

Bauman Machine Inc.

PERSONAL PROTECTIVE EQUIPMENT PROGRAM

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1. Go to <http://www.baumanmachine.com>
2. Under "Downloads" in the left-hand column, click on Icon.
3. Under "Safety Policies" on the right-hand side, click on Personal Protective Equipment (PPE)

PERSONAL PROTECTIVE EQUIPMENT PROGRAM

I. INTRODUCTION

Occupational Safety and Health Administration (OSHA) standard 29 CFR 1910.132 requires employers to assess the workplace to determine whether workplace hazards are present or likely to be present. Where possible, workplace hazards should be eliminated or controlled through engineering controls (e.g., guards, ventilation) and/or administrative controls (e.g., job rotation, work practices). Where engineering and/or administrative controls cannot completely eliminate the hazard, the employer must select and have each affected employee use the types of personal protective equipment (PPE) that will protect against identified hazards. Where PPE is determined to be required, its selection and use must follow the requirements found in 29 CFR 1910.133 through 1910.138.

II. SCOPE

This program applies to the use PPE by any employee of the University of Oklahoma (OU) except the use of respiratory protection, which is covered by the *OU Respiratory Protection Program* and hearing protection, which is covered by the *Hearing Conservation Program*. Information regarding employee use of hearing protection and/or respiratory protection may, however, be included in the hazard assessment and documentation process provided herein.

III. RESPONSIBILITIES

A. Management is responsible for:

1. developing hazard assessment tools and guidance documents for departments and supervisors to assist in complying with the requirements of the regulation and this program;
2. conducting appropriate training for employees and/or supervisors; and
3. monitoring and reviewing this *Personal Protective Equipment Program*.

B. Supervisors are responsible for:

1. eliminating identified hazards where possible through engineering or administrative controls and documenting such controls;
2. where the hazard remains after implementation of engineering and administrative controls, selecting the proper PPE using the personal protective equipment selection guidance and charts in Appendix B;
3. ensuring that employees under their supervision receive information and training on how and when to use the assigned PPE;
4. completing the *Personal Protective Equipment Training Certification* (see Appendix C) for employees who are trained; and
6. ensuring that employees under their supervision properly use assigned PPE and comply with the provisions of this program.

C. Employees are responsible for:

1. being familiar with the operation and the facility to the extent necessary to recognize and report any potential hazards;
2. attending and participating in required training before wearing PPE;
3. wearing, cleaning, storing and maintaining PPE as instructed by their supervisor, manufacturer's recommendations, and/or this program; and
4. reporting hazardous and non-compliance conditions to supervisors.

IV. HAZARD ASSESSMENT

Using the *Workplace Hazard Assessment/Certification Form* to document the hazard assessment, supervisors should initially perform a walk-through survey of all work areas where employees under their direction perform work to identify hazards to which employees may potentially be exposed. Supervisors conducting hazard assessments should obtain information from affected employees and observe work practices tools, equipment, facilities and work practices to determine whether any of the hazards identified in this section are present. Potential hazards or hazardous conditions which should be identified include the following.

A. IMPACT HAZARDS

1. Working with or around sources of motion (e.g., any machinery or processes where any movement of tools, machine components or particles could exist) such as powered tools or machinery
2. Use of powered liquid sprayers, air hammers, compressed air, or working in areas with high air turbulence where particles, fragments or chips may be present
3. Potential for falling objects

B. CUTS/PENETRATION HAZARDS

1. Working with glass, wire, metal, sharp or other materials that can pierce when broken or fragmented
2. Working with or around power tools or equipment

C. PINCH/CRUSH/ROLLOVER HAZARDS

1. Working with or around moving equipment or parts
2. Working with or around rolling equipment
3. Potential for falling objects

D. THERMAL (EXTREME HEAT/COLD) HAZARDS

1. Working with or around sources of high temperatures that could result in burns, eye injury, or ignition of clothing such as ovens/furnaces, steam, etc.
2. Working with or around sources of low temperatures that could result in eye injury or frostbite such as refrigerants or cryogenic materials
3. Working in temperature extremes such as steam tunnels, freezers, extended work outdoors or indoors

E. LIGHT (OPTICAL) HAZARDS

1. Working with or around welding, brazing, torch cutting or other similar activities
2. Working with or around lasers

F. CHEMICAL CONTACT OR VAPOR HAZARDS

1. Potential for chemical or vapor exposures to the eyes
2. Potential for chemical or vapor exposures to the skin
3. Potential for chemical or vapor exposures to the remainder of the body

G. BIOLOGICAL HAZARDS

1. Working with human blood or microorganisms

H. DUST

1. Working in areas where high levels of dust may be generated

I. ELECTRICAL SHOCK HAZARDS

1. Working in areas where high voltage electrical equipment may be present

V. HAZARD RE-ASSESSMENT

A hazard re-assessment must be conducted whenever:

- A. new equipment or processes are introduced to the work area, or
- B. a review of occupational injury and illness records indicates an additional need for PPE.

