



Department of the Air Force
HQ AEDC (AFMC)
Arnold AFB, TN 37389

Safety, Health, and Environmental Standard

Title: PERSONAL PROTECTIVE EQUIPMENT (PPE)

Standard No.: F2

Effective Date: 09/23/2011

The provisions and requirements of this standard are mandatory for use by all personnel engaged in work tasks necessary to fulfill the AEDC mission. Please contact your safety, industrial health and/or environmental representative for clarification or questions regarding this standard.

Approved:

Contractor/ATA Director
Safety and Health Group

Air Force Functional Chief



Safety, Health and Environmental Standard

PERSONAL PROTECTIVE EQUIPMENT

1.0 INTRODUCTION/SCOPE/APPLICABILITY

- 1.1 Introduction – This standard is safety and health guidance for personal protective equipment (PPE) use, purchase, care, inspection, maintenance and replacement at AEDC.
- 1.2 Scope – This standard covers routine Personal Protective Equipment (PPE) selection, use, and care. It does not cover specialized PPE such as electrical safety equipment or special purpose clothing for clean rooms, which have more stringent PPE guidelines in other standards. If two different AEDC Safety, Health and Environmental (SHE) Standards conflict, the more stringent standard shall be followed.
- 1.3 Applicability – This standard applies to all civilian contractors who perform work on any AEDC-owned or leased property at Arnold Air Force Base, TN.

2.0 BASIC HAZARDS AND HUMAN FACTORS

- 2.1 Hazards are conditions that if left unchecked have the potential to cause injury to people, damage to property and/or mission degradation.
- 2.1.1 Hazards should be engineered out, guarded against or isolated whenever possible before considering the use of PPE. PPE devices alone should not be solely relied upon to provide protection against hazards, but should be used in conjunction with engineering controls, guards, and safe work practices.
- 2.1.2 The employer and supervisors must vigilantly assess the work environment to determine if hazards are present, or are likely to be present, which necessitates the use of PPE. If such hazards are present, or likely to be present, the supervisor must ensure that the appropriate PPE has been identified and is available prior to placing workers in contact with those hazards.
- 2.1.3 When a potential hazard is identified, PPE must be matched to the hazard. This is accomplished through workplace hazard analysis and Job Safety Analysis (JSA). AEDC SHE Standard A10 and 29 CFR 1910.132(d) explain the process.
- 2.2 The benefits of mandatory PPE to protect workers from hazards can easily be undermined by human factors. Awareness of these potential human conditions and their impact on worker behavior is essential to successful mishap prevention. Unhealthy emotions, job or domestic pressures, distractions, limited job knowledge, hurrying or feeling rushed can contribute to an unsafe attitudes. Physical factors such as fatigue, poor physical strength or mobility, or effects of medication, alcohol or illegal drugs can lead to behaviors that result in a serious mishap.

3.0 DEFINITIONS

Affected employee – An employee whose job requires him/her to work in an area where he/she may be exposed to a hazard even if not directly assigned to the work area, task or process creating the hazard.

Construction Area – Includes but is not limited to, work sites of new building/system erection, building/system demolition, building/system area and room renovation, road work, and excavation/trenching areas throughout AEDC. The construction area may be limited to a small area within an existing facility such as room renovation or system repair.

Custodial Organization - The organization exercising control over the work area or jobsite; normally the Master Work Permit Issuing Official's organization.

Industrial Area – Includes but is not limited to all shops, plant facilities, indoor/outdoor test cells and test support areas, maintenance and fabrication shops, and warehousing facilities throughout AEDC.

Operating Contractor – A long-term contractor directly accountable to the Air Force for the AEDC mission; term used to identify the AEDC Operation, Maintenance, Information Management and Support Contractor.

Outside Contractor/Subcontractor – An organization employed by a contractor or the Air Force to do construction, maintenance, repair or other work at AEDC. There is no employment relationship, control or supervision of the subcontractor's employees by AEDC contractors. Also referred to as the construction contractor.

PPE Usage Review Team – A team of individuals from across AEDC (normally five from the AEDC Contractor and one from AEDC/SE) identified to review any areas where appropriate use of PPE is in question. Questions about PPE should be submitted to the Operating Contractor Safety and Health Group (SHG) who will evaluate and forward legitimate questions to the review team.

