

Personal Protective Equipment Program



1. INTRODUCTION

The purpose of the Personal Protective Equipment Program is to provide a barrier of safety between staff, faculty, students, and visitors and certain hazards that they may encounter in the workplace. Personal protective equipment (PPE) is not a substitute for good engineering or administrative controls and can only supplement safe work practices. Personal protective equipment will be provided, used, and maintained when it has been determined that its use is required and such use will lessen the likelihood of occupational injury and/or illness.

2. RESPONSIBILITIES

Texas A&M University-Texarkana has relatively few hazardous conditions. The Environmental, Health & Safety (EHS) office is responsible for the implementation of the Personal Protective Equipment Program. Individual departments will be responsible for the purchase of PPE for their employee(s). The EHS office will provide guidance in the selection and purchase of appropriate PPE.

3. ENVIRONMENTAL, HEALTH & SAFETY OFFICE

The EHS office is responsible for the development, implementation, and administration of the PPE Program. This involves:

- 3.1 Conducting workplace hazard assessments to determine where and when the use of PPE is necessary
- 3.2 Conducting periodic workplace reassessments as the university grows and more hazards are introduced
- 3.3 Maintaining hazard assessment records
- 3.4 Providing training to staff on the proper use, care, and cleaning of PPE
- 3.5 Providing guidance to area supervisors in the selection and purchase of approved PPE
- 3.6 Periodically evaluating the suitability of selected PPE
- 3.7 Reviewing, updating, and evaluating the overall effectiveness of the PPE Program

4. EMPLOYEES

Employees are responsible for the following requirements of the PPE Program:

- 4.1 Wearing PPE when it has been determined the need exists
- 4.2 Attending training sessions on the use of PPE
- 4.3 Caring for, cleaning, and maintaining PPE as required
- 4.4 Informing their immediate supervisor of the need to repair or replace PPE

5. HAZARD ASSESSMENT

The Environmental, Health & Safety Officer (EHSO) shall conduct a walk-through survey of all work areas at A&M-Texarkana once a year, or as needed, to determine sources of hazards. Each survey shall be documented by showing the time and date of the survey, the person completing the survey, and the potential hazards that were located. Once the survey is complete, the EHSO shall determine if the present PPE is adequate or if new PPE or additional equipment is needed to ensure a level of protection that meets or exceeds the minimum requirements to protect the employee from the hazard. PPE that will protect against the highest level of hazard will be provided or recommended for purchase.

6. PROTECTIVE DEVICE SELECTION

Personal protective devices will be selected and purchased with an emphasis on working in conjunction with existing engineering controls, not as a sole provider of protection against hazards. PPE will be selected based on the evaluation of the hazard, what kind of protection is available for that particular hazard, and what exactly the protective device can do. All PPE will be of good quality and will meet or exceed the standards set by the American National Standards Institute (ANSI) or the National Institute of Occupational Safety and Health (NIOSH). In order to facilitate its use, careful consideration will be given to the comfort and fit of selected PPE.

7. EYE AND FACE PROTECTION

Many eye injuries can be avoided with the use of proper eye protection. All persons who may be in an area where they are exposed to eye hazards will wear approved eye and/or face protection. This shall include staff, faculty, students, and visitors.

- 7.1 Any person who wears prescription glasses shall be provided with appropriate eye protection to wear over them
- 7.2 Side protectors shall be used when there is a hazard from flying objects
- 7.3 When there is a risk of hazardous chemical splash, face shields will be worn with safety goggles under the face shield
- 7.4 Emergency eyewash facilities will be provided in all areas where there is a risk of hazardous chemical splash. Portable eyewashes can be used if they are ANSI approved
- 7.5 Eye and face protection shall conform to the following performance standards:
 - 7.5.1 Provide adequate protection against the particular hazards for which they are designed
 - 7.5.2 Fit properly and offer the least possible resistance to movement and cause minimal discomfort while in use
 - 7.5.3 Be durable and easily cleaned or disinfected by the wearer
 - 7.5.4 Be clearly marked to identify the manufacturer

8. HAND PROTECTION

The use of hand protection is required when employees are exposed to hazards such as cuts, abrasions, punctures, burns, temperature extremes, or contact with any type of hazardous chemical. Gloves are selected based on the material being handled, the particular hazard involved, and their suitability for the operation being conducted. There is no one type of glove that is suitable for all situations or hazards.

When dealing with hazardous chemicals, it is best to know exactly what type of chemical substance you are dealing with. Safety Data Sheets usually provide the type of glove needed for handling a particular chemical. Hazardous chemicals eventually permeate all glove materials. However, gloves can be used safely for a limited time if specific use and other characteristics are known. The EHS Office will provide assistance in determining the specific type of glove material that should be worn when using a particular hazardous chemical.