VI. PERSONAL PROTECTIVE EQUIPMENT SELECTION AND USE

A. Where hazards are identified which may not be controlled through engineering or administrative controls, the supervisor should select and provide appropriate PPE. Guidance information and selection charts are provided in Appendix B. Careful consideration should be given to the level of protection required, fit, comfort, and compatibility of the PPE with other hazards that may be present, and care should be taken to verify that the PPE itself does not pose an additional hazard. Assistance may be obtained from the EHSO whenever needed.

B. The following minimum requirements must be met by all protective devices selected. Protectors shall:

1. provide adequate protection against the particular hazards for which they are designed;
2. be of safe design and construction for the work to be performed;
3. be reasonably comfortable when worn under the designated conditions;
4. fit snugly and not unduly interfere with the movements of the wearer;
5. be durable;
6. be capable of being disinfected;
7. be easily cleanable; and
8. be distinctly marked to facilitate identification of the manufacturer.

C. Required PPE should be provided to employees at no cost (cost to be borne by the department), available in appropriate sizes, and stored near the hazard for convenience.

VII. HAZARD ASSESSMENT CERTIFICATION

Verification that the hazard assessment has been performed must be documented through written certification. After surveying work areas and practices, the supervisor should complete a *Workplace Hazard Assessment/Certification Form* (see Appendix A). These forms should be made available to employees and a copy should be submitted to the management.

VIII. TRAINING

A. Supervisors must ensure that their employees receive information and training on how to use the assigned PPE.

B. Training and information to be provided to each PPE user includes:

1. why, when, and what PPE is necessary;
2. how to properly don, doff, adjust, and wear PPE;
3. the selection criteria and limitations of the PPE; and
4. the proper care, inspection, maintenance, useful life and disposal of the PPE.

C. Each employee must demonstrate an understanding of the information provided in training before being allowed to perform work requiring the use of PPE. Methods supervisors may use to verify demonstration of an understanding include:

1. orally questioning the employee,
2. observing the employee using the PPE in real or artificial setting, or
3. administering a written test.

D. A written certification must be completed verifying that each employee using PPE has received and understands the required training. For training provided by the supervisor, the supervisor must complete a *Personal Protective Equipment Training Certification* form (see Appendix C). If a written test was administered, a copy of the test should be placed into the employee's file.

E. Employees must be retrained when there have been:

1. changes in the workplace, such as new processes and equipment which render previous training obsolete,
2. changes in the types of PPE render the previous training obsolete,
3. inadequacies in an employee's knowledge or use of assigned PPE indicate that the employee has not retained the understanding or skill.

IX. RECORDKEEPING

A. Completed *Workplace Hazard Assessment/Certification Forms* should be made available to affected employees and a copy should be given to management.

B. *Personal Protective Equipment Training Certification* forms should be provided to, and will be retained for at least 3 years.

APPENDIX B

PERSONAL PROTECTIVE EQUIPMENT (PPE) SELECTION GUIDELINES

Note: This information only addresses the most frequently encountered hazards and recommended PPE, and therefore the information is not all inclusive. Hazards not listed may be found in your work area and special PPE could be needed. If you require assistance in conducting a hazard assessment or selecting PPE, contact management

I. EYE/FACE PROTECTION

Eye or face protection is required when potential exposure to hazards exist from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation. Eye and face protective equipment should be routinely considered for occupations such as, but not limited to, carpenters, electricians, machinists, mechanics, plumbers and pipefitters, lathe and milling machine operators, welders, landscape personnel and employees using chemicals. Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each hazard should be utilized. General eye and face protective equipment selection criteria includes the following.