Visitor – Non-AEDC individual in an area who is not performing work and who is continually escorted.

4.0 REQUIREMENTS AND RESPONSIBILITIES

4.1. General Requirements:

- 4.1.1 Appropriate personal protective equipment (PPE) shall be worn by workers and visitors in all areas identified as PPE required.
- 4.1.2 As a minimum, short sleeve shirt, long pants, hard hat, protective eyewear, and protective footwear are required in all industrial or construction areas unless otherwise noted in this standard. (See Paragraph 4.1.8.) Requests for exemption from the minimum PPE requirements must be approved by the PPE Usage Review Team and coordinated with the Operating Contractor Safety and Health Group (SHG).
NOTE: Long pants are pants that fit over the top of the footwear.
- 4.1.3 Additional work environment or task specific PPE requirements will be determined by the custodial organization in conjunction with Contractor Safety and Health Group using establish standards, hazard analysis, and Job Safety Analysis (JSA). Material Safety Data Sheets (MSDS) typically provide chemical specific PPE guidance as well.
- 4.1.4 The organization responsible for the area or operation shall provide the personal protective equipment to workers and visitors.
- 4.1.5 Skin protective treatments such as insect repellent, sunscreen, and/or poisonous plant barriers are considered required PPE when deemed appropriate by job safety analysis (JSA) and supplied by the employer. Workers who have a verifiable medical condition rendering them unable to use such skin treatments are exempt; alternate means of protection must be determined on a case-by-case base.
- 4.1.6 Procurement of PPE not normally stocked at AEDC must be approved for the intended use by SHG.
NOTE: Operating Contractor Logistics Support can provide AEDC stock numbers for currently stocked PPE.
- 4.1.7 Standardized signs stating the PPE requirements shall be posted at the entrances to PPE required areas.
- 4.1.8 Public Affairs (PA)-escorted tour groups are not required to wear hard hats, safety glasses or hearing protection in AEDC areas where PA has previously coordinated that group's visit and has ensured that industrial work or testing is not in progress at the time of the tour. If testing or other dangerous activities, such as overhead crane operations, are in progress the tour leader will eliminate that area from the tour. Additionally, PA will ensure that everyone on the tour wears shoes that cover the toes.

4.2 Eye and Face Protection:

- 4.2.1 Eye and face protection will be appropriate for the hazard(s) involved. Examples of appropriate eye and face protection include wearing goggles to shield eyes from loose debris when the worker is positioned in or near a hazard area, donning a face shield over the safety glasses/goggles during grinding operations, and only wearing clear, indoor/outdoor or amber safety glasses when inside buildings. (See Annex A.)
- 4.2.2 Protective eyewear shall be worn at all times by personnel entering industrial/construction areas or engaged in activities that pose eye injury hazards.
- 4.2.3 The custodial organization shall provide protective eyewear on a loan basis at the entrance to eye hazard areas.
- 4.2.4 Protective eyewear must meet or exceed American National Safety Institute (ANSI) Z87 standards and must be designed for the type of application for which it is being used. (See Annex A.) Eye and face protection.
- 4.2.5 Must have the manufacturer's identification and the original "Z87" indication clearly marked on the equipment.
- 4.2.6 Protective eyewear must include side protection.
- 4.2.7 Affected employees who have lost the sight of one eye, or have had cataract surgery, or are legally blind in one eye must wear eye protection at all times.

4.2.9 Inspection and Care of Eye and Face Protection:

- 4.2.9.1 Clean and inspect eye and face protection daily to ensure it is safe and effective. Additionally, manufacturer's recommendations for cleaning, care, maintenance and storage of eye and face protection will be followed.
- 4.2.9.2 Replace scratched, cracked, or pitted, eye and face protection or when broken parts are present.

4.3 Protective Clothing:

- 4.3.1 Appropriate protective clothing, must be worn by workers and visitors in areas as identified by workplace hazard analysis.
- 4.3.2 The custodial organization will ensure that personal protective clothing is of a safe design and construction for the work to be performed.
- 4.3.3 Special use protective clothing may only be issued to those persons exposed to the hazards.

