

Safe Operating Procedure #05 – Welding (Arc/MIG)

	Activities	Procedures	Hazards/Risks	Controls
1	Check all welding equipment, including the gas supply.	Wear all appropriate personal protective equipment before stepping into workspace. Prior to starting, check Argon gas supply is secure and adequate. Check all connections are firm and that all protective equipment being worn is in good condition. Check that you have the correct type of electrodes based on the specifications of the work. Check that electrical equipment is in satisfactory working condition.	Burns, hearing loss, exposure to strong UV rays, adverse effects from toxic fumes. Valve leaks, UV exposure and eye damage through broken or faulty welding mask. Excessive or dangerous fumes due to coatings on metals to be welded. Electrocution or fires starting from faulty equipment.	Ensure you are wearing a welding mask. Do not wear synthetic clothing – long sleeve shirts and pants made from flame-proof material is required. Ensure you do not have any flammable liquids on your PPE. Ensure work area is well ventilated. Check that valve guards are in place and all connections are correct. Check that all gear is in good working order. Do not weld steel that has previously been coated without consulting your supervisor first. Check that all electrical equipment, including three phase equipment, has been tested and tagged by a competent individual as per AS/NZS 3760. If an item is not tagged, do not use it and consult your supervisor. In the event of a fault, do not proceed until the Supervisor instructs you to. Supervisor must document fault in Works Diary. Repair to be arranged and alternate safe-to-use equipment is to be provided.
2	Check work area is safe.	Check work area is free of combustible materials.	Risk of combustion causing burns or fire.	Ensure all combustible materials are clear of welding area. Do not smoke in or near the welding bay. Be aware of the location of fire extinguishers, understand

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		Note the location of your nearest fire extinguisher. Ensure area of work is slip & trip free. Check welding screens are in place.	Risk of operator slipping or tripping, causing injury. Exposure of operator or others to UV Radiation, causing skin or eye cancers. Sparks flying out of welding area, resulting in burns or fires	what types of fires they are suitable for and how to use them. Do not have any flammable liquids on your PPE. See the safety data sheet for further safety related information on the gas being used and other dangerous goods in the vicinity. Ensure floor areas are clear of trip or slip hazards by keeping all work items off the floor and leads are placed in a safe area where people cannot trip over them. Wear steel cap non-slip boots. Ensure screen protection is in place for welding radiation and sparks. Ensure there is adequate ventilation in the area and clearance under screens for air flow. Operator must wear welding mask and respirator. Welding blankets to be used as an additional flame-resistant barrier between welding station and surrounding areas.
3	Secure, position and prepare the steel to be welded and earthed.	Ensure steel to be welded is secured and cannot move and that the steel is earthed to the MIG gear.	Steel moves unexpectedly or is moved by hand causing crushing or manual handling injury. Clamp or cables too hot causing hand burns. Circuit flowing through operator instead of	Ensure steel is in a safe and secure position after being moved, craned or wheeled to work area. Do not manually handle unless you have assessed that it is safe to do so. Earth to clean surfaces to avoid overheating cables or earth clamp, and to ensure that the current flows safely.

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		Flipping the steel using a flipping tool to access other parts of the steel to be welded.	ground cable, resulting in electrocution. Circuit flowing through other structures, causing damage. Manual handling injury from trying to move too much weight. Steel and flipping tool rotating uncontrollably or unnoticed by either the user or someone else nearby. This may result in death or serious injury through being crushed by steel or flicked in the eye, face or other body parts by the tool.	Only use the flipping tool if you have assessed the weight of the steel is not too heavy to move based on the strength of the tool and on your own physical capabilities. If the steel is too heavy, this tool must not be used, and an overhead crane is to be used instead. Secure the position of the steel in the gripping part of the tool and rotate with both hands on it. Ensure there is enough room on the trestles for the steel to move in the direction that you are rotating. Do not use the flipping tool without others in the vicinity being aware. Do not keep the tool gripped onto the steel when you are not using it or are looking away. If you lose control, do not try to maintain your grip on the flipping tool. Immediately take evasive action by getting all body parts out of the way.
4	Use MIG welder to weld steel.	Ensure work is secured against movement and proceed to weld.	Welding point moves over clothing or body parts. Spatter lands onto hands or other	Ensure leather apron or equivalent body protection is worn, leather gloves are worn, eye and UV mask protection is worn.

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			body parts, or sparks fly into face or eyes, resulting in burns.	Be mindful prior to starting the weld that either your own body, clothing or other objects will not get in the way of the weld path. Ensure other people are clear of work area to avoid disturbance.
5	Welding Complete.	Steel cooling/weld seam cooling.	Hot surfaces result in burns.	Wait for steel to cool before physically handling it. Wear leather gloves when handling steel that is still cooling.

- Personal Protective Equipment that must be used:

Welding mask and respirator, leather apron or equivalent, eye protection, leather gloves/gauntlets, steel capped footwear, long-sleeve flame resistant clothing i.e. not synthetic

This SOP has been developed in consultation with me and I agree to follow it and carry out tasks in a safe manner, reporting any problems to my immediate Supervisor.

Bundy Card #	Name	Signature	Date



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