- A. All eye and face protective equipment are required to comply with ANSI Z87.1, 2003, except eye protection designed for laser operations.
- B. Eye protection that provides side protection is required when there is a hazard from flying objects.
- C. Each employee who wears prescription lenses while engaged in operations that involve eye hazards should wear eye protection that incorporates the prescription in its design, or wear eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.
- E. Eye and face PPE should be distinctly marked to facilitate identification of the manufacturer.
- F. Dusty and/or chemical environments may represent an additional hazard to contact lens wearers. Wearers of contact lenses should also wear appropriate eye and face protection devices in a hazardous environment.
- G. Operations involving heat may also produce light radiation. Protection from both hazards is required.
- H. Protection from light radiation is directly related to spectacle filter density. Select the darkest shade that allows task performance.
- I. The use of metal frame protective devices should be avoided in electrical hazard areas.
- J. For most chemical use situations, safety glasses with side shields are adequate, however, other protective devices should be used in the following situations.
 - 1. Potential splash of hazardous chemical - splash goggle with splash-proof sides.
 - 2. Potential splash of highly corrosive material - face shield and splash goggles.
 - 3. Explosive or highly hazardous chemicals - full-face shield with throat protection and safety glasses with side shields.

EYE AND FACE PROTECTION SELECTION CHART

- I. IMPACT:** Grinding, machining, masonry work, woodworking, sawing, drilling, powered fastening, riveting and sanding Flying fragments, objects, chips and sand particles
Recommended PPE: Spectacles with side protection, impact-protection goggles, and/or face-shields
- II. HEAT:** Welding, furnace operations, pouring and casting Hot Sparks Splash from molten metals High temperature exposure
Recommended PPE: Goggles, spectacles with side protection. For severe exposure use face-shields Face-shields worn over goggles, Screen face-shields, reflective face-shields
- III. DUST:** Woodworking, buffing, cleaning with compressed air.
Recommended PPE: Dust Goggles
- IV. LIGHT AND/OR RADIATION:** Welding – Electric Arc Welding – Gas Optical radiation
Recommended PPE: Welding helmets or shields, Typical Shades: 10-14, Welding goggles or faceshields.
Typical shades: gas
welding 4-8, cutting 3-6,
brazing 3-4

II. FOOT PROTECTION

Protective footwear is required when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, or where such employee's feet are exposed to electrical hazards. Foot protective equipment should be routinely considered for occupations such as, but not limited to carpenters, electricians, machinists, mechanics, plumbers and pipefitters, dry wallers, welders, landscape personnel, shipping and receiving clerks, warehouse workers, and employees using chemicals.

FOOT PROTECTION SELECTION CHART

- I. IMPACT:** Routinely carrying or handling materials such as packages, parts, or heavy tools.
Recommended PPE: Falling objects Safety shoes or boots complying with ANSI Z41-1991
- II. COMPRESSION:** Manual and powered material handling equipment, bulk rolls and heavy tools Rolling or pinching equipment and objects
Recommended PPE: Safety shoes or boots complying with ANSI Z41-1991

IV. HAND PROTECTION

Hand protection is required when employees' 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 single glove that provides protection against all potential hand hazards; therefore, it is important to select the most appropriate glove for a particular application, to determine how often and long it can be worn, and whether it can be reused. Work activities should be evaluated to determine the degree of dexterity required, the duration, frequency, and degree of exposure, and the physical stresses that will be applied. Physical and chemical hand protection equipment selection criteria include the following.

A. For chemicals, read the label, MSDS, or literature provided by glove manufacturer including compatibility and breakthrough time to choose that the proper glove. For mixtures and formulated products (unless specific test data are available), gloves should be selected on the basis of the component that will breakthrough the glove material in the shortest time. In general, for concentrated acids and alkalis or organic solvents, natural rubber, neoprene, or nitrile gloves are recommended.

B. For handling hot objects, gloves made of heat-resistant materials should be available and kept near the vicinity of ovens or muffle furnaces. Hot objects should never be picked up with rubber, plastic, or asbestos gloves.

C. For protection against high voltage electrical hazards, rubber insulating gloves should be used which meet the American Society for Testing and Materials (ASTM D 120-87), "Specification for Rubber Insulating Gloves". These gloves should either be subject to electrical testing every 6 months or disposed after 6 months and replaced with new.

HAND PROTECTION SELECTION CHART

I. SHARP TOOLS/MATERIALS: Cutting, handling sharp or ragged objects, lacerations from blades, knives, glass, sheet metal; splinters from rough lumber; severe abrasions

Recommended PPE: Leather, wire mesh, or stitch gloves, cut resistant rubber gloves

II THERMAL HEAT: welding, soldering, brazing, foundry work, Thermal heat/burns

Recommended PPE: Leather gloves, flameretardant gauntlet gloves, chemical treated cloth gloves

III ELECTRICAL: Electrical utility installation and repair, where electrical shock and electrocution can occur.

Recommended PPE: Rubber insulated voltage rated gloves, other gloves rated for electrical work