a hazard assessment.

## A PPE Hazard Assessment must be performed for each work area and/or job task where hazards exist.

## If work areas are similar in nature (i.e. chemical labs, boiler rooms, machine shops) then only one written hazard assessment is needed for those areas. The form must make reference to similar locations as proof that an assessment was performed.

## Appendix A (PPE Hazard Assessment Certification for Common Tasks and Work Areas) contains the minimum required PPE for many areas/tasks as determined by the PSU EHS Department. These determinations were made based on occupational safety and health best practices, applicable regulations, and task hazard evaluation.

## 

## If the area/task in question is found in Appendix A, then Appendix B (PPE Hazard Assessment Worksheet) does not need to be completed. Appendix A is written certification that a PPE hazard assessment was performed.

## If the area/task in question does not appear in Appendix A, then Appendix B must be completed.

## 

## Findings from Appendices A & B must then be transmitted onto the form found in Appendix C (Summary of PPE Requirements).

## PPE must be worn by all employees and visitors, who work in, enter areas or complete tasks noted on Appendix C.

# PURCHASE OF PPE

1. As specified by OSHA, the work unit must pay 100% of most forms of personal protective equipment (PPE). This includes respirators, hearing protection, non-prescription eye protection, face protection, head protection, fall protection, electrical PPE, hand protection, chemical resistant PPE, and Flame Resistant PPE. The PPE exempted from this rule are prescription safety glasses and non-specialty protective footwear (including steel toed shoes and boots).

* + 1. The work unit will provide partial reimbursement for the purchase of non-specialty protective footwear once a year. See Appendix G for details.
       - Specialty footwear must be 100% paid for by the work unit. This includes items that offer special protective qualities such as chemical resistance, electrical protection and static dissipation.
    2. The work unit will provide reimbursement for one pair of prescription safety eyewear every other year. Refer to Appendix G for details.
       - Specialty eyewear must be 100% paid for by the work unit. This includes prescription eyewear inserts for respirators, laser safety eyewear and welding eyewear.

5.1.3 The work unit shall determine the need for safety-toe protective footwear and prescription safety glasses by utilizing the PPE hazard assessment procedure described in Section 4.0 of this

document.

5.1.4 The work unit must ensure its employees are protected from recognized foot and eye hazards. There are alternatives to using safety-toe protective footwear and prescription safety eyewear. Safety goggles, protective eyewear designed to fit over prescription glasses, safety toe guards, and metatarsal guards may all be used at the discretion of the work unit.

5.1.5 The employee is responsible to obtain and pay for any prescriptions needed to obtain protective eyewear.

5.1.6 The relatively slow rate of tint change found in transition lenses presents a hazard to employees moving indoors or into other areas of lower illumination than the outside. The work unit must make a determination based on the employee’s job duties and the environment as to whether or not transition lenses are permitted.

5.2 The employer is not required to pay for everyday clothing such as long sleeve shirts, long pants, street shoes and normal work boots. The employer is also not required to pay for ordinary clothing, skin creams or other items used solely for protection from the weather such as winter coats, jackets, gloves, parkas, rubber boots, hats, raincoats, ordinary sunglasses, and sunscreen.

# STORAGE, USE, AND MAINTENANCE OF PPE

*(Refer to manufacturers recommendations regarding proper storage, use and maintenance of PPE)*

## Apron:

* Store unused aprons in original packaging in a clean, dry place away from heat.
* Store used aprons in a clean, dry place where they will not be subject to splash or chemical contact.
* Inspect for holes, other defects, and contamination before using.
* Discard and replace if damaged or contaminated.
* Before removing apron, check for splashes and clean as necessary.

## Chemical Resistant Gloves:

* Store in a clean, dry place away from heat.
* Visually inspect for holes and defects before use.
* Do not put on gloves which are wet inside.
* Dispose of gloves at the first sign of deterioration or inside contamination.

## Hearing Protection (Ear plugs, Earmuffs, Canal caps, etc):

* Store in a clean, dry place away from heat.
* Inspect for cracks or chips in ear cups and cuts, tears or breaks in cushions or other deterioration before each use.
* Replace if damaged or deteriorated.
* Adjust for snug and comfortable fit.
* Maintain hearing protection in a sanitary condition.

## Electrical Safety Shoes:

* Store in a clean, dry place.
* Check before each use for damage or deterioration.
* Replace if soles are damaged or deteriorated.

## Face shield:

* Store in a clean, dry place away from chemical splash exposure.
* Inspect for cleanliness and structural or optical defects before each use.
* Replace if there are structural or optical defects.
* Clean before use if soiled or dirty.
* Clean and sanitize before each use if used by other individuals.
* Adjust headband for snug fit and wear squarely on the head.
* Before putting on or removing, do not touch or adjust with wet or contaminated hands and gloves.
* Carefully wipe splashes away with a damp cloth before removing. Clean and sanitize if contaminated.

## Hard Hat:

* Store in clean, dry place out of direct sunlight.
* Inspect before each use for cracked, dented, or chipped shell and for worn or deteriorated band, webbing, and suspension gear.
* Hard hats must be replaced at the first sign of any sort of deterioration or damage to any parts.
* Wear hat squarely on the head, not tilted to the back or side.
* Adjust for snug but not tight fit. There should be a clearance of at least 1 1/4 inch between the top of the head and the shell of the hat and an equal distance between the band and shell on all sides.
* Clean and disinfect on a frequent basis. [Scrub using hot water and detergent and then rinse in clear water].

## Laser Goggles and Glasses:

* Store in a clean, dry place.
* Inspect before each use for structural or optical damage or deterioration.
* Replace if structurally damaged or if optics are pitted or scratched such that unshielded light would pass through.
* Inspect for label identifying the laser wave length for which they are rated, the optical density of those wave lengths, and the visible light transmission.
* Clean and sanitize before each use if used by other employees.
* Periodically clean and sanitize.
* Check for proper fit before entering laser exposure area.

## Voltage rated gloves:

* Store gloves in glove bag, original container or equivalent device away from direct sunlight and heat. Do not fold gloves.
* Gloves must be visually inspected for damage or deterioration and leak tested before each use.
* Replace gloves at the first sign of damage or deterioration. Damaged/discarded gloves must be cut open from finger to gauntlet.
* Gloves must be tested every 6 months. Refer to the PSU Energized Electrical Safety Program located at [Energized Electrical Safety Program.pdf](http://www.ehs.psu.edu/occhealth/PSU_Energized_Electrical_Safety_Program.pdf).

