

Personal Protective Equipment (PPE)

PURPOSE

The purpose of this Personal Protective Equipment (PPE) program is to ensure that all personnel are properly trained in the general principles and requirements of PPE.

PROCEDURE

An effective Personal Protective Equipment (PPE) program/training course will be provided by Supervisory personnel prior to initial assignment and deployment to the field. Mandatory refresher training is required of employees due to lack of use, improper use, insufficient skill or understanding, and or change in conditions that renders the earlier training obsolete.

The documented training program conducted by supervisory personnel will address the following:

1. When and where PPE is necessary.
2. What PPE is necessary.
3. How to properly don, doff, adjust, and wear PPE.
4. The limitation of PPE.
5. The proper care, maintenance, useful life, and disposal of PPE.
6. Proper care and maintenance in a sanitary and reliable condition, required by reasons of hazards of processes or environment to protect body parts from inhalation, absorption, or physical contact.
7. Employee-owned equipment may be allowed, and AES will be responsible for the assurances of its adequacy, maintenance, and sanitation. However, use of employee-owned equipment must be requested in writing to the AES and/or FRC ownership and accepted by AES/FRC ownership prior to use before AES will be responsible for this equipment.
8. Written and signed hazard assessments will be completed in work areas deemed necessary by AES management that addresses the hazards present that may affect an employee.
9. Fit testing of PPE (If required).
10. If hazards are present or likely to be present PEE will be selected for each employee and additional PPE may be donned by the employee at his/her discretion.
11. Defective or damaged PPE will not be used or allowed on the job site.

For other rules and regulations regarding Personal Protective and Life Saving Equipment, please refer to the Construction Safety Standard, Part C of Chapter 296-155-200 WAC, through Chapter 296-155-240 WAC.

PART C
PERSONAL PROTECTIVE AND LIFE SAVING EQUIPMENT

WAC 296-155-200 General requirements for personal protective equipment (PPE). (1) Supplying personal protective equipment.

(a) You must use personal protective equipment (PPE) wherever physical contact, absorption, or inhalation of a hazard could cause any injury or impairment to the function of any part of the body.

These hazards include:

- Hazardous processes;
- Environmental hazards;
- Chemical hazards;
- Radiological hazards;

OR

- Mechanical irritants.

Note:

PPE includes:

- Protective equipment for eyes, face, head, hearing, and extremities;
- Protective clothing;
- Respiratory devices;

AND

- Protective shields and barriers.

(b) You must maintain PPE in a sanitary and reliable condition.

Reference:

For requirements on maintaining specific personal protective equipment (PPE), see the following rules.

- Chapter 296-842 WAC, Respirators;

AND

- Chapter 296-817 WAC, Hearing loss prevention.

(c) If employees provide their own protective equipment, then you are responsible to make sure the PPE is:

- Adequate;
- Properly maintained;

AND

- Sanitary.

(d) All personal protective equipment must be of safe design and construction for the work to be performed.

(2) **Minimum clothing requirements.**

(a) You must ensure that employees wear at least:

- A short-sleeved shirt;
- Long pants;

AND

• Shoes that meet the requirements of WAC 296-155-212, Foot protection.

Definition:

A **short-sleeved shirt** covers the top of the shoulder and has material extending down the arm. If a short-sleeved shirt has a seam at the end of the shoulder, the material must extend down the arm from the seam.

Long pants have legs that extend past the knee when the wearer stands and leaves no exposed skin on the lower leg.

(b) Where there is a danger of contact with moving parts of machinery, or the work process is such that a hazard exists:

- The clothing of employees must fit closely about the body.
- Dangling neck wear, bracelets, wristwatches, rings, or similar articles must not be worn by employees.

Note: For additional related requirements see WAC 296-155-205, Head protection.

(3) You must require employees to wear appropriate PPE in all operations where:

- There is an exposure to hazardous conditions;

OR

• WAC 296-155-200, General requirements for personal protective equipment (PPE), indicates a need for using such equipment to reduce the hazards to the employees.

(4) Employees must comply with job safety practices and procedures and PPE requirements that are relevant to the job site.

(5) **High visibility garments.**

(a) During daylight hours, when employees' duties are performed in close proximity to moving vehicles, you must make sure that employees wear a high-visibility safety vest, shirt, or jacket that is fluorescent yellow-green, fluorescent orange-red, or fluorescent red in color. This garment must always be worn as an outer garment.

