

MEM549AA

Unit Descriptor

Perform routine gas tungsten arc welding

This unit covers the competencies required for identifying welding requirements from instructions, preparing the materials and carrying out routine GTAW. This unit applies in a maintenance or manufacturing environment where the welding is not required to meet the Australian Standard 1554 General Purpose. The materials used would typically be low carbon and mild steels.

Unit Sector

No sector assigned

ELEMENT

PERFORMANCE CRITERIA

- | | |
|----------------------------------|---|
| 1. Identify weld requirements | 1.1 Weld requirements are identified from job instructions.
1.2 Assessor to observe appropriate instructions, specifications and drawings are obtained and weld requirements identified in accordance with work site procedures.
1.3 Assessor to confirm the weld requirements for performing routine GTAW can be given.
1.4 Location of welds are identified in accordance with standard operating procedures and job specifications.
1.5 Assessor to observe location of required weld/s identified for given tasks.
1.6 Assessor to confirm location of weld can be determined from standard operating procedures and job specifications |
| 2. Prepare materials for welding | 2.1 Materials are cleaned and prepared ready for welding.
2.2 Assessor to observe the materials to be welded are cleaned and prepared using appropriate tools and techniques.
2.3 Assessor to confirm the materials preparation required prior to welding can be identified. The tools and techniques appropriate to the preparation of materials to be welded can be identified. |
| 3. Prepare equipment for welding | 3.1 Welding equipment is set up correctly.
3.2 Assessor to observe the welding leads, gas regulators and hoses are correctly attached. Clean and correct liner and contact tip selected.
3.3 Assessor to confirm different liners and tips can be given to suit typical situations. Machine controls and their functions can be identified and explained.
3.4 Settings and consumables are selected to suit application.
3.5 Assessor to observe correct gas flow rate is set. The welding machine is set for the electrode wire diameter to produce the weld required. The range of variables is appropriate for the weld required. Appropriate current and voltage range for the weld required are set.
3.6 Assessor to confirm different current & voltage settings, gas flow rates wire diameters and other variables can be given to suit typical situations. |

- 4. Perform routine welding using GTAW
 - 4.1 Safe welding practices are applied.
 - 4.2 Assessor to observe all welds are performed in a safe manner with regard to the operator and other personnel. Precautions are taken to protect the welder and other personnel from hazards associated with welding process.
 - 4.3 Assessor to confirm safe welding practices and precautions can be given. Typical hazards can be identified.
 - 4.4 Materials are welded to job requirements.
 - 4.5 Assessor to observe welds are produced with a minimum number of major defects. Appropriate action taken to report defects. Cause of major defects identified and required adjustments to settings/ welding technique identified.
 - 4.6 Assessor to confirm major defects and their causes relating to GTAW can be given.
 - 4.7 Welds cleaned in accordance with standard operating procedures.
 - 4.8 Assessor to observe all welds are cleaned to specification. Standard operating procedures are followed, where applicable.
 - 4.9 Assessor to confirm the weld cleaning requirements can be identified. The appropriate tools/equipment for cleaning welds can be identified

KEY COMPETENCIES

Key Competency	Performance Level
Communicating ideas and information	-
Collecting analysing and organising information	-
Planning and organising activities	-
Working with others and in teams	-
Using mathematical ideas and techniques	-
Solving problems	-
Using technology	-

RANGE STATEMENT

Range Description

Routine GTAW in this unit is intended to apply in a manufacturing or maintenance environment where welding is not required to meet Australian Standards or other welding codes, Occupational Health and Safety regulations relating to certificated/coded welding and/or licensing requirements. Fillet and butt welds in all positions would typically be performed on low carbon/mild steels. Weld preparation would be minimal and generally restricted to cleaning, using files and grinders. In circumstances where welding is required to meet Australian Standard 1554 General Purpose or equivalent codes, Occupational Health and Safety regulations and/or licensing requirements Unit 5.19A (Weld using gas tungsten arc welding process) should be selected.

EVIDENCE GUIDE

Conditions

- The candidate will have access to: - All tools, equipment, materials and documentation required. The candidate will be permitted to refer to the following documents: - Any relevant workplace procedures. - Any relevant product and manufacturing specifications. - Any relevant codes, standards, manuals and reference manuals. The candidate will be required to: - Orally, or by other methods of communication, answer questions put by the assessor. - Identify colleagues who can be approached for the collection of competency evidence where appropriate. - Present evidence of credit for any off-job training related to this unit. Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge.

Context

- This unit may be assessed on the job, off the job or a combination of both on and off the job. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

Critical Aspects

- This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with routine gas tungsten arc welding or other units requiring the exercise of the skills and knowledge covered by this unit. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Special Notes

- During assessment the individual will: - demonstrate safe working practices at all times; - communicate information about processes, events or tasks being undertaken to ensure a safe and efficient working environment; - take responsibility for the quality of their own work; - plan tasks in all situations and review task requirements as appropriate; - perform all tasks in accordance with standard operating procedures; - perform all tasks to specification; - use accepted engineering techniques, practices, processes and workplace procedures. Tasks involved will be completed within reasonable time frames relating to typical workplace activities.