## Respirators:

* Training, medical clearance, and fit testing are required for each separate type of respirator. Contact EHS.
* Store in a clean, sanitary place inside a plastic bag or equivalent container.
* Inspect before and after each use for wear, damage and deterioration.
* Replace worn, damaged, defective or deteriorated respirators at the first sign of wear or deterioration.
* Clean and disinfect after each use if used by other employees.
* Clean and disinfect regularly.

## Safety Glasses:

* Store in a clean, dry place away from chemical exposure.
* Inspect for cleanliness and structural or optical defects before each use.
* Replace if there are structural or optical defects.
* Clean before use if soiled or dirty.
* Clean and disinfect before each use if used by other individuals.
* Before putting on or removing, do not touch or adjust with wet or contaminated hands and gloves.
* Clean and sanitize if contaminated.

## Thermal Gloves:

* Store in a clean, dry place.
* Inspect before each use for chemical contamination, fraying, tearing, or other deterioration.
* Replace if contaminated or at first sign of fraying, tearing or deterioration.
* Slit discarded gloves from finger to gauntlets.
* Use only for rated temperatures.

## Welder's Goggles/Hood:

* Store in a clean, dry place.
* Inspect before each use for structural or optical defects.
* Replace if pitted or scratched to the extent they no longer meet their impact and penetration rating.
* Inspect before each use for marking indicating the source for which they are rated and their shade number.
* Do not use if marking is missing or unreadable.
* Replace if structurally damaged.
* Clean and sanitize before each use if used by other employees.
* Clean and sanitize periodically.

# TRAINING

## EHS is responsible for training supervisors who have employees required to wear PPE on the following:

* Completion of PPE hazard assessments,
* How to train their employees on PPE.

## Supervisors are responsible for ensuring training is provided to their employees who are required to use PPE. Employees will be trained to know the following:

* When PPE is necessary,
* What PPE is necessary,
* How to properly don, doff, adjust and wear,
* Limitations of PPE,
* Proper care, maintenance, useful life, and disposal of PPE.

## Training verification shall consist of a written certification that contains:

## Name of each employee trained,

## Date(s) of training,

## PPE included in the training.

## Refresher training in relevant topics will be provided to an employee when any of the following occur:

* Changes in the workplace render previous training obsolete;
* Changes in the types of PPE to be used render previous training obsolete;
* Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

# RECORD KEEPING

## 8.1 A copy of the most recent versions of Appendices B (PPE Hazard Assessment Worksheet) and C (Summary of PPE Requirements) shall be kept on file within the work unit.

## 8.2 EHS will maintain all records of supervisor training.

## 8.3 The work unit is responsible for maintaining records of employee training using Appendix D (PPE Training Certification Form).

## **9.0 CONTRACTORS**

Contractors are required to follow all applicable OSHA PPE regulations. PSU shall inform contractors engaged in work activities of any additional PSU PPE requirements for the work being performed. Contractors are responsible for providing their own PPE.

**Appendix A**

***Last updated on November 13, 2019.***

**PPE Hazard Assessment Certification for Common Tasks and Work Areas**

***IMPORTANT NOTES:***

***1) Penn State University’s EHS Department certifies this document as a PPE hazard assessment.***

***2) More stringent PPE requirements may be imposed by EHS, Supervisors, or Safety Officers.***

***3) Contact EHS in order to have work tasks added to this document.***

**GENERAL PPE RULES**:

1) Basic rules for clothing:

a) Loose clothing must not be worn when entanglement hazards exist.

b) Shorts and open-toed shoes are not permitted in machine/maintenance shops.

2) Basic rules for hearing protection:

a) Hearing protection must be worn when using the following:

i. Gas powered equipment such as mowers, chain saws, concrete saws, leaf blowers, vacuums, weed trimmers, etc.

ii. Hilti-guns

iii. Electric concrete hammer/impact drills, jack hammers, etc.

iv. Pneumatic equipment (jack hammers, air guns, etc)

v. Skid loaders, tractors, feed grinders, etc.

b) Hearing protection must be worn when in areas where it is difficult to hear or understand a “normal” tone of voice or conversation at a distance of about three feet. This is an indication that noise levels are probably exceeding safe exposure levels.

3) Basic rules for respirators:

a) Must be worn when required in Appendix B of the PSU Respiratory Protection Program, [Respiratory Protection Program Manual.pdf](http://www.ehs.psu.edu/occhealth/Respiratory_Protection_Program_Manual.pdf).