9. FOOT PROTECTION

When any employee is working in an area where there is a danger of falling or rolling objects, objects piercing the soles of shoes, or where feet are exposed to electrical hazards the employee shall wear protective footwear. Grounds crew and maintenance workers are required to wear closed toe shoes.

10. HEAD PROTECTION

Safety hats and caps are used to protect the head from injury due to falling objects, impact with other objects, debris, rain, and electric shock. Head protection is required when working in any area where construction is taking place or where one of the above hazards exists.

Bump caps/skull guards are made of lightweight material and can be worn in areas where there is a risk of lacerations due to sharp objects but will not be worn as a substitute for a hard hat as they do not provide protection against falling objects.

11. HEARING PROTECTION

Protection of hearing is a very important preventative measure. In order to reduce occupational hearing loss, employees who are exposed to noise at or above 85 decibels (dB) will be included in a formal hearing conservation program. Hearing protection devices are the first line of defense against noise in environments where engineering controls have not reduced employee exposure to safe levels. All employees, students, and visitors shall wear ear protection when going through any area marked High Noise Area.

Personnel will be provided with hearing protection when performing any task where noise levels meet or exceed 85 dB.

12. PPE IN LABORATORIES

PPE is required in laboratories to prevent the risk of exposure to employees, students, and visitors by contact, inhalation, or ingestion of an infectious agent or a toxic substance. All laboratory faculty members shall be properly trained in all aspects of lab safety. Faculty members shall in turn be responsible for training all students working in the lab on proper lab safety procedures and the use and care of lab PPE. More detailed information can be found in the A&M-Texarkana Laboratory Safety Program Manual.

12.1 Laboratory Coats

Lab coats are used to provide some degree of body protection against hazardous chemical spills as well as to protect street clothes from damage. The specific types of chemicals utilized in each lab will dictate what type of lab coat should be selected. The lab supervisor shall be responsible for the selection of lab coats that will provide the most protection in relation to the type of chemical being used.

12.2 Foot Protection

In most laboratory settings, comfortable tennis shoes or nursing shoes can generally be worn. Sandals or other open toed shoes are never permitted in the lab due to possible exposure to hazardous chemicals or toxic materials.

12.3 Face Shields and Eye Protection

Goggles and face shields shall be worn in the lab whenever students or faculty are working with any hazardous chemical that may create a splash hazard, an extreme temperature hazard, or a reactivity hazard.

12.4 Gloves

Gloves should always be worn in the lab when performing experiments using hazardous chemical substances, handling infectious materials, or when using very hot or cold materials.

13. CLEANING AND MAINTENANCE

PPE must be kept clean and properly maintained at all times. Cleaning is especially important in the care of face and eye protection where dirty or fogged lenses could impair vision. PPE shall be cleaned, inspected, and maintained on a regular basis to ensure the PPE remains an effective tool against hazards. PPE shall not be shared without first being cleaned and sanitized. If possible, PPE will be given to each employee for individual use. PPE that has been contaminated in such a way that it cannot be reused shall be disposed of in the appropriate manner.

14. TRAINING

All employees and students who are required to wear some type of PPE shall receive the appropriate training in the use thereof. Periodic retraining shall be provided as well as training for any new type of PPE introduced at A&M-Texarkana. Training shall include:

