

## Workplace Health and Safety Queensland

**Smash repair industry (including Spray Painters) –  
Welding**

There are many safety issues with welding and cutting. General safety issues are:

- ensuring sufficient ventilation and light
- keep the area tidy and free of obstacles to prevent slips and trips
- don't use welding and cutting equipment near to where flammable substances are stored or used
- use welding screens to stop people being exposed to high intensity flashes.

**Electrical**

- Use a voltage reduction unit (VRU or VRD) on stick welders.
- Never twist or knot a lead and don't bend it sharply or tack it to a wall.
- Inspect all leads, switches and fittings for damage and frayed or cracked insulation (don't use damaged leads or switches).
- Make sure electrical leads etc. are inspected and tested (refer to electrical safety information sheet).
- Use the shortest possible continuous leads and keep the leads out of the way, but don't weld with the cable over your shoulder.

**Burns, fire and explosion**

- Provide workers with proper personal protective equipment<sup>1</sup>, such as gloves, overalls, safety footwear, aprons and head covering. Clothing should:
  - protect all parts of the body
  - be wool/flame resistant canvas (not materials that burn easily)
  - have no cuffs or open pockets.
- Protect eyes with a helmet and grade of visor appropriate for the welding or cutting process.

- Ensure fuel tanks have been thoroughly cleaned or otherwise made safe against burning/exploding before welding them.
- Prevent fires by removing combustible materials from near the welding process or using a welding blanket. Have a suitable fire extinguisher handy.
- Use flash arresters and non-return valves on oxy welding/cutting equipment.
- Keep gas cylinders secured in an upright position.

**Metal fumes and gases**

During flame cutting or welding processes, workers can inhale metal fumes and toxic gases (from the metals being joined or cut, filler metals, fluxes, shielding gases, coatings on metals, and cleaning or degreasing solvents).

To minimise how much metal fumes are breathed in:

- where possible, use different cutting and welding processes that produce less fumes (e.g. spot welding)
- move the work so the worker does not stand over the plume of gas and fume created (eg. working from a bench or raise the vehicle on a hoist)
- use a 'local extraction' ventilation system, i.e. a mechanical extraction system that sucks the fumes from a specific part of the work area, filters out the fume and has clean make-up air
- have enough general ventilation (fresh air ducted into the workplace or natural ventilation through open doors and windows)
- ensure confined spaces are well ventilated

- separate welding areas from the rest of the workplace by walls or other barriers/screens
- use 'respiratory protective equipment'<sup>1</sup>, i.e. a respirator. Respirators used must meet AS 1716 (it will have an Australian Standards mark on the package).
  - for welding fumes, a 'P2' type respirator is normally appropriate<sup>2</sup>.
  - the types of respiratory protective equipment are:
    - (a) disposable respirators<sup>3</sup>
    - (b) half/full face respirators (rubber mask with replaceable filters)<sup>3</sup>
    - (c) powered air purifying respirators (PAPR) (filters and a pump on a belt which pumps filtered air into a hood over the wearer's face)
- 'PAPR' full face respirators provide better protection from inhaling dust and are more cost effective in the long term than disposable respirators
- workers who are welding stainless steel, aluminium or galvanised steel may need more protection – obtain information from your welding consumables supplier.

### Noise

Some welding and related tasks can make a lot of noise – ensure noise is minimised and that people are protected from noise (refer to the noise and vibration information sheet for further information on noise).

For more information on welding and workplace health and safety issues call 1300 369 915 or visit [www.deir.qld.gov.au](http://www.deir.qld.gov.au)

### Important information:

<sup>1</sup> People using personal protective equipment such as respirators have to be trained in how to use and maintain the equipment properly to ensure it is effective.

<sup>2</sup> For more hazardous fumes, such as those from welding or oxy/plasma cutting stainless steel, aluminium or galvanised steel, disposable and 'P2' half face respirators may not be enough - a better respirator ('PAPR' or 'air supplied') and use of extraction ventilation may be necessary. Refer to the (MSDS) from your supplier of welding consumables for more information.

<sup>3</sup> People using half/full face and disposable respirators have to be cleanly shaven for the respirator to have a good seal on the face, for effectiveness.

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