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| **Task(s) / Area(s)** | | **Potential Hazard(s)** | | **PPE Required** |
| **Grounds Tasks** | | | | |
| Backpack Blower Operation | | Flying particles, Noise, motor vehicle | | Safety glasses  Hearing protection |
| Chainsaw Use | | Flying particles, falling objects, cuts, noise, contact with motor vehicle | | Hardhat  Safety glasses  Hearing protection  Face shield  Work gloves  Cut resistant leg protection  Safety shoes |
| Chipper Operation | | Flying particles, noise, entanglement, cuts, falling objects, motor vehicle | | Hardhat  Safety glasses  Hearing protection  Work gloves  Safety shoes |
| Cutting Hedges | | Flying particles, noise, cuts, motor vehicle | | Safety glasses  Hearing protection when using power tools  Work gloves  Work shoes |
| Dig holes, trenches, etc. | | Flying particles, falling objects, noise, cuts, motor vehicle | | Hard hat if heavy equipment used or in trench  Hearing protection if powered equipment is used  Safety glasses  Work gloves  Safety shoes |
| Fertilizer application (solid and liquid) | | Chemical splash, flying particles, noise, inhalation | | Safety glasses(solids)  Goggles(liquids)  Hearing protection if powered equipment  Respiratory protection based on label/SDS  Chemical resistant gloves  Long sleeve shirt/pants |
| Install remove snow blades, mover deck, etc. | | Cuts, falling objects | | Safety glasses  Work gloves  Safety shoes |
| Lawn Mowing- Riding | | Flying particles, noise | | Safety glasses  Hearing protection  Work shoes |
| Lawn Mowing- Walk Behind | | Flying particles, noise | | Safety glasses  Hearing protection  Work shoes |
| Load/unload trucks | | Cuts, falling objects | | Work Gloves  Safety shoes |
| Mulching | | Cuts, falling objects | | Work gloves  Work shoes |
| **Task(s) / Area(s)** | | **Potential Hazard(s)** | | **PPE Required** |
| Operate loaders/backhoes/power equipment | | Flying particles, falling objects | | Hard hat (if not in cab)  Hearing protection  Safety glasses  Safety shoes |
| Operating Z-Track/Gators | | Noise | | Work shoe  Hearing protection (depending on noise level of the vehicle) |
| Pesticide Applicators | | Chemical splash, flying particles, noise, inhalation | | Refer to container label for PPE requirements |
| Planting Trees | | Cuts, falling objects | | Hardhat if large trees  Work gloves  Work shoes |
| Rake/remove leaves | | Cuts | | Work gloves  Work shoes |
| Salting Walks | | Flying particles, slip, skin irritation | | Safety glasses  Work shoes |
| Shoveling Snow | | Slip | | Work gloves  Work shoes |
| Snow Blower Operation | | Flying particles, slip | | Safety glasses  Hearing protection  Work gloves  Work shoes |
| Tree trimming/climbing with non-power tools | | Eye hazard, falling object, bump hazard, cuts, fall | | Hard hat  Safety glasses  Face shield if climbing tree  Hearing protection if using power tool  Work gloves  Work shoes |
| Weed trimming- String/Blade | | Flying particles, noise | | Safety glasses  Hearing protection  Long pants  Work shoe |
| **Janitorial Tasks** | | | | |
| Clean bathrooms | | Chemical contact, potentially infectious materials | | Safety glasses as label/SDS recommends  Chemical/liquid resistant glove |
| Dump trash | | Cuts | | Work gloves |
| Freeing stuck trash bags from receptacles | | Eye hazard, contact hazard | | Safety glasses  Work gloves |
| Floor care- stripping/waxing | | Chemical contact, flying particles | | Safety glasses  Chemical resistant gloves as label/SDS recommends |
| **Task(s) / Area(s)** | | **Potential Hazard(s)** | | **PPE Required** |
| Floor mopping | | Chemicals contact | | Safety glasses  Chemical resistant gloves as label/SDS recommends |
| Mix concentrates | Chemical contact | | Safety glasses  Chemical resistant gloves as label/SDS recommends | |
| Move furniture and equipment | Falling objects, cuts | | Work gloves recommended  Safety/work shoes | |
| Operate scrubbing, buffing, shampooing equipment | Contact hazard | | Work gloves recommended  Work shoes | |
| Remove and replace light bulbs | Eye hazard | | Safety glasses | |
| Shovel snow | Slip | | Work gloves  Work shoes | |
| Spread salt | Slip | | Safety glasses  Work glove  Work shoe | |
| Wash and clean windows, mirrors, walls, chalkboards, ceilings, blinds, light fixtures | Chemical contact | | Safety glasses  Chemical resistant gloves as label/SDS recommends | |
| Wash and polish furniture, etc. | Chemical contact | | Safety glasses  Chemical resistant gloves as label/SDS recommends | |
| **Athletic Facilities Tasks** | | | | |
| Check/add chemicals to pool | Chemical contact | | Safety glasses/goggles as label/SDS recommends  Chemical resistant gloves as label/SDS recommends | |
| Set up, tear down indoor and outdoor equipment | Falling object, cut | | Gloves recommended  Safety shoes | |
| Athletic field painting | Chemical contact | | Safety glasses | |
| Laundry – (towels, uniforms) | Chemical contact | | Safety glasses or goggles Chemical resistant gloves (when working in areas where chemicals are dispensed according to label/SDS) | |

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| **Carpentry Tasks** | | |
| **Task(s) / Area(s)** | **Potential Hazard(s)** | **PPE Required** |
| Shop work – fixed and portable power tools (saws, drills, grinders, sanders, nailers, etc.) | Flying particles, noise, airborne dust, heavy objects | Safety glasses  Safety shoes |
| Field work – portable power tools (saws, drills, grinders, sanders, nailers, etc.) | Flying particles, noise, airborne dust, heavy objects | Hardhat if overhead hazard exist  Safety glasses  Safety shoes |
| Roof Repair | Working at height, flying particles, noise, airborne dust, heavy objects | Hardhat  Safety glasses  Fall harness, See PSU Fall Protection Policy  Safety shoes |
| Installing insulation (sound / thermal) – fiberglass, rigid, etc. | Airborne dust | Safety glasses/goggles body cover (tyvek, etc) |
| Drywall installation | Flying particles, heavy objects | Safety glasses  Safety shoes |
| Paint / Coatings / Caulking applications (water, oil, and epoxy based) | Chemical contact | safety glasses |
| Glass cutting | Cuts, flying particles | Safety glasses  Cut resistant gloves  Work shoe |
| Ceiling tile installation (grid and adhesive) | Flying particles | Safety glasses or goggles |
| **Plumbing Tasks** | | |
| Cut, thread, bend, join metal pipe | Cut, flying objects | Safety glasses  Work gloves  Safety shoe |
| Cut and join plastic pipe | Cut, flying objects | Safety glasses  Work gloves  Work shoe |
| Clear blocked drain lines (chemical, power snakes, plungers) | Splash, cut | safety glasses  Work gloves (using power tools)  Chemical resistant gloves (using chemicals) |

