WeldConnect
Keeping Welding Safe

WeldConnect Group Pty Ltd

Hazard & Risk Assessment Procedure

Welding Allied Processes & Equipment

Operates a
QUALITY MANAGEMENT SYSTEM
Which complies with the requirements of ***ISO 9001:2015***
For the following Scope:

Consulting and provision of hazard & risk assessment on Welding & oxy/fuel Gas Dangerous Goods equipment and environment, including provision of welding consumable s and safety supplies

Certifcation No – QMS41304 *ISSUED 24 AUGUST 2016*

Certified System ™
Quality
ISO 9001

Introduction

A person conducting a business or undertaking has the primary duty to ensure, so far as is reasonably practicable, that the workers and other persons are not exposed to health and safety risks from the business or undertaking.

A person conducting a business or undertaking that carries out welding activities must eliminate risk arising from welding, or that is not reasonably practicable, minimise the risk so far s is reasonably practicable.

What is required to manage risks associated with welding processes?

The WHS Regulations requires a person conducting a business or undertaking to "Manage risks" associated with specific hazards including noise, hazardous chemicals, confined spaces, plant and electricity.

Reference - Regulation section 32 – 38

WeldConnect Welding environment & equipment hazard and risk assessment procedure, is mapped to the Welding Code of practice which provides guidance on managing risks of Welding processes by following a "systematic process that involves –

- Identifying the hazards
- If necessary, assessing the risks associated with these risks
- Communicating and implementing control measures, and
- Reviewing control measures

Reference – Welding Processes - Code of Practice (COP) – July 2012 & State Australian Standards with the COP.

To assure, WeldConnect provides the highest level of Quality and customer service we have a third party external organization – SAI Global Certification Services Pty Ltd (CAN 108 716 669) Audit our procedures and systems Annually.

CERTIFCATION OF REGISTRATION

This is to Certify that –

WeldConnect Group Pty Ltd (ABN 93 165 053 494)

Operates a

QUALITY MANAGEMENT SYSTEM

Which complies with the requirements of –

ISO 9001:2015

For the following Scope

Consulting and provision of a hazard and risk assessments on welding and oxy/fuel Gas Dangerous goods equipment & environment, including the provision of welding consumables and safety supplies.

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Scope Of Work

This WeldConnect assessment criteria and report is to identify the risks posed by a site's welding environment and welding allied processes to people, property and the working environment within your business.

Foreword

Scope of Work Description

Welding Hazard & Risk Assessment App

- Welding set Hazard and Risk identification and recommended controls.
- Welding set inspection, testing and tagging.
- Welding Allied Processes environment Hazard and Risk identification, and recommended controls.

Objective

The WeldConnect program incorporates all relevant requirements of State Acts, Regulations and Australian Standards, guiding our expert consultants when testing and maintaining equipment and site Welding environment allied processes protocols to a strict generic standard.

Every element of the WeldConnect equipment testing and assessing program is automated to rate every specific hazard identified to the risk to your business in a low, medium, high matrix.

After every routine on site visit, WeldConnect consultants will report and inform your management and workers of the facts and exact safety position of your gas equipment and site protocols.

WeldConnect's proactive consultants will assist your team through communication and factual reporting, to:

- Maintain compliance.
- Assist management to make calculated resourceful decisions.
- Establish a high level of safety consistency.
- Understand the cost to maintain your businesses safety standards within this field.
- Most of all, keep your team safe.

This precise approach will give your business the best possible result, helping to keep your people safe, productive and with planned budgets.

Welding Allied Processes & Equipment

Hazard & Risk Assessment App Program & On-Site Procedure

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Consultants/Management Competency

Management Competency

WeldConnect management must hold as a minimum competency:

1. Occupational Health and Safety Diploma.
2. Risk Management Skills.
3. Certificate 4 Training and Assessing.

All Consultants/Representatives Competency

All WeldConnect consultants and representatives must have as a minimum competency:

1. WeldConnect 40 hour Oxy/Fuel Gas Dangerous Goods and Equipment Scope of Work Training/Certification.
2. Training in Welding Processes Code of Practice July 2012.
3. Ability to understand & identify hazards with welding structure, plant and systems of work.
4. An understanding in how to complete a hazard and risk assessment.
5. An understanding in hazardous chemicals, airborne contaminants and plant.
6. Ability to understand the review and control measures.
7. Good communication skills.
8. Skills in Performing Manual Welding Allied Processes.