4.3.5 Inspection and Care of Protective Clothing:

- 4.3.5.1 Protective clothing shall be discarded when cut, torn and/or becomes non-serviceable. Protective clothing used when handling or working around poisonous plants will be discarded after such use.
- 4.3.5.2 Disposable and non-disposable protective clothing which has been contaminated to the degree that laundering is not practical shall be handled as follows:
 - 4.3.5.2.1 Protective clothing contaminated or saturated with sodium potassium alloy (NaK), borane fuels, hydrocarbon fuels, flammable liquids, solvents, toxic substances, or corrosives (acid or caustic) shall be disposed of in accordance with SHE Standard E18 Managing Wastes Containing Chemical or Petroleum Products.
 - 4.3.5.2.2 Protective clothing contaminated with a radioactive material shall be placed in a plastic bag, sealed, and tagged, and AEDC Contractor Safety and Health Group contacted immediately for proper and special decontamination or disposal procedures.
 - 4.3.5.2.3 Protective clothing contaminated with blood borne pathogens must be placed in a plastic Bio-Hazard bag, sealed and tagged for proper disposal. Contact the Dispensary for proper disposal.
 - 4.3.5.2.4 Personal protective clothing contaminated with asbestos shall be disposed of according to CFR 29 1910.1001.
 - 4.3.5.2.5 Personal protective clothing contaminated with materials containing lead shall be disposed of according to CFR 29 1925.1025(g).

4.4 Hand Protection:

- 4.4.1 Gloves shall be used for hand protection against hazards when other controls are not possible.
- 4.4.2 Gloves shall not be worn while working around moving machinery.
- 4.4.3 Employees with dermatitis should use only new gloves.

4.4.4 Glove Selection:

Use of appropriate gloves for the task being performed shall be identified on the JSA. (See Annex B.)

NOTE: SHG may be contacted for advice on glove selection when further guidance is needed.

- 4.4.4.1 Leather or cut-resistant gloves shall be used for heavy material handling and where sharp edges, pointed objects, or splinters of metal/wood, glass, or heavy abrasion hazards are present.
- 4.4.4.2 Leather gloves shall be used for protection against heat or flames.
- 4.4.4.3 Rubber or plastic coated cloth gloves shall be used to handle wet materials.
- 4.4.4.4 Chemical-resistant gloves shall be used for protection against chemicals. Chemical-resistant gloves must be the appropriate type and design for the task and chemical being handled.

4.4.5 Inspection and Care of Gloves:

- 4.4.5.1 Gloves will be inspected and/or disposed of in the same manner as protective clothing. (See Section 4.3.5.)
- 4.4.5.2 Rubber, plastic or coated gloves shall be discarded when peeling, cracking, bubbling, or discoloration around the fingers is found.
- 4.4.5.3 Personal gloves that become contaminated during work will be disposed of in the same manner as company-owned gloves.

4.4.6 Barrier Creams:

- 4.4.6.1 Barrier creams (sometimes called skin protective compounds) should be used only if hazards cannot be controlled and when gloves cannot be used due to poor grip or feel, etc. Barrier creams provide less effective protection than gloves. Barrier creams are available for: poison ivy/oak, sun exposure, abrasion and toxic dusts, chemicals that dissolve in water and chemicals that dissolve in oil.
- 4.4.6.2 Barrier creams do not bond to dirty skin; therefore, hands and arms must be washed thoroughly before applying.
- 4.4.6.3 Barrier creams should be washed off with soap and water before eating or smoking and at the end of the day, and should be reapplied as necessary.

