



## WELDING – SHORT HEALTH AND SAFETY ASSESSMENT TOOL

This audit tool helps you to identify the welding and cutting hazards in your workplace. Once the hazards have been identified you can use the Department of Labour publication *Health and Safety in Welding* to implement recommended control measures. The Department recommends welders read the publication through before using this tool.

Page references in the section headings also refer to *Health and Safety in Welding*. This publication and a comprehensive assessment tool for welding can be downloaded from

[www.osh.dol.govt.nz/order/catalogue/welding.shtml](http://www.osh.dol.govt.nz/order/catalogue/welding.shtml).

For more detail refer to *tn7* at [www.wtia.com.au](http://www.wtia.com.au).

### SUMMARY (pages 6-8)

- Which of these hazards are present and require attention
 

<input type="checkbox"/> Fire/explosion	<input type="checkbox"/> Burns
<input type="checkbox"/> Fumes	<input type="checkbox"/> Electric shock
<input type="checkbox"/> Compressed gases	<input type="checkbox"/> Hazardous substances
<input type="checkbox"/> Toxic gases	<input type="checkbox"/> Heat stress
<input type="checkbox"/> Radiation	<input type="checkbox"/> Noise
<input type="checkbox"/> Dust (metal preparation)	<input type="checkbox"/> Inert gases (suffocation)
<input type="checkbox"/> Vibration	<input type="checkbox"/> Manual handling issues

### TRAINING AND CERTIFICATION (pages 9 and 10)

- Are welders certified for the job they are doing and in the basic elements of welding health and safety?  Yes  No

### PROCESS/EQUIPMENT SELECTION (page 11)

- Describe the sort of welding/cutting being done  
*Key words and phrases:*
  - Welding method
  - Metals involved
  - Gases being used
  - Electrode type
  - Coating on metals
  - Duration and location of welding

### GENERAL HEALTH AND SAFETY (pages 6, 7 and 12)

- Mark any key words and phrases that indicate the presence of a hazard and write control measures.

*Key words and phrases:*

- Housekeeping
- General arc flash protection
- Availability of safety data sheets (SDS)
- Warning signage
- Air circulation
- Labelling of hazardous materials
- First aid equipment and training
- Lighting

Hazards and control measures

### FIRE PREVENTION AND HOTWORK (pages 13-15)

- From the key words and phrases, note any hazards that may lead to a fire or explosion, and note any control measures.

*Key words and phrases:*

- Combustibles, explosives or flammables present?
- Combustibles on the other side of metal walls?
- Fire watchers and inspections
- Combustible floors, ceilings or walls?
- Wetting, shielding or covering combustibles?
- Ventilation ducts and conveyors

- Sprinkler systems
- Work on drums, barrels and tanks
- Oil and grease free
- Fire extinguishers
- Work in confined spaces

Hazards and control measures

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**VENTILATION (pages 21-23 and 45)**

8. Describe where the welding is being carried out and the ventilation that exists there. Write any controls required.

*Key words and phrases:*

- Number of people exposed, including bystanders
- Ventilation slot on a welding bench
- Relocatable hood
- Size and roof height of the workshop, if indoors
- Discharge of contaminated air
- Gun-mounted ventilation

Description

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Controls

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**PROTECTIVE CLOTHING/EQUIPMENT (pages 16 and 17)**

6. Which personal protective equipment should be supplied for this welding operation?

- Welding helmet
- Apron
- Cap
- Steel-capped boots
- Fire-resistant overalls with long sleeves
- Respiratory protection
- Eye protection
- Spats/leggings
- Neck protection
- Hearing protection
- Fire-resistant gauntlet gloves

**FUME AND GAS CONTROL (pages 18-20 and 45)**

7. It is assumed that protection will be needed against general fumes from the welding process. Which other specific fume/gas hazards are present?

- Toxic metal fumes
- Phosgene
- Phosphine
- Carbon monoxide
- Highly toxic metals (beryllium, cadmium)
- Inert gases
- Ozone
- Nitrogen oxides
- Fluxing agents
- Effects made worse by confined spaces

Control measures

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**ELECTRICAL SAFETY (pages 24 and 25)**

9. From the key words and phrases, note any hazards arising from poor selection of welding equipment and suggest controls for these hazards.

*Key words and phrases:*

- Lowest no load voltage and automatic control
- Power board safety
- Cable connections (if needed)
- Rod holders
- Earthing clamps and cables plus grounding checks
- RCD devices
- Shortest possible leads

Hazards and control measures

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**10.** From the key words and phrases, note any hazards arising from the unsafe use of welding equipment and suggest controls.

*Key words and phrases:*

- Positioning of welding controls (no knots etc.)
- Power shut-off
- Water
- Removal of electrodes from rod holders
- Operation of equipment within rated duty cycle
- Disconnect after use
- Electrical sparks
- Drying of hands

Hazards and control measures

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**11.** From the key words and phrases, note any hazards arising from the unsafe inspection and repair of welding equipment and suggest controls.

*Key words and phrases:*

- Inspection of: leads, cables, switches, cover plates and rod holders.

Hazards and control measures

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**SAFE USE OF WELDING GASES (pages 26-27)**

**12.** From the key words and phrases, note the presence of any gas-related hazards and suggest controls.

*Key words and phrases:*

**Maintenance of gas bottles**

- Labelling
- Stored in a ventilated area

- Separate storage for fuel and oxygen
- Acetylene cylinders upright
- Empties marked
- Heat/electrical separation
- Regular examination for rust, leaks and defects
- Secured against falls

**Integrity of equipment connected**

- Regular inspection
- Colour coding correct
- Free of oil and grease
- Flashback arrestors

**Correct usage of gas equipment**

- Correct assembly procedures
- Correct lighting procedures
- Leak testing procedures
- Flashback signs known and how to respond

**General**

- Avoid using LPG in trenches/holes
- Avoid sources of ignition
- Close valves before disassembly
- Don't dust off clothing with oxygen

Hazards and control measures

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**HAZARDOUS SUBSTANCES (pages 28-31)**

**13.** List any hazardous substances not already covered in this checklist and state control measures for each.

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# Health and safety action plan

Factor	Practicable steps	Likely impact	Plan for actioning the steps	Who will action?	Deadline
Training/certification		H			/ /
		M			/ /
		L			/ /
Process/equipment selection		H			/ /
		M			/ /
		L			/ /
General health and safety		H			/ /
		M			/ /
		L			/ /
Fire prevention and hot work		H			/ /
		M			/ /
		L			/ /
Protective clothing/equipment		H			/ /
		M			/ /
		L			/ /
Fume and gas control		H			/ /
		M			/ /
		L			/ /
Ventilation		H			/ /
		M			/ /
		L			/ /

Factor	Practicable steps	Likely impact	Plan for actioning the steps	Who will action?	Deadline
Electrical safety		H			/ /
		M			/ /
		L			/ /
Safe use of welding gases		H			/ /
		M			/ /
		L			/ /
Hazardous substances		H			/ /
		M			/ /
		L			/ /
Metal preparation		H			/ /
		M			/ /
		L			/ /
Confined spaces		H			/ /
		M			/ /
		L			/ /
Radiation		H			/ /
		M			/ /
		L			/ /
General safety (noise, vibration, manual handling)		H			/ /
		M			/ /
		L			/ /

Factor	Practicable steps	Likely impact	Plan for actioning the steps	Who will action?	Deadline
Hand tools		H			/ /
		M			/ /
		L			/ /
Requirements of the Health and Safety in Employment Act 1992		H			/ /
		M			/ /
		L			/ /
		H			/ /
		M			/ /
		L			/ /