Consultants On-Site Risk Management Process

Scope of Work Risk Management Process

- Welding set Hazard and Risk identification, and recommended controls.
- Welding set inspection, testing and tagging.
- Welding environment Hazard and Risk identification, and recommended controls.

Consultants predominantly will assess, test, tag and comply to:

Code Of Practice – Welding Processes July 2012

The Code of Practice on welding processes is an approved code of practice under section 274 of the Work Health and Safety Act (the WHS Act).

An approved code of practice is a practical guide to achieving the standards of health, safety and welfare required under the WHS Act and Work Health and Safety Regulations (the WHS Regulations).

A code of practice applies to anyone who has a duty of care in the circumstances described in the code. An approved code of practice would achieve compliance with the health and safety duties in the WHS Act.

Codes of practice are admissible in court proceedings under the WHS Act and Regulations. Courts may regard a code of practice as evidence of what is known about a hazard, risk or control and may rely on the code of practice in determining what is reasonably practicable in the circumstances to which the code relates. See Welding Processes Code of Practice for further information.

Australian Standards Guidance
1674.2-2007 Safety in Welding and Allied Processes – Electrical.

This Standard sets out safety requirements for arc welding and allied processes, to reduce the possibility of electric shock and minimise hazards. It includes requirements for cable connections for alternating and direct current power sources, as well as requirements for hazard reducing devices and other ancillary equipment. It also describes practices and safeguards that should be adopted by welders and provides examples of situations that present an increased risk of electric shock.

- Welding electrical safety, WTIA Technical note 22, published by the Welding Technology of Australia.
- Welding Technology Institute of Australia – Technical notes – 7 – 04, 22 – 03.
- AS 1674.2 – 2007 Safety in welding and allied processes – electrical.

Systematic Approach
Code of Practice - Welding Allied Process July 2012

An Overview of the Risk Management Process

The approach of the national standard to "risk" management is a 3 step process, plus recording and review, as indicated below. This systematic approach is derived from the legislation outlined in Section 2.0.

Steps	Key Elements	References
STEP 1 ***Identify the hazard***	• Conduct a walk through assessment. • Inspect the materials and equipment that will be used during welding processes. • Identify SDS, PPE and surrounds.	CoP 2.1
STEP 2 ***Assess the risk***	• Identify which workers are at risk. • Properties of materials and surface coatings. • Condition of welding equipment. • Condition under which welding is carried out. • Skills, competence and experience of welders. • Record results of assessment.	CoP 2.2
STEP 3 ***Control the risks***	• Apply practicability Test (Based on feasibility and cost of mitigating risk). • Eliminate hazards leading to risk where practicable. • Implement risk control. • Hierarchy of controls.	CoP 2.3
Review	• Repeat Step 1 & 2 to ensure risks mitigated. • Record results of routine assessment. • Implement additional risk control measures.	CoP 2.4

Testing Your Welding Equipment & Environment Processes
Code of Practice – Welding Risk Management Processes July 2012

What is Required to Manage Risks Associated With Welding?

The WHS Regulations require a person conducting a business or undertaking to "manage risk" associated with specific hazards, including noise, hazardous chemicals, confined space, plant and electricity.

- Regulation 32 – 38.
- Section 19, 39, 46, 47, 48.

References:

Welding Code of Practice 2012 Section 1 – Introduction.

Before Commencement of Work

All WeldConnect consultants are trained to comply with a strict protocol before entering any Clients/Company site.

Consultants before entering any site, and setting up testing equipment shall:

1. Ensure all company, personnel and vehicle insurances are current.
2. Make sure all vehicles are clean and comply with the client's on-site vehicle standards. This could include first aid kit, flashing light, log books and other safety standards.
3. Comply with company site Personnel Protective Equipment (PPE) standards.
4. Arrange and confirm with company key stakeholders the scope of work, time and date.
5. Comply to client's/company's induction and sign in protocols at all times.
6. Select area to set up all assessment, testing and tagging equipment.
7. Complete the WeldConnect job safety analysis (JSA) sheet if required by site management.
8. Complete the Scope of Work in a safe and efficient manner for the client.