4.5 Head Protection

- 4.5.1 Hard hats are required in all industrial and construction areas at all times with the following exceptions:
 - 4.5.1.1 Break rooms, restrooms, lunch rooms and vending machine areas; control rooms and labs; flightline areas designated "No Hard Hat;" office areas; parking lots, roadways, and sidewalks are exempt from the hard hat requirement when no overhead hazards exist. Hard hats are required when traversing an industrial area even if the start and/or end points of travel are exempt, such as from a parking lot or to the break room.
 - 4.5.1.2 Hard hats may be temporarily removed during periods when no industrial work is being performed and no head injury hazards exists such as morning stretching exercises, presentations, or toolbox meetings. In addition, there are cases where an employee's immediate task warrants temporary removal of the hard hat. In such cases, the job safety analysis (JSA) must identify the risks involved as well as reflect the necessary safety measures.
- 4.5.2 Hard hats must conform to the requirements of ANSI Z89.1 requirements for Industrial Head Protection.
- 4.5.3 Procurement for head protection will be made through the base supply system. Requisitions for head protection not normally stocked through base supply system must be approved by Contractor Safety and Health Group.
- 4.5.4 Hard hats worn with welding hoods must be compatible with the hood without alteration to either the hood or the hard hat.
- 4.5.5 Hard hats shall be marked and worn according to manufacturer/employer's instructions. Hard hats may not be painted, drilled, modified and/or provided with unauthorized attachments.
- 4.5.6 Bicycle helmets are required to be worn while riding a bicycle on AEDC. Hardhats are not a substitute for bicycle helmets and shall not be worn as such.
 - 4.5.6.1 All bicycle helmets must meet 16 CFR Part 1203, *Safety Standard for Bicycle Helmets*.
 - 4.5.6.2 Bicycle helmets must be fitted and secured by the user according to the manufacturer's instructions.
- 4.5.7 Inspection and Care of Head Protection:**
 - 4.5.7.1 Hard hats and bicycle helmets must be cleaned according to manufacturer's recommendations.
 - 4.5.7.2 In lieu of manufacture's recommendations, hard hats and bicycle helmets shall be cleaned regularly by the user with warm water and a mild soap solution then rinsed with warm water and dried. Hard hats and bicycle helmets must never be cleaned with organic solvents.
 - 4.5.7.3 Hard hats/bicycle helmets and their components should be replaced and/or removed from service according to manufacturer's recommendations.
 - 4.5.7.4 If either the shell or suspension unit of a hard hat or bicycle helmet shows evidence of cracking, tearing, fraying or any other sign of deterioration, it must be replaced.
 - 4.5.7.5 If a hard hat or bicycle helmet is subjected to damage by a falling object, mishap or accident, it should be removed from service, inspected and/or replaced. Replace any hard hat that has withstood impact or penetration.
 - 4.5.7.6 In lieu of manufacturer's recommendations, hard hats should be replaced after five years from placement into service (a hard hat is considered placed into service once it has been removed from the manufacturer's packaging and/or assembled and worn).

4.6 Foot Protection

- 4.6.1 Safety-rated work shoes or boots are required in all industrial and construction areas.
 - 4.6.1.1 Shoes or boots must cover the wearer's foot, heel, and toes, provide protection to the foot from injury if struck against an object, and provide good traction.
 - 4.6.1.2 Shoes or boots shall be of a sturdy design intended for use in an industrial or construction environment by the manufacturer.
 - 4.6.1.3 Footwear that exposes the foot or toes to injury, such as open-toe, slingbacks, sandals, flip-flops or high heels, is prohibited in industrial, construction, and all other foot hazard areas at all times.
- 4.6.2 Safety-rated protective footwear is required when working in areas where there is a danger of foot injuries due to falling or rolling objects, or from objects piercing the sole, or any area where feet are exposed to electrical hazards.
 - 4.6.2.1 Protective footwear shall meet ASTM F2413-05 Class 75 Impact and Compression (I/C 75) and Electrical Hazard (EH) standards unless hazards dictate other protection. (See Annex C.)
 - 4.6.2.2 When an employee or visitor is present without protective footwear, all operations that could cause a foot injury to that person shall cease.