Definition:

For the purpose of this rule, **hours of darkness** means from one-half hour before sunset to one-half hour after sunrise.

(b) During hours of darkness, when employees' duties are performed in close proximity to moving vehicles, you must make sure that employees wear, at a minimum, a high-visibility safety vest, shirt, or jacket:

- Designed according to ANSI/ISEA 107-1999 Class 2 specifications;
- Worn as an outer garment;

AND

- Worn to provide 360 degrees of visibility around the employee.

Note: A high-visibility garment meets Class 2 specifications if the garment:

- Has an ANSI "Class 2" label;

OR

- Has at least 775 square inches of background material and 201 square inches of retroreflective material that encircles the torso and is placed to provide 360 degrees of visibility around the employee.

Note:

- Fading and soiling may degrade the high-visibility characteristics of the garments.

• ANSI/ISEA 107-1999 is available by:

– Purchasing copies of ANSI/ISEA 107-1999 by writing:

– American National Standards Institute

11 West 42nd Street

New York, NY 10036

OR

– Contacting the ANSI website at <http://web.ansi.org/>.

OR

• Reading a copy of ANSI/ISEA 107-1999 at any Washington state library.

(6) **Payment for PPE.** Except as provided in (a) through (e) of this subsection, the protective equipment, including PPE, used to comply with this chapter must be provided by the employer at no cost to employees.

(a) You are not required to pay for nonspecialty safety-toe protective footwear (including steel-toe shoes or steel-toe boots) and nonspecialty prescription safety eyewear, provided that the employer permits such items to be worn off the job site.

(b) When you provide metatarsal guards and allow the employee, at their request, to use shoes or boots with built-in metatarsal protection, you are not required to reimburse the employee for the shoes or boots.

(c) You are not required to pay for:

- Everyday clothing, such as long-sleeve shirts, long pants, street shoes, and normal work boots;
- Ordinary clothing, skin creams, or other items used solely for protection from weather, such as winter coats, jackets, gloves, parkas, rubber boots, hats, raincoats, ordinary sunglasses, and sunscreen.

(d) The employer must pay for replacement PPE, except when the employee has lost or intentionally damaged the PPE.

(e) Where an employee provides adequate protective equipment they own to meet the requirements of this chapter, you may allow the employee to use it and is not required to reimburse the employee for that equipment. You must not require an employee to provide or pay for their own PPE, unless the PPE is excepted in (a) through (d) of this subsection.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-200, filed 4/19/16, effective 5/20/16; WSR 09-05-071, § 296-155-200, filed 2/17/09, effective 4/1/09; WSR 04-24-089, § 296-155-200, filed 12/1/04, effective 1/1/05. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. WSR 01-11-038, § 296-155-200, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-155-200, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-200, filed 1/21/86; Order 76-29, § 296-155-200, filed 9/30/76; Order 74-26, § 296-155-200, filed 5/7/74, effective 6/6/74.]

WAC 296-155-201 Definitions applicable to this chapter. Catenary life line. A horizontal rope between two fixed anchorages, independent of the work surface, to which the lanyard is attached, either by tying or by means of a sliding connection. A catenary life line must be capable of supporting a minimum dead weight of 5,400 pounds per person, applied at the midpoint of the line.

Contaminant. Any material which by reason of its action upon, within, or to a person or object is likely to cause physical harm.

Dropline. A vertical rope from a fixed anchorage, independent of the work surface, to which the lanyard is affixed or tied.

Fixed anchorage. A secure point of attachment, not a part of the work surface, for droplines, lifelines, catenary life lines, or lanyards. The fixed anchorage and its appurtenances must be capable of supporting a minimum dead weight of 5,400 pounds per worker.

Lanyard. A rope, suitable for supporting one person. One end is fastened to a safety belt or harness and the other end is secured to a substantial object or a safety line.

Lifeline. A rope, suitable for supporting one person, to which a lanyard or safety belt (or harness) is attached.

O.D. Optical density and refers to the light refractive characteristics of a lens.

Radiant energy. Energy that travels outward in all directions from its source.

Safety belt. A device, usually worn around the waist which, by reason of its attachment to a lanyard and lifeline or a structure, will prevent a worker from falling.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-201, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-201, filed 1/21/86; Order 76-6, § 296-155-201, filed 3/1/76.]