On-Site Procedure 12 & 6 Monthly Welding Allied Processes and Welding Equipment Assessment, Testing & Tagging

Please Note: *at times companies will require consultants on a monthly and quarterly basis for the common 6 and 12 monthly routine assessment. Consultants will still comply with this procedure.*

Welding equipment hazard and risk assessment, testing and tagging procedure includes all welding machines – mig, tig, arc, plasma, generator welders.

5.1 Welding Machine Power Source

- Visually assess the welding machine is appropriately labelled with a rating plate stating compliance to AS 60974.1, 3100, 60974.6.
- Visually assess the plate is compliant with AS 1674.2 table 3.2.2 Box Numbers.
- Visually assess the arc welding machine is manufactured to AS 1966 and single phase portable welding machines to AS 3195.
- Visually assess the welding is appropriate on a controlled site e.g. construction or mining site. Is the portable arc welding machine tested to on-site specifications and as per AS 3195 & 3100.
- CoP requirement – Assess machine as per CoP section 2.

References:

- AS 1966, 3195, 60974.1 & 6, 3100.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.2 Power Source – Compliant Testing & Tagging

- Visually assess if the welding machine is transportable, and assess if machine tested every 3 months as per AS 1674.2 – 2007 5.1.1(a), or if the arc welding machine is fixed the machine is tested at least once every 12 months as per AS 1674.2 – 2007 5.1.1(b).
- Visually assess the welding machine has been tested by a qualified electrician.
- Visually assess whether the company can supply evidence of the electrician's competency and certificates.
- Assess whether the company maintains test inspection records of the arc welding machine.
- CoP requirement – Assess machine as per CoP section 2.

Please Note: *Electrical testing is to be completed by a qualified electrician.*

Reference:

- AS 1674.2 – 2007 – SECTION 5.1.1 - Insulation resistance and earthing resistance test.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.3 All Welding Machine Inspection/Assessments

- Visually assess the machine cabinet is in good condition.
- Visually assess the power switches operate as intended.
- Visually assess all the control panel devices/knobs are in good order and operate correctly.
- Visually assess whether the control devices/knobs operate correctly for their intended purpose.
- Visually assess the welding machines panel can be clearly read and identified.
- Visually assess all electronic panels can be clearly read and identified.
- Practical testing is included to confirm control switches, knobs are operational.
- CoP requirement – Assess machine as per CoP section 2.

Reference:

- AS 1674.2 section 5.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.4 The Environment the Welding Machine is Working in

Classification of the welding environment AS 1674.2 – 2007 section 1.3.6 & 2.

Before welding commences, the work area shall be assessed and the welding environment classified for electric shock in accordance with Clause 1.3.6.

Visually assess and confirm which environment the welding machine is working in:

Category A

- The risk of an electric shock or electrocution is low.
- Normal work practices are used.
- Not possible for the welder or any other worker to be in contact with the work piece.

Category B

- An environment where there is significant risk of the welder contacting the work piece or other parts of the welding circuit.
- Freedom of movement is restricted, so the welder is forced to perform welding in a cramped position (kneeling, sitting, lying) forcing physical contact with conductive parts (E.g. work piece).
- There is a high risk of accidental or unavoidable contact by the operator with conductive elements, which may or may not be in a confined space as defined by AS 2865.

Category C

- An environment where the risk of an electric shock or electrocution by arc welding is greatly increased due to low body impedance of the welder and a significant risk to the welder contacting the work piece or other parts of the welding circuit. Impedance is likely in the presence of water, moisture, or heat ambient temperature above 32 degrees when skin & PPE resistance is reduced because of wet, moist, humid, or perspiration environments.

Reference:

Australian Standard 1674.2 – 2007, Safety in welding and allied processes Part 2 Electrical.