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| **Electrical Tasks** | | |
| **Task(s) / Area(s)** | **Potential Hazard(s)** | **PPE Required** |
| Electrical circuit work – testing; troubleshooting; ballast, switch, receptacle replacement, etc. | Shock, noise, light, shrapnel, fire | See PSU Energized Electrical procedure, [Energized Electrical Safety Program.pdf](http://www.ehs.psu.edu/occhealth/PSU_Energized_Electrical_Safety_Program.pdf) |
| Electronics repair / maintenance | Shock, flying particles | Safety glasses  (see PSU Energized Electrical procedure, [Energized Electrical Safety Program.pdf](http://www.ehs.psu.edu/occhealth/PSU_Energized_Electrical_Safety_Program.pdf) ) |
| **Heating, Ventilation, Air Conditioning (HVAC) Tasks** | | |
| Clean / replace filters (HVAC systems) | Cut | Safety glasses  Work gloves |
| Boiler / Water Treatment chemical handling | Chemical contact | safety glasses/goggles/face shield/chemical resistant gloves  (as recommended by label/SDS) |
| Water softening systems – back-flushing, adding salt | Chemical contact | Safety glasses |
| Refrigerant gases handling | Chemical contact | Safety glasses |
| **Motor vehicle repair / maintenance Tasks** | | |
| Soldering, filing, grinding, sanding | Flying particles, cuts | Safety glasses or goggles Work gloves  Work shoes |
| Welding | Burns, eye damage, electrical shock, cuts, and falling objects, respiratory | Welding hood with proper shading  Welding clothing  Work gloves  Safety shoes |
| Sheet metal work | Cuts, falling object, flying particles | Safety glasses  Cut resistant glove  Safety shoes |
| Tire balancing | Falling object, abrasion | Safety glasses  Safety shoes |
| Small engine repair / maintenance | Chemical release/contact, flying particles | Safety glasses |
| **Task(s) / Area(s)** | **Potential Hazard(s)** | **PPE Required** |
| Vehicle body work (apply fillers, grind, sand, file, prime, paint, buff) | Flying particles, cut | safety glasses or goggles  Work gloves  Respirator may be required |
| **Painting Tasks** | | |
| Paint scraping, cleaning, sanding | Flying particles, respiratory hazard (Lead, Cadmium, Chromium, dust) | Safety glasses or goggles respirator as required |
| Priming / Painting | Flying particles, respiratory hazard | Safety glasses or goggles, respirator may be required |
| **Miscellaneous Tasks** | | |
| Cleaning with compressed air (less than 30 psi) | Flying particles | Safety glasses |
| Sign engraving (laminated plastic) | Flying particles | Safety glasses |
| Cut keys | Flying particles | Safety glasses |
| Snow removal (emergencies) – shoveling, plowing, blowing, etc. | Slip/fall, cut | Safety glasses  Hearing protection (blower)  Work gloves, work shoes |
| Working on/near roadway   * (i.e. landscaping tasks, utility work tasks, construction tasks, water services tasks, steam services tasks, janitorial tasks, etc) | Contact with motor vehicle | Reflective vest (minimum ANSI Class 2) |
| Airport baggage handlers | Contact with motor vehicle | Reflective vest (minimum ANSI Class 2) |
| Directing parking (outside a booth) | Contact with motor vehicle | Reflective vest (minimum ANSI Class 2) |
| Directing traffic | Contact with motor vehicle | Reflective vest (minimum ANSI Class 2) |
| Material handling (equipment, furniture, material receipts) | Cuts, falling objects | Work gloves  Work shoe or Safety shoe |
| Working in shops (metal, wood or maintenance shop) | Flying particles, falling objects, noise | Safety glasses  Hearing protection (as needed)  Safety shoe |

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| **Task(s) / Area(s)** | **Potential Hazard(s)** | **PPE Required** |
| Pouring, mixing, dispensing, and disposal of hazardous materials | Splash, chemical contact | Eye protection  Face protection  Hand protection  Body protection  (as recommended by label/SDS) |
| Transporting empty or full chemical cylinders | Falling object | Safety shoes |
| Installing or removing compressed gases | Chemical release | Safety glasses or goggles |
| Operating aerial lift, boom lift or bucket truck | Crush hazard, contact with objects, fall | Hardhat  Safety glasses or goggles if transporting chemicals  Safety shoes  Harness |
| Operating forklift/powered hand truck | Crush hazard, chemical contact | Safety glasses or goggles if transporting chemicals  Safety shoes |
| Operating scissor lift | Crush hazard, contact with objects, fall | Hardhat  Safety shoes  Harness if anchor point is available on scissor lift |
| Refueling Forklift, aerial lift, scissor lift or other types of powered industrial trucks | Crush hazard, chemical contact | Safety glasses or goggles  Work gloves  Safety shoes |
| Filling batteries with distilled water (Forklift, aerial lift, scissor lift or other types of powered industrial trucks) | Chemical contact | Safety glasses or Safety goggles  Face shield  Chemical resistant apron  Chemical resistant gloves  Work shoes |
| Cutting, Welding and Brazing | Burns, flying particles, falling objects, cuts | Welding hood with proper shading  Welding clothing  Thermal/work gloves  Safety shoes  Respiratory protection (as needed) |
| Laser Equipment – operation and maintenance | Skin and eye damage | PPE requirements are different for each laser depending on the wavelength and power output. (See PSU Laser safety program) |
| Work at height (roof, scaffolds) | Fall | See PSU Fall protection program  See PSU Scaffold program |
| **Task(s) / Area(s)** | **Potential Hazard(s)** | **PPE Required** |
| Blacksmithing | Cuts, falling object, thermal burns, flying particles | Safety glasses or goggles  Thermal/work gloves  Safety shoes |
| Check compressed gas/air systems | Chemical contact | Safety glasses  Work gloves |
| Check cryogenic systems | Chemical contact | Safety glasses  Cryogenic/work glove |
| Operating machinery within a completely enclosed cab. | None | As soon as employee exits the piece of machinery PPE may be required. Perform a Hazard Assessment. |

# Appendix B

PPE Hazard Assessment Worksheet

This tool in combination with Appendix C (Summary of PPE Requirements) serves as written certification that you have completed a hazard assessment for PPE.

**Instructions:**

1. Identify any possible activities that could cause a hazard by reviewing items listed in the first column, putting a check next to the activities performed in that work area or job/task. **NOTE: the activities listed in the first column are not all inclusive. You may need to write down other activities that are not listed.**
2. Identify any possible hazards that could cause injury by reviewing the items listed in the second column, putting a check next to the hazards to which employees may be exposed while performing the work activities or while present in the work area. (For e.g., work activity: chopping wood; hazard: flying particles). **NOTE: the hazards listed in the second column are not all inclusive. You may need to write down other hazards that are not listed.**
3. Determine if the hazard can be eliminated. If the hazard cannot be eliminated without using PPE, indicate which type(s) of PPE will be required to protect your employees from the hazard.Appendix E (Personal Protective Equipment Descriptions) and Appendix F (Welding Operation Shading Guide) are supplemental information. **NOTE: The PPE listed in the third column is not all inclusive. You may need to write down other PPE that is not listed.**

If having trouble determining correct PPE, Contact EHS @ 814-865-6391.