WAC 296-155-203 Confined spaces. All work conducted in a confined space must comply with the provisions of chapter 296-809 WAC, and the following sections.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-203, filed 4/19/16, effective 5/20/16. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-155-203, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-203, filed 1/21/86.]

WAC 296-155-20301 Definitions applicable to confined spaces.
Confined space. A space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and

(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and

(3) Is not designed for continuous employee occupancy.

Corrosives. Substances which in contact with living tissue cause destruction of the tissue by chemical action.

Hazardous atmosphere. An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

(1) Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL);

(2) Airborne combustible dust at a concentration that meets or exceeds its LFL;

Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52m) or less.

(3) Atmospheric oxygen concentration below 19.5% or above 23.5%;

(4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in chapter 296-62 WAC, general occupational health standards, or chapter 296-841 WAC, Airborne contaminants, and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

(5) Any other atmospheric condition that is immediately dangerous to life or health.

Note: For air contaminants for which WISHA has not determined a dose or permissible exposure limit, other sources of information, such as safety data sheets that comply with the Hazard Communication Standard, WAC 296-901-140, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Irritants. Substances which on immediate, prolonged, or repeated contact with normal living tissue will induce a local inflammatory reaction.

Oxygen deficient atmospheres. Atmospheres at sea level having less than 19.5% oxygen by volume or having a partial pressure of 148 millimeters of mercury or less. This may deviate when working at higher altitudes and should be determined for an individual location. Factors such as acclimatization, physical condition of persons involved, etc., must be considered for such circumstances and conditions. (See chapter 296-809 WAC, Confined spaces.)

Toxicants. Substances which have the inherent capacity to produce personal injury or illness to persons by absorption through any body surface.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-20301, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060 and 29 C.F.R. 1910 Subpart Z. WSR 14-07-086, § 296-155-20301, filed 3/18/14, effective 5/1/14. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 07-05-062, § 296-155-20301, filed 2/20/07, effective 4/1/07; WSR 05-03-093, § 296-155-20301, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. WSR 01-11-038, § 296-155-20301, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. WSR 95-17-036, § 296-155-20301, filed 8/9/95, effective 9/25/95. Statutory Authority: Chapter 49.17 RCW. WSR 95-04-007, § 296-155-20301, filed 1/18/95, effective 3/1/95; WSR 91-24-017 (Order 91-07), § 296-155-20301, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-20301, filed 1/21/86.]

WAC 296-155-20307 Confined space work on sewer systems under construction. New systems under construction or new installations which have not yet been connected to a used system, may substitute forced ventilation for the testing requirements of chapter 296-809 WAC provided:

(1) Ventilation is effectively provided at least 5 minutes prior to entry into the confined space;

(2) Ventilation is provided, as required by WAC 296-62-13610, et seq., which supplies a continuous flow of air;

(3) Ventilation exhaust is discharged so as to present no hazard to other employees;

(4) An attendant is provided at the surface when there are employees in the manhole or pipe. The attendant must not leave the manhole unattended until such time as all employees are out and the cover has been replaced; and

(5) All other requirements for confined spaces are observed. See chapter 296-809 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-20307, filed 4/19/16, effective 5/20/16. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-155-20307, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-20307, filed 1/21/86.]

WAC 296-155-205 Head protection. (1) All employees on any construction site must be provided an individual hard hat which meets all requirements of (a) through (c) of this subsection.

(a) Hard hats for the protection of employees against impact and/or penetration of falling and flying objects must meet the specifications contained in American National Standards Institute, Z89.1-1969, Safety Requirements for Industrial Head Protection.

(b) You must provide each employee with head protection that meets any of the following American National Standards Institute (ANSI) for industrial head protection:

- (i) Z89.1-2009;
- (ii) Z89.1-2003; or
- (iii) Z89.1-1997.

(c) Hard hats for the head protection of employees exposed to high voltage electrical shock and burns must meet the specifications contained in American National Standards Institute, Z89.2-1971.

(2) All employees must have their individual hard hats on site and readily available at all times.

(3) All employees must wear a hard hat on any construction site whenever there is a potential exposure to danger of flying or falling objects to persons working or occupying the area.

Note: The hard hat may be removed whenever there is no potential exposure to a hazard.

(4)(a) Employees working on asphalt paving crews exposed to extreme temperatures from hot mix and not exposed to falling objects do not have to wear protective hard hats.

(b) Flaggers working with asphalt paving operations must comply with the requirements of WAC 296-155-305.

