

Best Practices for PPE When welding a Collision Repair Facility

OSHA's welding, cutting, and brazing standard, 29 C.F.R. §1910.252(b)(3), outlines specific PPE requirements for welders. This provision states that employees exposed to the hazards created by welding, cutting, or brazing operations must be protected by PPE in accordance with the requirements of the general personal protective equipment standard, §1910.132. The welding standard also states that "[a]ppropriate protective clothing required for any welding will vary with the size, nature and location of the work to be performed."

Employees performing and employees exposed to the hazards of welding will require a variety of PPE in order to eliminate the many risks that they encounter on a daily basis.

Below are 7 Key areas of PPE that are needed for the safety of Welders

1) Hand Protection

Hand protection is probably the most commonly used PPE. Flying sparks, heat, and sharp objects are encountered throughout the day. A welder will require a variety of gloves in order to work comfortably all day. Cut resistant gloves, welding gloves, hand shields, and leather gloves all serve different protection for the various hazards that exist. There are specific ANSI standards for gloves, such as ANSI /ISEA 105 on cut resistance as well as for Arc Flash protection, so selection must be based on the performance characteristics of the glove in relation to the tasks being performed. For chemical exposures, the SDS will list the appropriate protection.

2) Skin protection

Skin protection is also considered critical. Clothing for welders should be made from cotton or wool of a dense weave, preferably treated with flame-retardant coatings. Polyester, acetate or acrylic clothing (or combinations of these) with cotton or wool should not be worn as these materials are flammable and will melt onto the skin while burning.

3) Eye and face protection

A welder's eye and face must be protected against exposure to UV radiation, hot metal, sparks, and flying objects. A welding helmet, welding beanie, face shield, safety glasses, and/or safety goggles may all be required throughout the day in order to protect a welder's eyes. Eye and face protection provided to employees should comply with ANSI Z87.1-1989 and head protection must meet ANSI Z89.1-1986 standards.

4) Individual booths

Additionally, where the work permits, the welder should be enclosed in an individual booth. The booth should be composed of noncombustible UV protective rated screens or curtains. Booths, curtains, and screens should permit circulation of air at floor level. Workers or other persons adjacent to the welding areas may need to be protected from rays by UV protective screens or shields; or they may be required to wear appropriate goggles/safety glasses. Welding out in the facility may also require a "Hot Work" permit as a fire prevention tool.

5) Foot protection

A welder's feet must also be protected from falling objects, flying sparks, and hot slag. Closed toed, leather, high top shoes will provide the best protection. Welding spats and other heat resistant foot/leg covers can provide additional protection. Safety shoes must meet the ANSI Z41.1-1991 or ASTM F2413-05 foot protection standards.

6) Hearing protection

Hearing protection is often required in order to reduce exposure to noise hazards created during the welding process. If employees are exposed to noise hazards over 85 dBA (decibels measured on the A

scale of a sound level meter) a hearing conservation program must be implemented. There are a large variety of earplugs and earmuffs that will provide comfortable protection against hearing loss. A hearing conservation program must be in compliance with OSHA 29 CFR 1910.95.

7) Respiratory protection

Respiratory protection may also be required in order to eliminate employee exposure to toxic fumes, gases, and/or dusts. Air quality testing for the welders breathing zone need to be performed to quantify the exposure level. Engineering controls such as mechanical ventilation, local exhaust systems and fume hoods should be implemented as much as possible in order to eliminate the risk of exposure. Employers must ensure that employees are not exposed to toxic fumes, gases and/or dusts above the maximum allowable concentrations as specified in 29 CFR 1910.1000 (Toxic and Hazardous Substances). Selection of the method of protection is dependent on the exposure being dealt with and the protection level required to obtain a safe breathable atmosphere. Any company that requires their employees to wear respirators must have a [respiratory protection plan](#) that meets the ensures compliance with the OSHA requirements for Respiratory Protection standard, 29 CFR 1910.134

When it comes to welding safety and the protection of workers you must understand the exposure, hazards and proper protective methods. The health hazards and injuries possible are too numerous to mention here, but understand failure to protect will cause harm!

OSHA states the following: [1910.252\(b\)\(3\)](#)

Protective clothing - General requirements. Employees exposed to the hazards created by welding, cutting, or brazing operations shall be protected by personal protective equipment in accordance with the requirements of 1910.132. Appropriate protective clothing required for

any welding operation will vary with the size, nature and location of the work to be performed

It is an employer's responsibility to ensure the safety of their employees, and following a Hazard Communication, staying up to date on OSHA regulations, and fully training both staff and supervisors

1910.132(a)

Application. Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact

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1910.252(c)(1)(iv)

Hazard communication. The employer shall include the potentially hazardous materials employed in fluxes, coatings, coverings, and filler metals, all of which are potentially used in welding and cutting, or are released to the atmosphere during welding and cutting, in the program established to comply with the Hazard Communication Standard (HCS) (§ 1910.1200). The employer shall ensure that each employee has access to labels on containers of such materials and safety data sheets, and is trained in accordance with the provisions of § 1910.1200. Potentially hazardous materials shall include but not be limited to the materials itemized in paragraphs (c)(5) through (c)(12) of this section

Welders should select a respirator recommended for welding. Certain lung or heart conditions can make respirator use dangerous. Medical clearance must be obtained before using a respirator. The OSHA standard requires fit testing for all tight-fitting respirators.