Risk Assessments & Personnal Safety

Classification Of Welding Environment

Before welding commences, the work area shall be assessed and the welding environment classified for risk of electric shock in accordance with Clause 1.3.6. The following also applies:

a. **Category A environment (see clause 1.3.6.1).** In a category A environment, considerable effort is required to insulate the welder and others from the work piece, such as bench top welding where the work piece is small and there is low risk of the welder becoming part of the circuit; or both where the welder and any assistants are prevented from being in contact with conductive parts. For repetitive operations, such an environment is usually limited to carefully designed workstations, as well as the welder training and welding procedure qualification test bays.
Note:
   - AS 60974.1 and AS 60974.6 classify category A environment as 'environment without increased hazard of electric shock'

b. **Category B environment (see 1.3.6.2).** Category B environments include general fabrication activities, large work pieces, steel building structures, inside pressure vessels, processing tanks, storage tanks, conductive confined spaces and on board ships.
Note:
   - AS 60974.1 and AS 60974.6 classify category B environment as 'environment with increased hazard of electric shock'.
   - When the weather is hot, when high preheat temperatures are employed or when the vessel is exposed to the sun, many Category B environments become Category C environments.

c. **Category C environment (see clause 1.3.6.3).** Category C environments include, but are not limited to, coffer dams, trenches, underground mines, in rain, particularly submerged areas, slash zones.

Safety Devices Fitted to Welding Machines For The Environment They Are Working

- Visually assess the welding machine is equipped and protected by the appropriate electrical hazard safety devices stated in AS 1674.2 – 2007 section 2.2 & 3.2.7 e.g. Voltage reduction devices (VRD), handpiece trigger switch.
- Visually assess VRD are used, and whether the letter "S" is clearly stated on the rated panel in box 7.
- Visually assess whether the machine is operated in a category B & C environment.
- Visually assess insulating cushions, sheets, blankets, duckboards, and other suitable protection used to insulate the welder.
- CoP requirement – Assess machine as per CoP section 2.

Reference:

- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.5 Welding Machines Connector, Leads & Holder Clamp Inspection
Code of Practice - Welding Allied Process July 2012

Maintenance & Equipment

You must ensure that any equipment used in welding is adequately maintained.

Electrical equipment such as power sources, generators and welding machines and devices like ventilation systems and equipment must be properly installed, maintained, repaired and tested.

Accessories Inspection and Maintenance

AS 1674.2 – 2007 Section 5.2 Accessories.

Accessory equipment, including output leads, electrode holders, torches, wire feeders and the like, shall be inspected at least monthly by a competent person to ensure equipment is in a safe and serviceable condition. Unsafe and unserviceable accessories shall not be used.

5.6 Electrode Holder, Leads & Connectors

- Visually assess all Type A (All insulated), Type B (insulated), Type C (does not fulfil requirements of A & B) electrode holders to confirm suitable types for the working applications on site.
- Visually assess electrode holders to prescribed welding current and duty cycles for which holders may be used. Reference WTIA Tech note 7 Table 4.4.
- Visually assess the electrode holder used is compliant with AS 60974.1, and is operated in the correct environment.
- Visually assess the electrode holder insulation cover is safe.
- CoP requirement – Assess machine as per CoP section 2.

References:

- Electrode holder - AS 2826 & AS 1674.2 section 3.3.1.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.7 Mig, Tig, Plasma Holers, Leads & Connections

- Visually assess the welding cable/lead fitted and comply with AS 1995.
- Visually assess the cable/leads are less than 9 meters.
- Visually assess the cable/lead is longer than 9 meters, has the nominal cross section increase to compensate for cable voltage drop. Reference WTIA Tech note 7 Table 4.3 & 4.4.
- Visually assess the cable joiner in the lead to confirm the condition.
- Visually assess the welding cable/lead is the correct size for the welding task.
- Visually assess the leads are sound and free from burns, cracks and splits in the insulating covering.
- Confirm the welding lead is in good condition.
- Practical examination is included to confirm all holders, leads and connections are operational.
- CoP requirement – Assess machine as per CoP section 2.

References:

- Electrode/Mig/Tig holders cable/lead - AS 1995 & AS 1674.2 section 4.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.8. Connection/Terminals

- Assess the welding cable connected is tight and secure to the electrode holder, Mig gun and Tig torch.
- Assess the connection between the welding holder and the cable/lead is free from electrical wiring exposure.
- Assess the connector and/or lug onto the welding machine are in good condition.
- Assess the connection between the connector and/or lug and the cable/lead is free from electrical wiring exposure.
- Assess the cable joiners and connections are tight and free from electrical wiring exposure.
- CoP requirement – Assess machine as per CoP section 2.

References:

- AS 1674.2 section 4.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.9 Earth Clamp, Leads & Connections

- Assess the earth clamp is in good condition and free from damage.
- Assess the earth clamp is the correct size for the welding tasks.
- Assess the earth clamp is suitable for the attended welding current.
- CoP requirement – Assess machine as per CoP section 2.