**PPE Hazard Assessment Worksheet**

|  |  |
| --- | --- |
| Assessment conducted by (Print and Sign): | Task or Work Area: |
| Date: | Work Unit and Department: |
| Campus location: | Job title of personnel conducting work: |

*Use a separate sheet for each task or work area*

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| **EYES** | | |
| Task or Work Area, such as:  abrasive blasting  sanding  chopping  sawing  cutting  grinding  drilling  hammering  welding  lab work  press operations  yard work  machining  laser use  Name task or work area:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | HAZARD(s):  airborne dust  flying particles  blood or other potentially infectious material splashes  hazardous chemicals  intense light (ex. Lasers, welding)  cryogenic liquids  pesticide use  Name other hazard: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Can hazard be eliminated without the use of PPE?**  **Yes  No**  If no, use:  Safety glasses  Safety goggles  Laser safety glasses  Welding shield/helmet (shade #\_\_\_\_\_\_\_) see appendix F  Name other PPE**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  No PPE Required |
| **FACE** | | |
| Task or Work Area, such as:  cleaning  lab work  welding  furnace operations  mixing  yard work  painting  pouring molten metal  dip tank operations  Name task or work area:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | HAZARD(s):  hazardous chemicals  extreme heat/cold  potential irritants  flying particles  Name other hazard: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Can hazard be eliminated without the use of PPE?**  **Yes  No**  If no, use:  Face shield  Welding shield/helmet (shade #\_\_\_\_\_\_\_) see appendix F  Name other PPE**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  No PPE Required |

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| HEAD | | |
| Task or Work Area, such as:  building maintenance  confined space operations  construction  electrical wiring  walking/working under crane loads  utility work  Name task or work area:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | HAZARD(s):  overhead beams  overhead pipes  exposed electrical wiring or components  falling objects  machine parts (ex. Entanglement)  Name other hazard: **\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Can hazard be eliminated without the use of PPE?**  **Yes  No**  If no, use:  Protective Helmet  Type E (up to 2,200 volts)  Type G (up to 20,000 volts)  Type C (no electrical protection)  Bump cap (not ANSI-approved)  Hair net or soft cap  Name other PPE**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  No PPE Required |
| **HANDS/ARMS** | | |
| Task or Work Area, such as:  animal handling  material handling  cooking  sanding  grinding  sawing  welding  hammering  working with glass  yard work  using knives  health care services  Name task or work area:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | HAZARD(s):  blood or other potentially infectious material  hazardous chemicals  tools or materials that could scrape, bruise, cut or puncture  extreme heat/cold  electricity  Name other hazard: **\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Can hazard be eliminated without the use of PPE?**  **Yes  No**  If no, use:  Gloves  Chemical resistance  Liquid/leak resistance  Temperature resistance  Abrasion/cut resistance  Slip resistance  Voltage rated  Protective sleeves  Long sleeve shirt  Name other PPE**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  No PPE Required |

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| FEET/LEGS | | |
| Task or Work Area, such as:  building maintenance  construction  demolition  food processing  animal handling  logging (ex. chainsaw)  plumbing  trenching  welding  Name task or work area:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | HAZARD(s):  objects that can roll over feet  hazardous chemicals  material handling  exposed electrical wiring or components  heavy equipment (ex. Forklift, pallet jack)  slippery surfaces  tools  Name other hazard: **\_\_\_\_\_\_\_\_\_\_** | **Can hazard be eliminated without the use of PPE?**  **Yes  No**  If no, use:  Safety shoes or boots  Toe protection  Metatarsal protection  Electrical protection  Heat/cold protection  Puncture resistance  Chemical resistance  Anti-slip soles  Leggings or chaps  Long pants  Closed toe shoe  Name other PPE**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  No PPE Required |
| BODY | | |
| Task or Work Area, such as:  baking or frying  building maintenance  battery charging  construction  dip tank operations  utility work  fiberglass installation  scaffold use  irritating chemicals  aerial lift use  sawing  working near water  item under pressure  live electrical work  use of highly flammable materials  Working on/near roadway  Name task or work area:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | HAZARD(s):  chemical splashes  extreme heat/cold  sharp or rough edges  exposed electrical wiring or components  height of more than 10 feet on scaffold  height of 6 feet during maintenance/construction activities  contact with motor vehicle  hunting / gun fire  Name other hazard: **\_\_\_\_\_\_\_\_\_** | **Can hazard be eliminated without the use of PPE?**  **Yes  No**  If no, use:  High Visibility Clothing  Fluorescent orange vest & cap  Flame Retardant Clothing  Coveralls, Body suit  Chemical resistant suit  Arc Flash PPE  Fall arrest/restraint equipment  Apron  Personal Floatation Device  Welding leathers  Abrasion/cut resistance  Name other PPE**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  No PPE Required |
| **LUNGS/RESPIRATORY** | | |
| Task or Work Area, such as:  cleaning  pouring  mixing  sawing  painting  fiberglass installation  compressed air or gas operations  welding  Name task or work area:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | HAZARD(s):  irritating dust or particulate  irritating or toxic gas/vapor  Pesticides  Name other hazard: **\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Can hazard be eliminated without the use of PPE?**  **Yes  No**  *(EHS must be contacted before employees are permitted to utilize a respirator)*  Dust mask  1/2 mask  Full mask  Powered Air Purifying Respirator (PAPR)  Self Contained Breathing Apparatus (SCBA)  Name other PPE**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  No PPE Required |
| **EARS/HEARING** | | |
| Task or Work Area, such as:  generator  grinding  ventilation fans  machining  motors  routers  sanding  sawing  pneumatic equipment  punch or brake presses  use of conveyors  Name task or work area:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | HAZARD(s):  loud noises  loud work environment  noisy machines/tools  punch or brake presses  landscaping equipment (ex. Lawn mower, blower, weed whacker)  firearms  Name other hazard: **\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Can hazard be eliminated without the use of PPE?**  **Yes  No**  Ear Plugs  Ear Muffs  Name other PPE**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  No PPE Required |

**Appendix C**

**Summary of PPE Requirements**

|  |  |
| --- | --- |
| Summary Approved by: Must be a Supervisor, Manager, Faculty, P.I., etc: (Print and Sign) | Task or Work Area: |
| Date: | Work Unit and Department: |
| Campus location: | Job title of personnel conducting work: |

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| Task(s) or Work Area(s) | Potential Hazard(s) | PPE Required |
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# Appendix D

PPE Training Certification Form

Person conducting the training: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Print: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sign: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Job Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PPE Covered: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I certify that these individuals have understood and demonstrated the following: when PPE is necessary, what PPE is necessary, how to properly don, doff, adjust and wear PPE; the limitations of the PPE; and how to properly care for, maintain, and dispose of PPE.

