



Australian Government

PMBWELD309E Weld plastic using extrusion techniques

Release: 1

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Modification History

Release 1. Unit code changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBWELD309 Weld plastic using extrusion techniques.

Application

This unit describes the skills and knowledge required to weld plastic components using extrusion welding techniques, both in the field and under factory conditions.

This unit applies to an experienced technician working alone or as part of a team.

The unit principally refers to the planning for, setting up, performing and quality-checking the weld, and maintaining and calibrating the equipment used.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil.

Competency Field

Welding – Plastic Extrusion Welding, Plastic Pipelines

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Assess suitability of materials for welding	1.1 Identify materials as polyethylene from job specifications and worksite instructions, and select suitable materials to meet requirements 1.2 Check suitability of supplied plastic materials and components for welding from job specifications and tests
2. Assess plastics welding conditions	2.1 Identify welding machine type and operating requirements from job specifications 2.2 Identify plastic component materials and dimensions from job specifications 2.3 Identify welding rods or granules from job specifications

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	2.4 Select welding conditions for individual welding machines and plastic components 2.5 Prepare field operational sheets according to workplace procedures
3. Maintain and calibrate welding equipment	3.1 Set up welding equipment and work area to suit job requirements 3.2 Ensure safety equipment is available and operational 3.3 Inspect equipment, and report on and rectify non-conforming equipment 3.4 Check operation of equipment, and adjust where required heating, material feed rate and pressure systems according to equipment specifications 3.5 Use personal protective equipment (PPE) according to workplace procedures
4. Perform welding	4.1 Clean machine and align, prepare and trim abutting plastic component ends according to job specifications 4.2 Assemble components in holding jigs as required to support welding task 4.3 Perform heating, welding and cooling phases using calculated welding conditions and job specifications 4.4 Monitor and record achieved weld conditions for each assembly according to workplace requirements 4.5 Clean up equipment following welding completion according to workplace requirements 4.6 Clean-up work area, and apply waste management strategies to dispose of scrap materials according to workplace specification
5. Assess quality of completed joints	5.1 Identify quality standards for visual inspection of joints from job specifications 5.2 Visually assess joints against job specifications and report results 5.3 Accurately maintain records and logbooks

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Numeracy skills to perform measurements and interpret technical specifications of job.
- Reading skills to interpret job specifications and workplace procedures.
- Writing and oral communication skills to record and report on welding of plastics using extrusion techniques.

Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to PMBWELD309 Weld plastic using extrusion techniques.

Links

Companion Volume implementation guides are found in VETNet – -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090>

Assessment Requirements for PMBWELD309E Weld plastic using extrusion techniques

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and has demonstrated the ability to:

- weld plastics using extrusion techniques at least once, to meet job specifications and:
- identify with supporting evidence each of the following materials as polyethylenes:
- high-density polyethylene (HDPE)
- low-density polyethylene (LDPE)
- polypropylene (PP)
- acrylonitrile butadiene styrene (ABS)
- high-impact polystyrene (HIPS)
- polyvinylchloride (PVC).

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- the function and operating principles of electrical activated extrusion welding machines
- types of welding rods and their suitability for use with different materials and job requirements
- production workflow sequences and materials demand
- characteristics of materials and their behaviour in relation to the welding process, including:
 - high-density polyethylene (HDPE)
 - low-density polyethylene (LDPE)
 - polypropylene (PP)
 - acrylonitrile butadiene styrene (ABS)
 - high-impact polystyrene (HIPS)
 - polyvinylchloride (PVC)
- typical quality standards required at each stage of production
- key variables that may affect product quality and production output, and how to manage them
- typical and atypical process and product problems, including early warning signs, possible causes and corrective actions

- organisational procedures relevant to the work environment or job role
- hazards that may arise in the job or work environment, and:
 - their possible causes
 - potential consequences
 - appropriate risk controls.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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