References:

- AS 1674.2 section 4.
- Earth/Return clamp - AS 1674.2 section 5.2.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.10 Return Cable Leads

- Assess the return welding cable/lead fitted complies with AS 1995.
- Assess the return cable/lead is less than 9 meters.
- Assess the return cable/lead is longer than 9 meters, has the nominal cross section increased to compensate for cable voltage drop. Reference WTIA Tech note 7 Table 4.3 & 4.4.
- Assess the cable joiner in the lead, and whether it is in good condition.
- Assess the return welding cable/lead is the correct size for the welding task.
- Assess the return lead is sound and free from burns, cracks and splits in the insulating covering.
- Assess the return welding lead is in good condition.
- CoP requirement – Assess machine as per CoP section 2.

References:

- AS 1674.2 section 4.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.11 Terminals Connections

- Assess the welding cable connected is tight and secure to the earth clamp.
- Assess the lead/cable and lug to the earth clamp is free from electrical exposure.
- Assess the connector and or lug onto the welding machine is in good condition.
- Assess the connection between the connector or lug and the cable/lead is free from electrical wiring exposure.
- Assess the cable joiners and the connection is tight and free from electrical wiring exposure.
- CoP requirement – Assess machine as per CoP section 2.

References:

- AS 1674.2 section 4.
- CoP Reference section 3.3 Electrical Risk.
- CoP Reference section 4.3 Maintenance of Equipment.

5.12 Argon/Cylinder Regulators & Leak Test

- Leak test between the cylinder and argon regulator connection.
- Leak test low and high pressure gauges.
- Leak test the connection from the argon regulator to the argon flow meter.
- Leak test the connection between the argon regulator/flow meter and hose.
- Leak test argon hose.
- Leak test the argon hose connection to the welding machine.
- CoP requirement – Assess machine as per CoP section 2.

References:

- CoP Reference section 3.6 Compressed and Liquefied gases.
- CoP Reference section 4.3 Maintenance of Equipment.

5.13 Maintenance & Equipment

Equipment used with compressed gases, including regulators, must be properly maintained to prevent hazards such as gas leaks. Persons with management or control of workplaces must ensure that gas cylinders are regularly inspected by a competent person. They should frequently check whether cylinders and regulators are visually damaged or corroded and whether they are within test date. Gas pipes, hoses and tubing can easily become damaged over time so these should also be inspected regularly.

Regulator / Cylinder Inspection

Visually inspect the argon regulator low and high pressure gauges.

- Visually assess the argon regulator for damages.
- If fitted, visually assess the argon regulator flow meter.
- Test flow of regulator at the Mig/Tig gun torch. Assess if the correct flow from the regulator to the working handpiece is consistent. If there is 10 litres per minute, fluctuation management will be informed.
- Visually inspect all argon and hose fittings.
- Assess if the correct clamps are securing the argon hose to the barbed nipple and nut.
- Visually assess whether the argon regulator is 5 years or older and inform management of out of date regulators. Recommendation is 5 years but not exceeding 5 years that regulators be refurbished or replaced depending on the condition.
- Visually inspect the gas cylinder for signs of damage.
- Visually assess all labelling on cylinder CoP requirements – Assess machine as per CoP section 2.

References:

- CoP Reference section 3.6 Compressed and Liquefied gases.
- CoP Reference section 4.3 Maintenance of Equipment.

Welding Environment
Code of Practice - Welding Allied Process July 2012

6.1 Airbourne Contaminants – Guidance to Welding Fume Protection Assessments

Welding can generate fumes, mists, dust, vapours and gases including ozone. The amount and type of fumes produced varies greatly depending on the process involved and the materials being used such as metal, solvents, fluxes, paints and plastic. The exposure effects of fumes, dust, vapours and gases can vary, with effects including irritation of the upper respiratory tract, tightness of chest, asphyxiation, asthma, wheezing, metal fume fever and more.