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| **Date** | **Print Name** | **Sign Name** |
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**Appendix E**

**Personal Protective Equipment Descriptions**

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| --- | --- | --- | --- | --- | --- |
| **Name Type** | **Photo** | | **Applications** | | |
| Glasses | **Non-Prescription**  Elvex Bifocal Rx-300  **Prescription**  **[http://www.39dollarglasses.com/store/images/thumb/Safety_Shield.jpg](http://www.39dollarglasses.com/7001_GoldTortoise.html?id=rsJfQRcm)**  **Over The Glasses Type**  **[Click for more details about Scout Visitor Safety Glasses](http://www.envirosafetyproducts.com/product/scout-visitor-safety-glasses.html)** | | If working in an area or conducting a task that is likely to produce flying particles, objects, dust, or harmful chemicals safety glasses with side protection (side shields) must be worn. | | |
| Goggles | **Direct Vented**  [MSA Sight Guard Single Lens Goggles](http://ep.yimg.com/ca/I/yhst-38637167768280_2068_9594716)  **Non-Vented**  [http://ep.yimg.com/ca/I/yhst-38637167768280_2064_196016031](http://www.discountsafetygear.com/nouv50c-n.html)  **Indirect Vented**  [Safety Goggles w/ Indirect Vents - Eye Protection - PPE](http://simplifiedsafety.com/store/media/catalog/product/cache/1/image/5e06319eda06f020e43594a9c230972d/f/i/file_1_77.jpg) | | Goggles protect your eyes, eye sockets, and the facial area immediately surrounding the eyes from impact, dust, and splashes.  Goggles are generally stronger than safety glasses and are used for higher impact, particle and chemical splash protection.  Goggles with direct venting (a mesh of small holes around the sides) tend to fog less, but should not be used with liquid or fine dust hazards.  When work involves chemical vapors a non-vented goggle is required protection.  Goggles for splash or high dust protection should have indirect venting. | | |
| Face Shield | [AOSafety® AOTuffmaster™ Face Shields](http://www.labsafety.com/search/Face+Shield/24534791/#bigimage) | | A rigid, transparent plastic sheet that covers the worker's entire face to protect against dust or splashes. Because face shields do not protect against impacts, they are often worn with safety or goggles.  When impact hazard is a potential, a face shield must always be worn with safety glasses or goggles. | | |
| Laser safety glasses and goggles | [Sperian Polymer Laser Eyewear](http://www.labsafety.com/search/laser+glasses/24541376/#bigimage) | | Use when working near or on class 3 or 4 lasers that has an open beam or the safety interlocks defeated.    The intense light created by lasers can damage your eyes. | | |
| Welding Shield | [FIBRE METAL® Tigerhood® Classic Welding Helmet](http://www.labsafety.com/search/welding+shield/24553390/#bigimage) | | Use when welding.  Ensure that the proper shade number (the shade number is marked on the shield and shows how dark the lens is) is chosen. | | |
| Disposable Gloves | **Nitrile**  [Ansell Touch N Tuff™ Nitrile Gloves](http://www.labsafety.com/search/disposable+gloves/24532305/#bigimage)  **Vinyl**  [LAB SAFETY SUPPLY® Disposable Vinyl Gloves](http://www.labsafety.com/search/disposable+gloves/24532633/#bigimage)  **Latex**  [Ansell Conform™ Latex Gloves](http://www.labsafety.com/search/disposable+gloves/24532251/#bigimage) | | Used for light chemical contact protection, abrasion resistance, and/or when increased gripping strength is needed.  If there is a question on what type of glove to use. Refer to the chemical’s Safety Data Sheet (SDS).  Refer to a glove material/chemical compatibility chart to ensure that the correct glove type is chosen for the chemicals that will be used. | | |
| Chemical Resistant Gloves | **Neoprene**  [Best® Ultraflex™ II Neoprene® Gloves](http://www.labsafety.com/Best-Ultraflex-II-Neoprene-Gloves-Small_s_147474S/Neoprene-Gloves_24543502/)  **Butyl**  [NORTH Mil Spec™ Butyl Gloves](http://www.labsafety.com/search/butyl/24529667/#bigimage)  **PVC**  [MAPA® Temp-Sea™ Insulated PVC Gloves](http://www.labsafety.com/search/pvc/24547008/#bigimage)  **Nitrile**  [NORTH Chemsoft™ Industrial Nitrile Gloves](http://www.labsafety.com/search/nitriel/24543564/#bigimage) | | | Used for light to heavy chemical contact protection.  Come in verifying lengths to protect wrists and forearms as needed depending on the task.  Other common types of chemical resistant gloves include: Viton, Natural Rubber and composite gloves such as “Barrier” and “Silver Shield”  If there is a question on what type of glove to use. Refer to the chemical’s Safety Data Sheet (SDS).  Refer to a glove material/chemical compatibility chart to ensure that the correct glove type is chosen for the chemicals that will be used. |
| Mesh | [WHITING & DAVIS Stainless Steel Mesh Protective Wear](http://www.labsafety.com/search/apron/24531639/#bigimage) | | | Typically used in the poultry, fish processing, and food industries.  Used for knife and blade sharpening / cleaning applications.  Also used when handling sharp objects and materials such as glass, blades, or metal. |
| Thermal / Cold | **Cold/Cryogenic**  [Waterproof CRYO-CLOVE gloves](javascript:openLgimg('0911312.jpg','0911330'))  **Heat/Thermal**  protective gloves | Cold protection can include anything from extremely cold water to cryogenic gases.  Heat protection for the hands may be needed when handling materials or working on surfaces that are heated, or even when working near actual flames. | | |
| Voltage Rated Gloves | **Leather glove**  http://mapcrafts.com/images/electric_gloves01.jpg  **Voltage Rated glove**  http://www.jmtest.com/pictures/971-Salisbury-E011Y.jpg | Leather gloves should always be worn over the voltage rated glove to provide protection against cuts, abrasions, and punctures.  The correct class of voltage rated glove for the task must be selected. The different voltage classes of gloves are as follows:  Class 00 – up to 500 volts  Class 0 – up to 1000 volts  Class 1 – up to 7500 volts  Class 2 – up to 17,000 volts  Class 3 – up to 26,500 volts  Class 4 – up to 36,000 volts | | |
| Hearing Protection | **Ear muffs**  [http://t2.gstatic.com/images?q=tbn:GCXOG2qxzvFzfM:http://www.procommradios.com/media/catalog/product/cache/1/image/5e06319eda06f020e43594a9c230972d/K/i/Kids-Hearing-Protection-Ove.jpg](http://images.google.com/imgres?imgurl=http://www.procommradios.com/media/catalog/product/cache/1/image/5e06319eda06f020e43594a9c230972d/K/i/Kids-Hearing-Protection-Ove.jpg&imgrefurl=http://www.procommradios.com/headsets/hearing-protection-headsets/avcomm-procomm-race-radios-hearing-protection-kids-headset-over-the-head.html&usg=__-B7ZRCEGvwwG-NRnnRs0QP1e_VE=&h=607&w=500&sz=40&hl=en&start=27&um=1&tbnid=GCXOG2qxzvFzfM:&tbnh=136&tbnw=112&prev=/images?q=hearing+protection&ndsp=20&hl=en&sa=N&start=20&um=1) | Ear plugs can either be considered reusable (canal caps or ear muffs) or disposable (ear plugs).  All hearing protection comes with a “Noise Reduction Rating” or NRR. The higher the rating, the better protection. | | |
| **Canal caps**  [http://t3.gstatic.com/images?q=tbn:78xXtCPXWdbDeM:http://www.uvprocess.com/products\SAFETY PRODUCTS.A4.HEARING PROTECTION.HEARING\BAND STYLE HEARING PROTECTOR.HEARING  H\HEARING  H_primary_WebPic1.JPG](http://images.google.com/imgres?imgurl=http://www.uvprocess.com/products\SAFETY%20PRODUCTS.A4.HEARING%20PROTECTION.HEARING\BAND%20STYLE%20HEARING%20PROTECTOR.HEARING%20%20H\HEARING%20%20H_primary_WebPic1.JPG&imgrefurl=http://www.uvprocess.com/product.asp?code=HEARING++H&usg=__I-2cekOYC_24YJ4MZCnUcrCIL4Y=&h=540&w=600&sz=42&hl=en&start=31&um=1&tbnid=78xXtCPXWdbDeM:&tbnh=122&tbnw=135&prev=/images?q=hearing+protection&ndsp=20&hl=en&sa=N&start=20&um=1) |
| **Ear plugs**  http://www.prolinefirstaid.com/pr/images/HearingProtection/MoldexHearingProtection.jpg |
| Apron | [Ansell CPP™ Heavy-Duty Aprons](http://www.safetysaves.com/safety_wear/Ansell-CPP™-Heavy-Duty-Aprons-pr-2055.html) | Aprons protects against splash hazards during such activities as pouring, transferring and mixing chemicals.  Other uses can also include, but aren’t limited to: contact with temperature extremes, impact protection from tools/machines, or contact with biological materials. | | |
| Respirators | **Dust Mask**  [http://upload.wikimedia.org/wikipedia/commons/thumb/4/48/Atemluftfilter_Einwegmaske.jpg/180px-Atemluftfilter_Einwegmaske.jpg](http://en.wikipedia.org/wiki/File:Atemluftfilter_Einwegmaske.jpg)  **½ Face Respirator**  [http://upload.wikimedia.org/wikipedia/commons/8/8b/Air-Purifying_Respirator.jpg](http://en.wikipedia.org/wiki/File:Air-Purifying_Respirator.jpg)  **Full Face Respirator**  http://www.drillspot.com/pimages/438/43891_300.jpg | Used to protect against a variety of different hazards such as fumes, vapors, particles.  A ½ face respirator can be used when there is no hazard to the eyes of the user.  A full face respirator must be used when protection to the eyes and face is necessary. | | |
| Lab Coat | CH-348  CH-1388 | A lab coat protects clothing and exposed skin of workers.  A lab coat or other protective clothing should be worn whenever chemicals or biological materials are handled. | | |