14.1 When PPE is necessary

14.2 What PPE is necessary

14.3 How to properly don, adjust, and wear PPE

14.4 The proper care, maintenance, and useful life of PPE, and its proper disposal

14.5 The limitations of PPE

14.6 Employees shall demonstrate that they understand the components of the PPE Program and how to use PPE properly

APPENDIX A

EYE AND FACE PROTECTION GUIDELINES

1. Safety Glasses – Safety glasses are made with tempered glass or hard plastic lenses with safety frames. This type of eye protection is used when there is a hazard of moderate impacts from such things as carpentry work, grinding, sawing, etc.
2. Single Lens Goggles – Goggles are made with vinyl frames and pliable body design and provide very good eye protection from many hazards. Goggles can be purchased with clear or tinted lenses and provide similar protection as safety glasses. Goggles can be worn over prescription lenses to heighten protection and ensure proper vision.
3. Welding/Chipping Goggles – Both of these goggles are made with rigid or soft frames to accommodate double lenses.
 - 3.1 Welding goggles – Provide protection from sparks, splashing metal, and harmful light rays. These goggles are made with impact resistant lenses and graduated shades of filtration.
 - 3.2 Chipping goggles – Provide protection from flying particles. These goggles have dual protective eyecups that house impact resistant clear lenses with individual cover plates.
4. Face Shields – Face shields are used when protection of the entire face is necessary to guard against hazards such as chemical splashes, flying objects and metal sparks. Face shields generally have adjustable headgear and the faceplate is made of tinted/transparent acetate or polycarbonate material. Face shields are available in various sizes, tensile strength, impact/ heat resistance and light ray filtering capacity. Safety glasses or goggles MUST be worn under a face shield.
5. Welding Shields – Welding shields consist of vulcanized fiber or glass fiber body assemblies, adjustable headgear or cap attachment and a filter and cover plate holder. These shields protect a workers' eyes and face from infrared or radiant light when soldering or welding, as well as flying sparks and metal spatter encountered during welding and cutting operations.

Eye and Face Protection Selection Chart

Source	Assessment of Hazard	Protection
IMPACT-Chipping, grinding, machining, drilling, chiseling, riveting, sanding, masonry work, sawing, etc.	Flying fragments, objects, large chips, particles, sand and dirt	Spectacles with side protection, goggles, face shields. For severe exposure use face shield over main eye protection.
CHEMICALS-Acid and chemical handling, degreasing, plating	Splash; Irritating mists	Goggles. For severe exposure, use face shield over primary protection. Special purpose goggles.
DUST-Woodworking, buffing, general dusty conditions	Nuisance dust	Goggles, disposable respirator/particle mask.
HEAT-Furnace operation and arc welding	Hot sparks	Face shield over spectacles with side shield

APPENDIX B

HEAD PROTECTION GUIDELINES

Hard hats or bump caps will be provided to all persons who work in or visit areas where head protection is needed. Hard hats are designed to protect workers from hazards associated with falling or flying objects, bumping the head against objects, and certain electrical hazards. These protective hats are made of a shell and an interior suspension lining. Bump caps or skull guards are constructed of lightweight materials and provide minimal protection against hazards when working in congested areas. Hard hats and bump caps should be made of nonconductive fire and water resistant materials.

Hard Hat Types: The two types of hard hats are defined by the area of the head that is protected.

- Type I offers protection to the top of the head and is commonly used in the United States
- Type II offers protection to the top and sides of the head and is commonly used in Europe

Hard Hat Classes: The three classes are based on the level of electrical hazard protection provided:

- Class G (General) -- These hats provide impact and penetration protection and provide electrical protection from low voltage conductors up to 2,200 volts. These hats are used in mining, construction and manufacturing.
- Class E (Electrical) -- These hats provide impact and penetration protection as well as electrical protection from high voltage conductors up to 20,000 volts. Electrical workers mainly use these hats.
- Class C (Conductive) -- These hats provide impact and penetration resistance. They are lightweight and usually made of aluminum, which conducts electricity. They should never be worn in areas where there are electrical hazards. These hats are worn in certain construction, manufacturing and refinery areas where there is a possibility of bumping your head against fixed objects, but no electrical hazards.

Hard hats must be replaced if they show signs of damage (dents, cracks, penetration, or fatigue due to rough treatment). It is essential to inspect hard hats for damage and signs of fatigue each time they are used. In addition to visual inspections, another way to test a hard hat is to grasp it in two hands and apply force by squeezing the hat. If you hear creaking or other unusual sounds, it is time to replace the hard hat.

APPENDIX C

FOOT PROTECTION GUIDELINES

Affected employees shall wear protective footwear when working in areas where there is a danger of foot injury due to falling or rolling objects, objects piercing the sole of shoes, or where employee's feet are exposed to electrical hazards.

Footwear that meets established safety standards will have an American National Standards Institute (ANSI) label on the inside of the shoe. Safety shoes and boots provide both impact and compression protection. When needed, safety shoes that provide puncture protection can be obtained. There are numerous kinds of foot protection offering different types of protection. When selecting foot protection, ensure that the shoe or boot provides all aspects of protection for the various types of hazards that will be encountered.

1. Steel-reinforced safety shoes - These shoes are designed to protect feet from common machinery hazards such as falling or rolling objects, cuts, and punctures. The entire toe and insole are reinforced with steel; while steel, aluminum, or plastic materials protect the instep. Safety shoes are also designed to insulate against temperature extremes and may be equipped with special soles to guard against slip, chemicals, or electrical hazards.
2. Safety boots - Safety boots offer more protection when spark or splash hazards are present. When working with corrosives, caustics, cutting oils, and petroleum products neoprene or nitrile boots are required to prevent penetration. Safety boots can also be obtained for working in areas where there are electrical hazards.