Guidance – Code of Practice Welding Processes Section 3.1 Airborne Contaminants

- Consultants will assess if welding operators are provided with welding fume protection (PPE). This being either P2 welding masks, air assisted welding helmets and or welding fume extraction units.
- Consultants will document the welding consumables used on-site.
- Consultants will visually assess if the correct Safety Data Sheets (SDS) are attached and are visual within the sites register.
- Consultants will assess if the SDS is within its date.
- Consultants will assess management understand the materials being welded on-site e.g. Gal, Steel, painted steel.
- Consultants will assess if the correct welding fume PPE and or mechanical devices are available.
- CoP requirement – Assess machine as per CoP section 2.

References:

- CoP Reference section 3.1.

6.2 Radiation – Guidance To Protect People From UV & Infra-Red Radiation

Radiation is energy travelling as waves of electromagnetic radiation or subatomic particles. Electric arc and laser welding emit ultraviolet, visible light and infra-red radiation. Gas welding emits visible light and infra-red radiation.

The potential effect of radiation on the body depends on the type, intensity, the distance you are from it and the duration of exposure. Exposure to eyes causes 'arc eye' or 'welding flash'. Exposure to the body and or skin can cause harmful burns.

Guidance – Code of Practice Welding Processes Section 3.2 Radiation

- Consultants will assess welding screens are available on-site.
- Consultants will assess the welding screens are being used by the welding operators when welding.
- Consultants will assess the condition of the welding curtains.
- Consultants will assess if the correct PPE is available, this being welding helmets, safety welding glasses and visors.
- Consultants will assess if the correct welding jackets, pants, spats, hoods, boots and any other PPE is available to welding operators.

6.3 Fire & Explosion – Guidance to Protect Against Fire

Welding generates heat, flames and sparks - all of which are a source of ignition. When combined with sources of fuel and oxygen, sources of ignition present significant risks of fire and explosion.

Guidance – Code Of Practice Welding Processes Section 3.4 Fire & Explosion

- Consultants will assess if the company has a hot work permit system.
- Consultants will communicate with management to check the hot work permit is filed correctly.
- Consultants will assess weld bays and or the surrounding environment for welding blankets and fire extinguishers.
- While consultants are within the weld bay, or welding area, the house keeping of that area will be assessed for cleanliness and or identification of any potential hazard.
- Consultants will assess if the company has an emergency plan and procedure in the event of a fire.

6.4 General Welding Safety – Peoples Safety & Surrounding Environment

Welding operators are exposed to many hazards, such as burns, heat, noise, manual tasks and use daily gases and dangerous equipment.

Guidance – Code of practice Welding Processes section 3.5 Burns and exposure to heat and code of practice Welding Processes section 4.2 Personal protective equipment (PPE)

- Consultants will assess if the company has a first aid kit, and whether products are available to treat welding burns.
- If welders are working in hot environments, consultants will assess if there is a heat stress procedure available.
- Consultants will assess if water stations are available.
- Consultants will assess if hear PPE is available.
- Consultants will assess if there is a confined space welding procedure available. This is only applicable to companies with confined spaces.
- Consultants will assess the workshop environment for any manual handling hazards related to welding.
- Consultants will assess if welding operators maintain the correct level of training competency.
- Consultants will assess the workshop for any electrical risks. For equipment, please see the equipment section of the report.

6.5 Maintenance of Equipment

You must ensure that any equipment used in welding is adequately maintained. Electrical equipment such as power sources, generators and welding machines and devices like ventilation systems and equipment must be properly installed, maintained, repaired and tested.

- Consultants will assess whether the equipment is being maintained to a safe level.
- Consultants will assess if the PPE used on-site is in good working order.
- Consultants will assess all working environments and if other hazards are identified, management will be informed.

VRD Testing For Arc Welding Machines

WeldConnect Consultants use a Safetac VRD tester (series 3) to test all Arc welding machines (VRD'S) used in a Category B and C environment as stated in Australian Standard 1674.2 – 2007. WeldConnect consultants comply with the following procedure, and test your arc welding machines VRD annually.

- VRD Tester is a test unit designed to test all current DC VRD units on the market today.
- The series 3 is necessary because it is not possible to load many welders to a high enough current using resistors in a hand held tester.

Some welding machine models in the Cigweld, Lincoln, Kemppi and SafeTac range require a load of 30 or more amps to turn the VRD off and on.