4.8 Responsibilities

4.8.1 Management Shall:

- 4.8.1.1 Ensure the workplace is assessed to identify hazards that could cause injury to employees and visitors.
- 4.8.1.2 Verify accomplishment of workplace hazard analysis written documentation. (See AEDC SHE Standard A4 System Safety.)
- 4.8.1.3 Determine the appropriate PPE requirements in each area.
- 4.8.1.4 Maintain an adequate supply of employer furnished PPE.
- 4.8.1.5 Provide appropriate type, size and fit of PPE to the workforce.
- 4.8.1.6 Coordinate PPE requirements with SHG.
- 4.8.1.7 Develop and enforce policies and procedures on PPE availability.
- 4.8.1.8 Enforce proper PPE use.
- 4.8.1.9 Ensure unserviceable PPE is removed from service and replaced.
- 4.8.1.10 Ensure all personnel are trained in the proper selection, wear, and care of the PPE they are required to use.
- 4.8.1.11 Conduct inspections of PPE usage and document results.

4.8.2 Supervisors Shall:

- 4.8.2.1 Evaluate work areas and tasks to determine if conditions require PPE beyond the minimum requirements.
- 4.8.2.2 Ensure all workplace hazards are identified on a continuing basis and all employees are advised of PPE requirements related to the work area and tasks performed.
- 4.8.2.3 Enforce policies on personal protection of employees and/or visitors.
- 4.8.2.4 Monitor operations to ensure employees use the appropriate personal protection for the assigned tasks.
- 4.8.2.5 Maintain an adequate supply of PPE.
- 4.8.2.6 Ensure PPE is of the proper type, size and fit.
- 4.8.2.7 Ensure PPE is kept clean, serviceable and sanitary.
- 4.8.2.8 Remove unserviceable PPE from service immediately.
- 4.8.2.9 Ensure proper PPE signs are posted at each major entry point.
- 4.8.2.10 Approve or disapprove employee prescription safety glasses requests in accordance with employer's policy.
- 4.8.2.11 Approve or disapprove employee protective footwear requests in accordance with employer's policy.
- 4.8.2.12 Ensure personnel receive initial and refresher PPE training.
- 4.8.2.13 Ensure visitors are briefed on work area hazards prior to being exposed to the hazard and the required PPE.

4.8.3 Employees Shall:

- 4.8.3.1 Comply with all policies, procedures, and signage on the use, inspection, care, and repair of PPE.
- 4.8.3.2 Report to work with appropriate PPE and wear it correctly when working in PPE-required areas.
- 4.8.3.3 Make no unauthorized modifications to any PPE.
- 4.8.3.4 Properly clean and maintain all PPE provided.
- 4.8.3.5 Notify supervisor of damaged or unserviceable PPE.
- 4.8.3.6 Complete initial and refresher PPE training as directed.
- 4.8.3.7 Comply with all policies and procedures on the purchase of PPE.

4.8.4 Operating Contractor Safety and Health Group Shall:

- 4.8.4.1 Evaluate work areas to determine if physical conditions or work processes exist which could cause injuries; make recommendations for appropriate PPE selection.
- 4.8.4.2 Coordinate the Operating Contractor prescription safety glasses program.

4.8.5 PPE Usage Review Team Shall:

- 4.8.5.1 Review any areas where appropriate use of PPE is in question.
- 4.8.5.2 Resolve usage issues in a timely manner.

5.0 TRAINING

SHG shall provide each Operating Contractor employee with initial PPE training.

- 5.1 All industrial personnel are required to receive initial and refresher training on the PPE required for assigned duties. This training must comply with OSHA 1910.132(f) and include the following:
 - 5.1.1 Who must use PPE
 - 5.1.2 What type of PPE is necessary
 - 5.1.3 When and where PPE is necessary
 - 5.1.4 How to properly wear and adjust PPE
 - 5.1.5 Proper care, maintenance, useful life, and disposal of PPE
 - 5.1.6 Limitations of PPE
- 5.2 The employer shall ensure PPE training is provided and documented.
- 5.3 Area-specific training shall be provided by supervision with local documentation.
- 5.4 The employer will ensure each affected employee demonstrates an understanding of the training and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.
- 5.5 Retraining/refresher shall be provided as needed. Circumstances where retraining is required include, but are not limited to:
 - 5.5.1 Changes in the workplace that render previous training obsolete
 - 5.5.2 Changes in the type(s) of PPE to be used that render previous training obsolete
 - 5.5.3 Employee behavior that exhibits a lack of PPE knowledge or skill.
- 5.6 The employer shall verify that each affected employee has received and understood the required training through a written certification that contains the name of each employee trained, the date(s) of training, and that identifies the subject of the certification.