(5) Caps with metal buttons or metal visors must not be worn around electrical hazards.

(6) Employees working near moving machinery or in locations which present a hair-catching or fire hazard must wear caps, nets or other head and face protection that will completely contain the hair.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-205, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and chapter 49.17 RCW. WSR 14-03-013, § 296-155-205, filed 1/7/14, effective 2/10/14. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 09-05-071, § 296-155-205, filed 2/17/09, ef-

fective 4/1/09. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050, 2000 c 239, and chapter 34.05 RCW. WSR 01-04-015, § 296-155-205, filed 1/26/01, effective 2/28/01. Statutory Authority: Chapter 49.17 RCW. WSR 91-11-070 (Order 91-01), § 296-155-205, filed 5/20/91, effective 6/20/91; WSR 89-11-035 (Order 89-03), § 296-155-205, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-205, filed 1/21/86; Order 74-26, § 296-155-205, filed 5/7/74, effective 6/6/74.]

WAC 296-155-210 Hearing protection. The hearing protection requirements of chapter 296-817 WAC, Hearing loss prevention (noise), apply.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 03-11-060, § 296-155-210, filed 5/19/03, effective 8/1/03. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 83-24-013 (Order 83-34), § 296-155-210, filed 11/30/83; Order 74-26, § 296-155-210, filed 5/7/74, effective 6/6/74.]

WAC 296-155-211 Leg protection. Employees whose duties require them to operate a power chain saw must wear flexible ballistic nylon pads, sewn or otherwise fastened into the trousers, or other equivalent protection that will protect the vulnerable areas of the legs.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-211, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-211, filed 1/21/86.]

WAC 296-155-212 Foot protection. (1) Substantial footwear, made of leather or other equally firm material, must be worn by employees in any occupation in which there is a danger of injury to the feet through falling or moving objects, or from burning, scalding, cutting, penetration, or like hazard.

(a) The soles and heels of such footwear must be of a material that will not create a slipping hazard.

(b) Shoes made of leather or other firm materials that have soft athletic-type soles which would protect employees from foot injuries and at the same time, provide soft and firm footing while working under specialty requirements or with specialty materials are acceptable if meeting safety shoe requirements established by OSHA or ANSI.

(c) Footwear that has deteriorated to a point where it does not provide the required protection must not be used.

(2) Calks or other suitable footwear, which will afford reasonable protection from slipping, must be worn while working on logs, poles, pilings, or similar forest products.

(3) Traditional tennis shoes, shoes with canvas tops, or thin or soft soled athletic shoes, open toed sandals, slippers, dress shoes or other similar type shoes must not be worn. Soft or athletic-type soles with uppers of leather or other substantial material may be used where firm footing is desired and where minimal danger of injury to feet from falling or moving objects.

(4) Safety-toe footwear for employees must meet the requirements and specifications in American National Standard for Men's Safety-Toe Footwear, Z41.1-1967.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-212, filed 4/19/16, effective 5/20/16. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-155-212, filed 7/20/94, effective 9/20/94; WSR 89-11-035 (Order 89-03), § 296-155-212, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-212, filed 1/21/86; Order 74-26, § 296-155-212, filed 5/7/74, effective 6/6/74.]

WAC 296-155-215 Eye and face protection. (1) General.

(a) Employees must use eye and face protection equipment when machines or operations present potential eye or face injury from physical, chemical, or radiation agents.

(b) Eye and face protection equipment required by this part must meet the requirements specified in American National Standards Institute, Z87.1-1968, Practice for Occupational and Educational Eye and Face Protection.

(c) Employees whose vision requires the use of corrective lenses in spectacles, when required by this regulation to wear eye protection, must be protected by goggles or spectacles of one of the following types:

(i) Spectacles whose protective lenses provide optical correction;

(ii) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles.

(iii) Goggles that incorporate corrective lenses mounted behind the protective lenses.

(d) Face and eye protection equipment must be kept clean and in good repair. The use of this type equipment with structural or optical defects must be prohibited.

(e) Table C-1 must be used as a guide in the selection of face and eye protection for the hazards and operations noted.

(f) Protectors must meet the following minimum requirements:

(i) They must provide adequate protection against the particular hazards for which they are designed.

(ii) They must be reasonably comfortable when worn under the designated conditions.

(iii) They must fit snugly and must not unduly interfere with the movements of the wearer.