- Unit has an internal 200 Ohm resistor and a programmable microprocessor precision voltage indicator to indicate the transition from less than 35 VDC (Green LED) to above 36 Volts DC (Flashing Red LED).
- The unit works by connecting leads and pressing the button to turn the unit on and then welding at 90 to 150 Amps for 2 to 3 seconds.
- It is still possible to test some Welding machines without welding with the optional load resistor.
- Unit will automatically power down after 3 minutes to increase battery life.
- Tester can be programmed to suit different voltages if required.
- Series 3 Tester will also work with the wired handpiece tig triggers & remote RF type electrode holder trigger switch device.
- Inline tester makes connection to welding machine easier and safer than other methods currently used.

7.1 SafeTac VRD Tester (Series 3)

VRD Test – Australian Standard 1674.2 2007 Maximum Test Values

Peak Volts DC	Rms AC	Operation Time	Test Resistance
35 vdc	25vac	300ms	200 Ohms

VRD Series 3 Tester

This tester will test the VRD turn on/off resistance & output voltage.

1. Connect input leads to (Positive or Electrode) & (Negative or Work) Welder.
2. Connect Work & Electrode to output Tester.
3. Start machine then press green button on tester & Green LED will turn on, if the RED LED flashes it means the output from the welder is to high & the VRD requires calibration.
4. If Green turn current to 90 - 150amps depending on electrodes size and weld for 3 seconds then stop, indictor should be green. If red or flashing, the output is higher than 35 VDC & the VRD requires calibration.

7.2 VRD Test Result

References:

- Maximum resistance of 200 Ohm AS60974.1 paragraph 13.1.
- VRD Operate time 300ms AS 60974.1 2006 paragraph 13.
- Maximum Voltage C environment AS 1674.2 2007 section 2.3.2.
- Category C environment AS 1674.2 2007 section 1.3.6.3.
- WTIA – voltage reduction devices Pre-start and routine Performance Verification Checks.
- Safe Tac VRD test sheet, procedure, Description & Operation.

Please note: *Consultants are trained to the above procedure as per SafeTac procedure only. Above test only covers VRD test, machine may require further test such as RCD trip setting & megger testing, we recommend compliance as per appropriate Australian Standards.*

Tagging Equipment/Report/Certificate of Compliance

8.1 Tagging Equipment - Identification Tag (ID)

- Each individual welding set will have an WeldConnect "EQUIPMENT SET ID" tag attached to the welding machine. Consultant will glue, silicone tag to machine. The ID tag will state the ID number
- The consultant will hand write within the "DATE TESTED" section the date all equipment was tested.
- The consultant will hand write within the "NEXT DUE" section the date the set is next due to be tested as per site agreement.

8.2 Tagging Equipment - Identification Stickers

- WeldConnect "ID STICKERS" state - Set number, Test Date, Next Due.
- When a consultant completes an assessment all leads, regulators and hoses will have a sticker attached.
- The consultant will hand write on the sticker - Equipment set ID number, the date the piece of equipment was tested, and the date the equipment is next due to be tested.
- The "ID EQUIPMENT TAG" states your WeldConnect company phone number, all test, tagging and assessment results. The back of the tag outlines the basic scope of work.

8.3 Report

- The WeldConnect APP Program is designed for our consultants to follow a strict assessment program.
- If hazards are identified the APP Program will outline within your report a generic risk control recommendation.
- WeldConnect reports are designed for all individual States and Territories, with a consistent and generic format.
- Once the consultant has completed the assessment on site, our aim is to have all completed reports to Key Stakeholders within 7 working days.
- 2014 WeldConnect will launch Intranet assess.
- All reports are saved for a minimum of 5 years within our ICLOUD security server.

8.4 Certificate of Compliance

- If required consultants can email to the Key Stakeholder a certificate of compliance.
- The certificate outlines the set ID number and the day the set was tested and is next due.
- This assists businesses that have mobile plant and are entering other sites as contractors.

References

Legislation

- Work Health and Safety Act 2012.
- Work Health and Safety Regulation 2011.
- Code of Practice – Welding Processes July 2012.
- Code of Practice – Managing electrical risk at the workplace.
- Code of Practice – Hazardous manual tasks.
- Adopted National Exposure Standards For Atmospheric contaminants in the Occupational Environment [NOHSC: 1003(1995) are the basis for hazardous substances regulations in Commonwealth, State Territory jurisdictions.
- [NOHSC: 1008 - 2004] Approved Criteria for Classifying Hazardous substances 3rd Edition.
- [NOHSC: 1005 – 1994] The national model Regulations for the Control of workplace Hazardous Substances.