6.0 INSPECTIONS/AUDITS

SHG shall conduct random inspections and walk-throughs to ensure compliance with this standard.

7.0 REFERENCES

- AEDC Safety, Health & Environmental Standards
 - A4, System Safety
 - A6, User Subcontractor Safety
 - A10, Job Safety Analysis

This is an uncontrolled copy when printed.

- B3, Control of Hazardous Areas using Safety Signs, Tags, and Barricades
- B4, High Voltage Electrical Work
- B6, Low Voltage Electrical Safety Related Safe Work Practices
- D12, Lasers
- E16, Polychlorinated Biphenyls (PCBs)
- E18, Managing Wastes Containing Chemical or Petroleum Products
- F6, Fall Protection

Air Force Instructions (AFI)

- AFI 91-202, US Air Force Mishap Prevention Program
- AFI 91-207, US Air Force Traffic Safety Program

Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Standard
AFOSH STD 91-501, Air Force Consolidated Occupational Safety Standard

American National Standards Institute (ANSI) Standards

- ANSI Z87.1-2006, Occupational and Educational Personal Eye and Face Protection Devices
- ANSI Z89.1-2009, Industrial Head Protection

ASTM International (ASTM) Standards

- ASTM F2413-05, Standard Specification for Performance Requirements for Foot Protection

Consumer Product Safety Commission (CPSC) Code of Federal Regulations (CFR)

- 16 CFR Part 1203, Safety Standard for Bicycle Helmets

National Fire Protection Association (NFPA)

- NFPA 1999, Standard of Protective Clothing for Emergency Medical Operations, 2008 Edition

Occupational Safety and Health Administration (OSHA) Code of Federal Regulations (CFR)

- 29 CFR 1910 Subpart I, Personal Protective Equipment
 - 1910.132, General Requirements
 - 1910.133, Eye and Face Protection
 - 1910.135, Head Protection
 - 1910.136, Occupational Foot Protection
 - 1910.138, Hand Protection
 - 1910.1001, Asbestos
 - 1910.1025, Lead
- 29 CFR 1926 Subpart E - Personal Protective and Life Saving Equipment
 - 1926.95, Criteria for Personal Protective Equipment
 - 1926.96, Occupational Foot Protection
 - 1926.100, Head Protection
 - 1926.102, Eye and Face Protection

Annexes

- A Minimum Requirements for Eye and Face Protection
- B Glove Usage Matrix
- C Selecting the Proper Safety Shoe

Annex A
Minimum Requirements for Eye and Face Protection

Task	Protection
Acetylene Cutting	Welding goggles with shaded lenses or helmet (Use safety glasses with side shields while goggles are not protecting the eyes or helmet is in the raised position)
Chain Saw Operations	Safety glasses with side protection and mesh face shield or clear/polycarbonate face shield
Chemical Operations	Face shields or chemical splash goggles, or for severe exposures, face shields and chemical splash goggles.
Construction Areas	Safety glasses with side protection
Dusty Operations	Dust goggles
Electrical Maintenance/Repair	See AEDC SHE Std B4, <i>High Voltage Electrical Work</i> , and AEDC SHE Std B6, <i>Low Voltage Electrical Safety Related Safe Work Practices</i>
Grinding/Chipping	Impact-resistant type eye protection goggles/safety glasses with face shields
Industrial Areas	Safety glasses with side protection
Inside a Eye-Hazard Area	Safety glasses with side protection (Outdoor/dark tinted safety glasses are not to be worn when inside buildings)
Laser Operations	Laser spectacles and goggles; see AEDC SHE Std D12, <i>Lasers</i>
Machining	Safety glasses with side protection or goggles
Molten Metals	Safety glasses with side protection and face shield
Soldering Operations	Safety glasses with side protection
Shearing Operations	Safety glasses with side protection
Welding (All Types) (Includes Welding Helpers)	Welding helmet (Use safety glasses with side protection or goggles when helmet is in the raised position.)