(iv) They must be durable.

(v) They must be capable of being disinfected.

(vi) They must be easily cleanable.

(g) Every protector must be distinctly marked to facilitate identification only of the manufacturer.

(h) When limitations or precautions are indicated by the manufacturer, they must be transmitted to the user and care taken to see that such limitations and precautions are strictly observed.

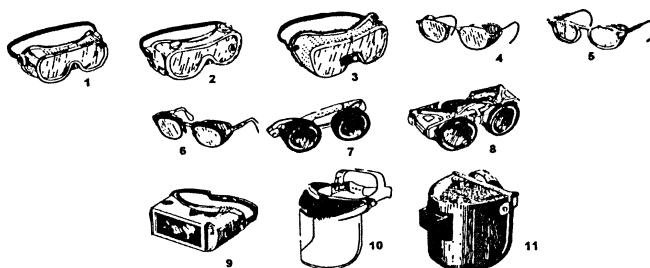


TABLE C-1

EYE AND FACE PROTECTION SELECTION GUIDE

1. GOGGLES, flexible fitting, regular ventilation
2. GOGGLES, flexible fitting, hooded ventilation
3. GOGGLES, cushioned fitting, rigid body
- *4. SPECTACLES, metal frame, with sideshields
- *5. SPECTACLES, plastic frame with sideshields
- *6. SPECTACLES, metal-plastic frame, with sideshields
- **7. WELDING GOGGLES, eyecup type, tinted lenses (illustrated)
- 7A. CHIPPING GOGGLES, eyecup type, clear safety lenses (not illustrated)
- **8. WELDING GOGGLES, coverspec type tinted lenses (illustrated)
- 8A. CHIPPING GOGGLES, coverspec type, clear safety lenses (not illustrated)
- **9. WELDING GOGGLES, coverspec type, tinted plate lens
10. FACE SHIELD (available with plastic or mesh window)
11. WELDING HELMETS

*Nonside shield spectacles are available for limited hazard use requiring only frontal protection.

**See Table C-2 in (2) of this section, Filter lens shade numbers for protection against radiant energy.

APPLICATIONS		
OPERATION	HAZARDS	RECOMMENDED PROTECTORS: Underscored Numbers Signify Preferred Protection
ACETYLENE-BURNING ACETYLENE-CUTTING ACETYLENE-WELDING	SPARKS, HARMFUL RAYS, MOLTEN METAL, FLYING PARTICLES	<u>7</u> , <u>8</u> , <u>9</u>
CHEMICAL HANDLING	SPLASH, ACID BURNS, FUMES	<u>2</u> , 10 (for severe exposure add <u>10</u> over 2)
CHIPPING	FLYING PARTICLES	<u>1</u> , <u>3</u> , 4, 5, 6, <u>7A</u> , <u>8A</u>
ELECTRIC (ARC) WELDING	SPARKS, INTENSE RAYS, MOLTEN METAL	<u>9</u> , <u>11</u> (<u>11</u> in combination with 4, 5, 6, in tinted lenses, advisable)
FURNACE OPERATIONS	GLARE, HEAT, MOLTEN METAL	<u>7</u> , <u>8</u> , <u>9</u> (for severe exposure add <u>10</u>)
GRINDING-LIGHT	FLYING PARTICLES	<u>1</u> , <u>3</u> , 4, <u>5</u> , 6, 10
GRINDING-HEAVY	FLYING PARTICLES	<u>1</u> , <u>3</u> , <u>7A</u> , <u>8A</u> (for severe exposure add 10)
LABORATORY	CHEMICAL SPLASH, GLASS BREAKAGE	<u>2</u> (10 when in combination with <u>4</u> , <u>5</u> , <u>6</u>)
MACHINING	FLYING PARTICLES	<u>1</u> , <u>3</u> , <u>4</u> , <u>5</u> , <u>6</u> , 10

APPLICATIONS		
OPERATION	HAZARDS	RECOMMENDED PROTECTORS: Underscored Numbers Signify Preferred Protection
MOLTEN METALS	HEAT, GLARE, SPARKS, SPLASH	<u>7</u> , <u>8</u> (10 in combination with <u>4</u> , <u>5</u> , <u>6</u> , in tinted lenses)
SPOT WELDING	FLYING PARTICLES, SPARKS	<u>1</u> , <u>3</u> , <u>4</u> , <u>5</u> , <u>6</u> , 10

(2) Protection against radiant energy. (a) Selection of shade numbers for welding filter. Table C-2 must be used as a guide for the selection of the proper shade numbers of filter lenses or plates used in welding. Shades more dense than those listed may be used to suit the individual's needs.