Australian Standards

- Welding electrical safety, WTIA Technical note 22, published by the welding technology of Australia.
- Welding Technology Institute of Australia – Technical notes – 7 – 04, 22 – 03.
- AS 1674.2 – 2007 Safety in welding and allied processes – electrical.
- AS 1966 – Electric arc welding power sources Part 1, 2,3.
- AS 1995 – Welding Cable.
- AS 3190 – Approval and test specifications – residual current devices (current – operated earth – leakage devices).
- AS 3195 – Approval and test specification – portable machines for electrical arc welding and allied processes.
- AS 4332 – 2004 – The storage and handling of gases in cylinders.
- AS 4267 – Pressure regulators for use with industrial gases.
- AS 1338 – Filters for eye protectors.
- AS 1338.1 – Filters for protection against radiation generated in welding allied operations.
- AS 1336 – Recommended practices for occupational eye protection.
- AS 1337 – Eye protectors for industrial applications.
- AS/NZS 1270 – Acoustics – Hearing protectors.
- AS 1269.3 – Occupational noise management – Hearing protection program.
- AS/NZS 2161 – Occupational protective gloves.
- AS/NZS 4502 – Methods for evaluating clothing for protection against heat and fire.
- AS/NZS 2210 – Occupational protective footwear.
- AS 2210.1 – Safety, protective and occupational footwear. Guide to selection, care and use.
- AS 3957 – Light transmitting screens and curtains for welding operations.
- AS/NZS 1716 – Respiratory protective devices and be selected in accordance with –
- AS/NZS 1715 – Selection, use and maintenance of respiratory protective equipment.
- AS 1674.1 – Safety in welding and allied processes – Fire precaution.
- AS 3853 – Fumes for welding allied processes.
- AS 1335 – Hose assemblies for welding, cutting and allied processes.

Dangerous Goods - Related States

Western Australia

- Dangerous Goods Safety Act 2004.
- Dangerous Goods Safety (General) Regulation 2007.
- Dangerous Goods (Storage and Handling of Non – explosives) Regulations 2007.
- Dangerous Goods (Major Hazard Facilities) Regulations 2007.
- Dangerous Goods Safety (Explosives) Regulation 2007.
- Dangerous Goods Safety (Goods in Ports) Regulations 2007.

South Australia

- Work Health and Safety Act 2002.
- Work Health and Safety Regulations 2012.
- Dangerous Goods Substances Act 1979.
- Dangerous Substances Regulation 2002.
- Dangerous substances (Dangerous Goods Transport) Regulations 2008.

Queensland

- Work Health Safety Act 2011.
- Work Health and Safety Regulation 2011.
- Queensland Dangerous Goods Management Act 2001.
- Queensland Dangerous Goods Safety Management Regulation 2008.

New South Wales

- Work Health and Safety Act 2011.
- Work Health and Safety Regulation 2011.
- NSW Storage and Handling of Dangerous Goods Code of Practice 2005.

Victoria

- December 1 2012 - Dangerous Goods (Storage and Handling) Regulations 2012.
- Dangerous Goods Storage and Handling (Code of Practice No.27, 2000) Estimated new release 2013.

Northern Territory

- Work Health and Safety (National Uniform Legislation) Act 2011.
- Work Health and Safety (National Uniform Legislation) Regulation 2011.
- Dangerous Goods Act.
- Dangerous Goods Regulations 2 July 2012.

National Occupational Health & Safety Commission (Nohsc)

- National Standard for the Storage and Handling of Workplace Dangerous Goods [NOHSC: 1015 (2001)].
- NOHSC National Occupational Health and Safety Commission National Code of Practice. Storage and Handling of Workplace Dangerous Goods [NOHSC:2017 (2001)].

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Whilst completing the Welding environment & equipment hazard and risk assessment our certified staff are requested to update, replace and or repair welding equipment and parts.

All equipment fitted is as per Australian Standard requirements and or manufacturer requirements.

It is WeldConnect intention to fit the correct product for the task, which will have the ability to work within its task and maintain longevity.

WeldConnect certified agents will communicate the best product for the task, and will only fit equipment as instructed by the manager of that business.

WeldConnect has aligned itself with the best know Brands and products within the market.

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Keeping Welding Safe