APPENDIX D

HAND PROTECTION GUIDELINES

Hand protection is required when an employee's hands are exposed to hazards such as those from skin absorption of harmful substances, severe cuts or lacerations, severe abrasions, punctures, chemical burns, thermal burns, and harmful temperature extremes. There is no one glove that will provide the right protection in all hazard situations. Gloves should be selected on the type of material being handled or the particular hazard involved and the suitability of the glove for the operation being conducted. Gloves should be replaced periodically based on the frequency of use and permeability to the substance handled. Contaminated gloves should be rinsed off and then carefully removed.

In certain circumstances, it may be more cost effective to regularly change cheaper gloves than to reuse expensive ones, as long as the performance characteristics of the glove are acceptable. The work activity of the employee needs to be determined as to how much hand dexterity is required when performing certain tasks so that a glove that will protect from the hazard, as well as being of a fabric that will allow the employee to have full motion of his hands to perform the required task is provided.

When dealing with chemicals, safety data sheets usually will provide information as to what type of glove is required for handling that particular chemical. Hazardous chemicals eventually permeate all glove materials. This makes determining the glove thickness and permeation rate and time very important. Nitrile gloves are very good for numerous chemicals. They are low cost gloves, which have good physical properties and allow good dexterity. Neoprene gloves are also good for handling numerous chemicals, but are more expensive than nitrile gloves.

The following is a list of common protective gloves and the hazards they can guard against.

1. Disposable gloves - made of lightweight plastic and can guard against mild irritants
2. Fabric gloves - made of cotton or fabric blends and generally used to improve grip when handling slippery objects; used to protect hands from heat or cold
3. Leather gloves - used to guard against injuries from sparks or scraping against rough objects; can also be used in combination with an insulated liner when working with electricity
4. Metal mesh gloves - used to protect hands from accidental cuts and scratches; most commonly used by persons working with cutting tools or sharp instruments
5. Aluminized gloves - made of aluminized fabric and designed to insulate hands from intense heat; commonly used by persons working with molten metals
6. Chemical resistant gloves - may be made of rubber, neoprene, polyvinyl alcohol, vinyl, nitrile, butyl, natural rubber, etc.; protect hands from corrosives, oils and solvents

APPENDIX E

HEARING PROTECTION GUIDELINES

Noise induced hearing loss is a permanent hearing impairment resulting from prolonged exposure to high levels of noise. It is important to practice hearing conservation by using hearing protection to prevent noise induced hearing loss. Hearing protection includes earplugs and earmuffs that are designed to reduce the intensity or loudness of sound.

Hearing protection is **required** when employees are exposed to noise levels of 85 decibels (dB) or greater.

The most popular hearing protection devices are earplugs, which are inserted into the ear canal to provide a seal against the canal walls. Earmuffs enclose the entire external ears inside rigid cups. The inside of the muff cap is lined with acoustic foam and the perimeter of the cup is fitted with a cushion that seals against the head around the ear by the force of the headband. Earplugs and earmuffs are both good hearing loss protection devices.

Hearing protection devices decrease the intensity of sound that reaches the eardrum. They come in two forms: earplugs and earmuffs.

Earplugs are small inserts that fit into the outer ear canal, To be effective they must totally block the ear canal with an airtight seal. They are available in a variety of shapes and sizes to fit individual ear canals and can be custom made. For people who have trouble keeping them in their ear, they can be fitted to a headband. Earplugs must be snugly sealed so the entire circumference of the ear canal is blocked. An improperly fitted, dirty or worn-out plug may not seal and can irritate the ear canal.

Earmuffs fit over the entire outer ear to form an air seal so the entire circumference of the ear canal is blocked, and they are held in place by an adjustable band. Earmuffs will not seal around eyeglasses or long hair, and the adjustable headband tension must be sufficient to hold earmuffs firmly around the ear.

Properly fitted earplugs or muffs reduce noise 15 to 30 dB. The better earplugs and muffs are approximately equal in sound reduction, although earplugs are better for low frequency noise and earmuffs for high frequency noise. Simultaneous use of earplugs and muffs usually adds 10 to 15 dB more protection than either used alone. Combined use should be considered when noise exceeds 105 dB.

Personal music players are not a form of hearing protection. According to the National Institute on Deafness and Other Communication Disorders, frequent and extended exposure to sound pressure in excess of 85 dB can cause long-term hearing loss. Many MP3 users listen at much higher levels - often without realizing the risk. Some personal music players can reach more than 115 decibels, representing significant potential for damage in a matter of a few minutes.