



Australian Government

PMBWELD302E Join polyethylene plastic pipelines using electrofusion welding

Release: 1

PMBWELD302E Join polyethylene plastic pipelines using electrofusion welding

Modification History

Release 1. Unit code and title changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBWELD302 Electrofusion weld polyethylene plastic pipelines.

Application

This unit describes the skills and knowledge required to weld polyethylene (commonly referred to as PE) plastic pipes using electrofusion, 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 a process that applies similar techniques to the applied science covered in PMBWELD301E Join polyethylene plastic pipelines using electrofusion welding, where the weld is achieved at the weld interface through polymer diffusion-mixing.

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 Pipelines, Plastic Welding

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. Identify compatibility of commercial electrofusion control systems	1.1 Identify electrofusion welding control unit type and operating data from job specifications 1.2 Identify compatibility of polyethylene pipe material and dimension with electrofusion fittings requirements from job specifications 1.3 Identify compatibility of control unit with electrofusion fitting control requirements from job specifications

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
2. Maintain and adjust electrofusion control unit equipment	2.1 Set up electrofusion welding equipment and work area to suit job requirements 2.2 Ensure safety equipment is available and operational for requirements 2.3 Inspect equipment, and report on and rectify non-conforming equipment 2.4 Check operation of equipment using equipment readings and specifications
3. Perform electrofusion welding operations	3.1 Prepare pipe and fitting according to specification 3.2 Perform heating, welding and cooling phases using calculated electrofusion welding parameters 3.3 Monitor and accurately record achieved electrofusion welding parameters for each joint according to workplace procedures 3.4 Clean-up and maintain equipment following completion of welding according to equipment instructions 3.5 Clean-up work area, and apply waste management strategies to dispose of scrap materials according to workplace procedures
4. Visually inspect completed electrofusion joints	4.1 Identify quality standards for visible characteristics of electrofusion joints from job specifications 4.2 Visually assess joints against job requirements and report results, including non-conforming results 4.3 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 calculate welding parameters, and interpret equipment readings and technical specifications.
- Reading skills to interpret job specifications and workplace procedures.
- Writing and oral communication skills to record and report on welding of polyethylene plastic pipelines using electrofusion welding 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 PMBWELD302 Electrofusion weld polyethylene plastic pipelines.

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 PMBWELD302E Join polyethylene plastic pipelines using electrofusion welding

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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 of competency, and demonstrated the ability to:

- join polyethylene plastic pipelines using electrofusion welding, at least once, to meet job specifications, and including:
 - preparation of joint assemblies:
 - clamping
 - aligning
 - insertion
 - pipe peeling to be smooth and to the correct depth.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- the function and operating principles of electrofusion welding equipment, components and ancillary equipment
- characteristics of materials and their behaviour in relation to welding process variables and stages of production
- typical quality standards required at each stage of production
- production workflow sequences and materials demand
- key variables that may affect product quality and production output, and how to manage them, including:
 - voltage
 - fusion time
 - cooling time
 - alignment
 - product output rate
- worksite environment factors that may affect joint quality and appropriate remedies
- typical process and product problems, including early warning signs, possible causes and corrective actions
- organisational procedures relevant to the work environment and job role.

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.

Links

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