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| Safety Footwear | **Steel toed footwear (can also be made of composite type material)**  http://i.ehow.com/images/GlobalPhoto/Articles/4914464/164743-main_Full.jpg  **Metatarsal guards**  http://www.professionalequipment.com/product_images/LB13838Z_product.JPG  **Chemical Resistant**  http://www.labsafety.com/images/xl/ONGUARD-HAZMAX-Chemical-Resistant-LSS_i_LB22024.jpg | Used by employees who face possible foot or leg injuries from falling or rolling objects, crushing or penetrating materials, and heavy machinery.  Examples of situations in which an employee should wear foot and/or leg protection include:   * When heavy objects such as barrels or tools might roll onto or fall on the employee's feet * working with sharp objects such as nails or spikes that could pierce the soles or uppers of ordinary shoes * exposure to molten metal that might splash on feet or legs * working on or around hot surfaces * working where electrical step potential hazard exists. |
| Hard Hat | http://foresightsafetyglasses.com/store/graphics/hardhat-lg.jpg | Used to protect the head from injury by falling objects, impact with other objects, debris, and electric shock.  For exposures to voltages to 2,200 volts. The hard hat must comply with ANSI Standard Z89.1, Class G.  For exposures to voltages up to 20,000 volts, the hard hat must comply with ANSI Standard Z89.1, Class E.  Class C hardhats are considered conductive and must not be used when there are electrical hazards. |