1. Only side protection which meets or exceeds American National Safety Institute (ANSI) Z87.1.2003 standards will be used in conjunction with prescription safety glasses.
2. Contact lenses are not considered eye protection and in some cases, such as when personnel are working around chemicals, may make the job more hazardous. Therefore, if contact lenses are worn, appropriate eye protection must also be worn. Contact lenses are not to be worn when using a full-face respirator.

**Annex B
Glove Usage Matrix**

<p align="center">The following are recommended guidelines for the use of selected gloves. These guidelines are not meant to apply to every situation that will arise. Proper use of gloves helps prevent at-risk activities from becoming injuries.</p>											
	Pigskin	Cowhide	Leather Palm	Palm Coated	Mechanic Gripper	Anti-Vibration	Sheepskin TIG Welder	Welder	Cut Resistant	Nitrile*	Viton®*
Carpentry											
Chemical Handling*										Ck MSDS*	Ck MSDS*
Fuel Handling										Ck MSDS*	Ck MSDS*
Glass Cutting & Forming											
Groundskeeping (Weeding, etc.)											
Handling Sharp, Jagged Objects											
Hot Machinery; Engine Parts											
Ironwork											
Janitorial Work											
Machinist Work										Ck MSDS*	Ck MSDS*
Masonry Work											
Mobile Equipment Operation											
Painting	Ck MSDS*	Ck MSDS*	Ck MSDS*	Ck MSDS*	Ck MSDS*					Ck MSDS*	Ck MSDS*
Pipefitting											
Scaffold Erection/Dismantling											
Sheetmetal Work											
Using Hand Tools											
Using Impact Tools; Grinders											
Using Knife/Unprotected Blade											
Welding, Cutting, Burning											
Wiring											
<p><i>* Consult glove compatibility charts and MSDS to ensure the glove material will protect from the specific chemical or for the specific task being performed.</i></p>											
<p align="center">This matrix is to be used only as a guide when selecting appropriate hand protection. Consult with the AEDC Contractor Safety and Health Group for more inclusive information.</p>											

Annex C Selecting the Proper Safety Shoe

Safety shoes must meet the requirements of the ASTM International Standard Specification for Performance Requirements for Foot Protection (ASTM F2413). All ASTM-approved footwear has a protective toe and offers impact and compression protection. But the type and amount of protection is not always the same. Different footwear protects in different ways, and safety shoes carry ratings to identify these differences.

For example, EH-rated footwear provides protection from Electrical Hazards. Select shoes with this feature unless your job specifically requires electric static dissipative footwear.

How do I choose the right footwear?

Check the product's labeling to make sure the footwear will protect from the hazards you face. Checking the labeling inside the shoe rather than on the box will help you ensure that shoes haven't accidentally been placed in the wrong box. Here's how to read the label:

ASTM = ASTM International standard
F2413 = Performance requirement for foot protection
05 = year of the standard (in this example 2005)

C/ = Compression rating/(number)
[This code is more complex than the others. Here's how to read it:
50 = 1,750 pounds
75 = 2,500 pounds
(as shown in this example)]

M = Male footwear (F = Female footwear)

ESD = Electric Static Dissipative (not shown) (Meets ASTM standards for minimizing buildup of static electricity; *should not be worn anywhere EH or conductive footwear is required.*)

I/ = Impact rating/(number)
(75 foot pounds shown; can also be 50)

EH = Electrical Hazard
(helps insulate from electrically energized parts or equipment.) Soles are non-conductive and will provide secondary protection against open circuits of 600 volts or less under dry conditions.

MT/ = Metatarsal (top of the foot) protection rating/(number)
(75 foot pounds in this example – can also be 50)

Additional features defined by the manufacturer:
WP = Waterproof
I = Insulated (Don't confuse with *Impact rating*)
These features are not ASTM-rated and vary by company. In addition, some manufacturers offer heat, oil, and/or puncture-resistant products. *Ask before you buy.*

NOTE: As of March 2005, ASTM F2413 superseded the American National Standards Institute (ANSI) Z41 standard for foot protection. Manufacturers and distributors implemented a "running change" to their inventory from the ANSI Z41 labeled footwear. Because there is no change in the protocol, the ASTM F2413 standard does not require that the change from ANSI to ASTM labeled footwear occur in a specific time period.