TABLE C-2

FILTER LENS SHADE NUMBERS FOR PROTECTION AGAINST
RADIANT ENERGY

Welding Operation	Shade number
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes.	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes.	11
Gas-shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes.	12
Shielded metal-arc welding 3/16-, 7/32-, 1/4-inch diameter electrodes.	12
5/16-, 3/8-inch diameter 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, over 6 inches.	5 or 6
Gas welding (light), up to 1/8-inch.	4 or 5
Gas welding (medium), 1/8-inch to 1/2-inch.	5 or 6
Gas welding (heavy), over 1/2-inch.	6 or 9

(b) Laser protection.

(i) Employees whose occupation or assignment requires potentially hazardous exposure (see WAC 296-62-09005(4)) to laser radiation must wear suitable laser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved. Table C-3 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 5 through 8.

TABLE C-3

SELECTING LASER SAFETY GLASS

INTENSITY	ATTENUATION	
CW maximum power density (watts/cm ²)	Optical density (O.D.)	Attenuation factor
10 ⁻²	5	10 ⁵
10 ⁻¹	6	10 ⁶
1.0	7	10 ⁷

INTENSITY		ATTENUATION
CW maximum power density (watts/cm ²)	Optical density (O.D.)	Attenuation factor
10.0	8	10 ⁸

Output levels falling between lines in this table must require the higher optical density.

(ii) All protective goggles must bear a label identifying the following data:

- (a) The laser wavelengths for which use is intended;
- (b) The optical density of those wavelengths.
- (c) The visible light transmission.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-215, filed 4/19/16, effective 5/20/16. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-155-215, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 85-01-022 (Order 84-24), § 296-155-215, filed 12/11/84; Order 74-26, § 296-155-215, filed 5/7/74, effective 6/6/74.]

WAC 296-155-220 Respiratory protection. The respiratory protection requirements applicable to construction work under this section are identical to those set forth in chapter 296-842 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 05-03-093, § 296-155-220, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. WSR 99-10-071, § 296-155-220, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 83-15-017 (Order 83-19), § 296-155-220, filed 7/13/83, effective 9/12/83; Order 74-26, § 296-155-220, filed 5/7/74, effective 6/6/74.]

WAC 296-155-235 Working over or adjacent to water. (1) When an employee is employed under conditions which expose them to a risk of drowning, they must wear a U.S. Coast Guard approved life saving device, unless it can be shown that conditions, such as shallow water, are such that flotation would not be achieved.

(2) Prior to and after each use, the buoyant life saving device must be inspected for defects which would alter their strength or buoyancy. Defective units must not be used.

(3) Ring buoys with at least 90 feet of line must be provided and readily available for emergency rescue operations. Distance between ring buoys must not exceed 200 feet.

(4) At least one lifesaving skiff must be immediately available at locations where employees are working over or adjacent to water. Each skiff, or skiffs, must:

- (a) Be suitable for conditions where used.
- (b) Be equipped with oar locks securely attached to gunwales, oars, one boat hook, and one cork ring buoy with 50 feet of suitable line attached.

(5) Whenever boats or skiffs cannot be used, due to swift currents, life lines close to the water surface must be provided and,

wherever practicable, a line must be stretched across the stream with tag lines.

(6) Where workers are transported by boat or barge, only such number of persons must be carried that can be safely accommodated on fixed seats. Capacity showing number of persons must be plainly marked on vessel.

(7) All workers must be provided with a U.S. Coast Guard approved buoyant life saving device while transported in open boats and/or barges, and where deemed necessary by the department, workers must wear same while in transport.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-235, filed 4/19/16, effective 5/20/16. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-155-235, filed 7/20/94, effective 9/20/94; Order 74-26, § 296-155-235, filed 5/7/74, effective 6/6/74.]

WAC 296-155-240 Sterilization of protective equipment. Goggles, gloves, respirators and other protectors must not be interchanged among employees for use unless they have been thoroughly cleaned since last use.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-240, filed 4/19/16, effective 5/20/16; Order 74-26, § 296-155-240, filed 5/7/74, effective 6/6/74.]