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| Body Protection | **Tyvek suit**  **http://www.disposable-garments.com/images/tyvek_coveralls1.jpg**  **Rubber chemical resistant suit**  Chemtex Rubber Suit Bib Overall  **Boot/shoe covers**  Tychem QC Boot Covers  **Sleeve covers**  http://www.digiworkshop.com/newsafety/Tyvek sleeve.jpg  **Reflective vest**  http://www.mechbgon.com/visibility/class3vest.jpg  **Fluorescent Orange**    **Fall Protection Body Harness**  http://www.infolink.com.au/odin/images/219957/DBI-SALA-introduce-their-new-Miner-s-fall-protection-range.jpg | Tyvek suits should be worn when light particle protection and/or light splash protection is needed.  A chemical resistant suit should be used when splashes are likely to occur.  Boot/shoe covers should be used as additional protection for feet.  Sleeve covers should be used when additional protection is needed for arms.  Reflective vests required when working on or near roadways. Must meet the ANSI 107 standard. Min. Class 2 required.  Fluorescent orange cap and vest as required according to the hazard assessment. For more requirements see this document, [Fluorescent orange requirements](http://docs.google.com/viewer?a=v&q=cache:E-PIaj0cP-cJ:www.portal.state.pa.us/portal/server.pt/document/701169/orangerequire_pdf+fluorescent+orange+requirements&hl=en&gl=us&pid=bl&srcid=ADGEEShNPnpMnQBjzKJl0P5Vo2yanz4F7rQ9HJPw3Su9agqPpRxNfcBG3ee6ZzXFkZP7GD8KGmZXReOkNAmoI2RxHsV4yOzqgj_vj3WzW3HLy2iweYEKiom5sk7UM-U8cMfeoEvBliQM&sig=AHIEtbQOxLEbwsh8u5FrP8eHhe-vK5d3Wg)  Fall protection body harnesses, lanyards, and a secure anchor point may be needed when working at heights without guardrails. |

**Appendix F**

**Welding Operation Shading Guide**

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| ***Welding Operation*** | ***Shade Number*** |
| Shielded metal-arc welding – (1/16, 3/32, 1/8, 5/32-inch electrodes) | 10 |
| Gas-Shielded arc welding (nonferrous) – (1/16, 3/32, 1/8, 5/32 – inch electrodes) | 11 |
| Gas-shielded arc welding (ferrous) – (1/16-, 3/32-, 1/8-, 5/32-inch electrodes) | 12 |
| Shielded metal-arc welding: 3/16, 7/32, ¼ inch electrodes | 12 |
| Shielded metal-arc welding: 5/16, 3/8 inch electrodes | 14 |
| Atomic Hydrogen Welding | 10-14 |
| Carbon Arc Welding | 14 |
| Soldering | 2 |
| Torch brazing | 3 or 4 |
| Light cutting, up to 1 inch | 3 or 4 |
| Medium cutting, 1 inch to 6 inches | 4 or 5 |
| Heavy cutting, 6 inches and over | 5 or 6 |
| Gas welding (light) up to 1/8 inch | 4 or 5 |
| Gas welding (medium) 1/8 inch to ½ inch | 5 or 6 |
| Gas welding (heavy) ½ inch and over | 6 or 8 |

\* As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.

**Appendix G**

**Requirements for Purchase of Prescription Safety Glasses and Safety Shoes**

The University has opted to contribute toward the cost of purchasing prescription safety glasses and safety shoes worn by employees. The following requirements must be followed by all University work units and campuses.

**Eligibility:**

* A PPE Hazard Assessment must be completed which indicates the need for prescription safety glasses and/or safety shoes in order for an employee to be eligible for a payment contribution.
* Only full-time employees (fixed or standing term) are eligible for a payment contribution. All other personnel, including part-time/wage employees, must purchase prescription safety glasses and safety shoes at their own cost.

**Selection Criteria:**

* Safety shoes must be steel toed or composite toed (or equivalent) boots or shoes which meet ANSI Z41 or ASTM F2413-05 standards.
* Prescription safety glasses must have impact resistant lenses/frames, permanently attached side shields, and meet ANSI standard Z87.1.

**General Purchasing Criteria:**

* Work units and campuses may not deviate from the dollar amount or selection criteria stated within this document.
* The purchase of safety shoes and prescription safety glasses will be made on the employee’s own time outside of normal working hours.
* Supervisory approval must be obtained before safety shoes and prescription safety glasses are obtained by employees.

**Safety Shoe Purchasing Procedure:**

* The work unit or campus will pay 50% of the cost up to a maximum contribution of $75 for safety shoes. This contribution will be available to eligible employees on an annual basis.
* Eligible employees may purchase safety shoes from any vendor as long as the selection criteria are met. Once the shoes are purchased, employees are responsible for submitting their receipt to their immediate supervisor. The supervisor is responsible for assuring shoes comply with the selection criteria for safety shoes. The employee will then be reimbursed for the appropriate amount via direct deposit into their bank account.
* Work units and campuses may also opt to pre-arrange safety shoe purchases through direct billing by a vendor. In this case, employees would only be responsible for paying their portion of the cost at the time of purchase.

**Prescription Safety Glasses Purchasing Procedure:**

* The work unit or campus will pay for the cost of prescription safety glasses as defined below. This contribution will be available to eligible employees once every two years.
  + Costs covered by the University will include frames, side shields, lens (either single vision, bifocal, or progressive), and anti-scratch coating.
  + Employees are responsible for paying for any additional eyewear features which are authorized by the University. Examples of such features may include upgraded frames, upgraded lens, or additional coatings.
* Eligible employees will obtain prescription safety glasses from a vendor which has been designated by the University.
* The designated vendor maintains a provider network of opticians throughout the state where the glasses can be obtained.
* The employee is responsible for obtaining a valid prescription prior to the purchase of prescription safety glasses.
* The employee must also obtain a “prescription safety glasses approval form” from their immediate supervisor.
* Both the prescription and the approval form must be presented to the provider by the employee.
* The vendor will directly bill the work unit or campus for the cost of the glasses.
* The provider will bill the employee for any eyewear features not covered by the University at the time of purchase.

**Replacement Criteria:**

* Employees who lose their prescription safety glasses or safety shoes are responsible for obtaining replacement items at their own cost.
* Prescription safety glasses or safety shoes which are damaged due to work activities will be repaired or replaced by the University at no cost to the employee.
* Prescription safety glasses or safety shoes which are damaged due to non-work activities will be repaired or replaced by the employee at their own cost.

**Alternative Forms of PPE:**

* The frequency of use may need to be taken into account by the unit or campus when approving or denying the purchase of prescription safety glasses or safety shoes. A variety of alternatives to prescription safety glasses and safety shoes exist. Examples of these items are as follows:
  + Protective overshoes and removable caps can be used instead of safety shoes.
  + Properly sized safety glasses or goggles can be worn over prescription glasses.
* The work unit or campus is responsible for the cost of these alternative forms of PPE when their use is determined to be appropriate.
* EHS is available to provide consultation to work units and campuses regarding the appropriate use of these items.

**The above requirements are subject to change as necessary.**